

s47F(1)

From: s47F(1) @energyproducers.au >
Sent: Monday, 30 October 2023 5:50 PM
To: Weeks, Cliff
Cc: s47F(1)
Subject: First Nations Summit - Request for meeting to coordinate industry/regulator session

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Hi Cliff,

With the Sea Country Alliance Summit just a week away, I was hoping you would be available to meet with s47F(1) via Teams, to coordinate on planning and preparation for the industry/government session at the summit next Monday Morning in Darwin.

If you are happy to meet, our availability is as follows (AWST):

Tuesday 31 October 09:00 – 14:00

Wednesday 1 November 08:00 – 10:30

Thursday 2 November 09:00 – 12:30

Friday 3 November 09:00 – 14:00

Please let me now of your preferred time and I will arrange a Teams call.

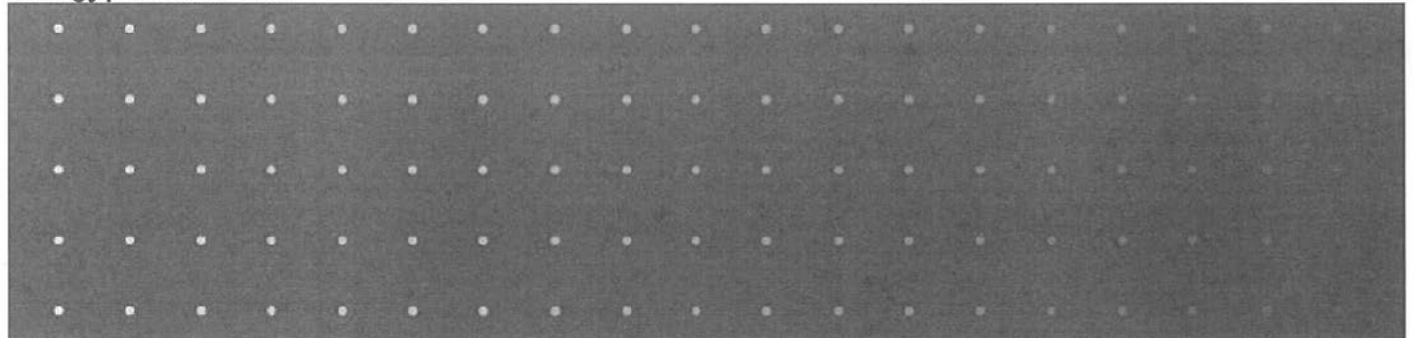
Kind regards

s47F(1)

s47F(1)

M s47F(1) E s47F(1)@energyproducers.au

energyproducers.au



Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

s47F(1)

From: s47F(1) @energyproducers.au >
Sent: Wednesday, 8 November 2023 4:13 PM
To: s47F(1)
Subject: RE: Summit media [SEC=OFFICIAL]
Attachments: Summit presser.docx

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Hi s47F(1)

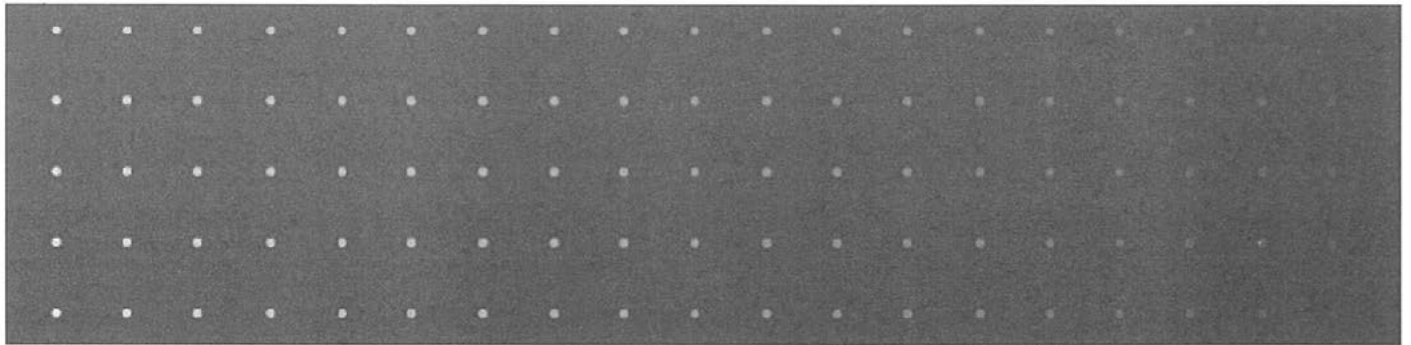
No problem, please see the attached transcript.

Kind regards

s47F(1)

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energyproducers.au



Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

From: s47F(1) @industry.gov.au >
Sent: Wednesday, November 8, 2023 1:09 PM
To: s47F(1) @energyproducers.au >
Subject: RE: Summit media [SEC=OFFICIAL]

The transcript would be great, thanks s47F(1).

OFFICIAL

From: s47F(1) @energyproducers.au >
Sent: Wednesday, 8 November 2023 12:59 PM
To: s47F(1) @industry.gov.au >
Subject: RE: Summit media [SEC=OFFICIAL]

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s47F(1)

I understand that there was news cameras from ABC Darwin and NITV at a media doorstep interview following the summit, with an enquiry with us presently from the Guardian. We have our own transcription of this media doorstep which I am happy to share if that is helpful?

Kind regards

s47F(1)

s47F(1)

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energyproducers.au



Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

From: s47F(1) @industry.gov.au>
Sent: Wednesday, November 8, 2023 11:15 AM
To: s47F(1) @energyproducers.au>
Subject: Summit media [SEC=OFFICIAL]

OFFICIAL

Hi s47F(1)

You mentioned there was some media after the Summit Monday/yesterday – would you be able to send through a link to that? I’m unable to find it!

Thanks

s47F(1)

s47F(1)

Manager

Oil and Gas Division | Offshore Strategy Branch | Environment and Safety

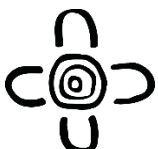
Whadjuk Country, 12 The Esplanade, Perth WA 6000 Australia

Department of Industry, Science and Resources

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| industry.gov.au ABN 74 599 608 295

Supporting economic growth and job creation for all Australians | We are collaborative, innovative, respectful and strive for excellence



Acknowledgement of Country

Our department recognises the First Peoples of this Nation and their ongoing cultural and spiritual connections to the lands, waters, seas, skies, and communities.

We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.



OFFICIAL

National Sea Country Summit doorstep

3.30pm Tuesday 7 November 2023, Darwin Convention Centre.

Jamie Lowe, National Native Title Council (NNTC) CEO.

Natalie Rotumah, Native Title Services Corp (NSW)

Tyronne Garstone, Kimberley Land Council CEO.

Jamie Lowe: My name is Jamie Lowe, a Gundjitmara Djabwurrung man from the South West of Victoria and CEO of the National Native Title Council. We've been here on Larrakia country for the last two days, having a critically important conversation about our mob and our country and rights and interests across the nation. We've had communities from all states and territories come together here in Darwin to discuss the important issues. I think that the Santos decision some 12 months ago now really woke not only the mob up, but also industry and how they actually do business with our people. So it's been quite an in-depth conversation. A conversation of solidarity for our people. So yeah, that's been the last two days.

Natalie Rotumah: Thanks, Jamie. My name is Natalia Rotumah, a proud Bundjalung woman from Tweed Heads. I'm also the chief executive officer of NTSCorp, the service provider for Native Title in New South Wales and the ACT. It was quite heartening to be here on Larrakia Country over the last two days, as Jamie's referred to, having a very important conversation of our country, our rights and our interests to that sea country. And again, quite heartening that industry has come to us and inclusion, and that there's going to be the opportunity for each state and territory represented here over the last couple of days. The collaboration in the space has been wonderful. Also, I guess the view is we've had male, female, young, old, and to see those views from around the country, although not dissimilar. And I think it's our people. We don't see our land and sea as being different. They are linked and we obviously have those obligations and rights in that sea country as well.

Tyronne Garstone: Hi, I'm Tyronne Garstone, I'm the CEO of the Kimberley Land Council. I'm a proud Bardi man from the West Kimberlies. Today and yesterday was a historic moment, really, to have the collaboration that we had from all around Australia. Traditional Owners representing their sea country. It is a significant gathering to, really

what we're trying to do, is trying to rectify some of the issues that have been caused by the decision that happened last December through the Santos decision, and so we've been trying to work with both industry and also NOPSEMA the regulator, about trying to find a way forward, creating a solution to an issue that we didn't create. However, this opportunity has created a mutual understanding about how we can elevate awareness about our connection to not only land, but also to the sea. A critical thing for myself is that we're saltwater people. We rely on the sea for our sustenance, you know, so it's critical that our rights, even though through the native title process it hasn't been recognised, it doesn't mean that our connection is lost when it comes to these waters.

NNTC facilitator: Do you want to talk about how this summit came about?

Jamie Lowe: We are identified as possibly about 150 First Nations groups that have a direct Sea Country interest. So that was the first thing we've done. We identified the different communities out there which have a Sea Country interest and an obligation to care for country. We invited all those mobs here for the two days. We had over 150 delegates attend, and so it was, as Tyrone said, quite a landmark moment for all those mobs to come together and talk about the commonalities of looking after Country and Sea Country, but also the differences because there's disperse views around how Country's managed, we have different stories connected to country and how we interact with that. So the solidarity, as I said, was quite profound. And people were here chosen by their people to be here, which I think is another critical point as well. They weren't here representing, you know, individual views. They were representing the views of the people, which I think is extremely powerful. And particularly, you know, on the back of, you know, the referendum and whatnot, we can still have a voice for to speak for our rights and our obligations to care for Country and Sea Country.

Tyrone Garstone: There has been a lot of confusion happening out in our communities. We've been receiving a lot of notices from oil and gas companies out there in regards to wanting to consult with us. So there was this need. There was a summit held in Perth back in June earlier this year, where there wasn't enough traditional owners in the room to really try and collaborate around what is a united position from traditional owners around this particular issue. So this particular opportunity, the two day summit that we've had here, that's from the National Sea Alliance, is one of solidarity, one of strength, one of recognition. And hopefully this is

one of a few more gatherings where we can start to formulate what the relationship and what the partnership is with both traditional owners, industry and the regulator trying to resolve an issue that is dear to all of us.

Facilitator: And can you give an overview of what was discussed over the last two days?

Natalie Rotumah: From throughout the room I think it became very clear to us that we need to have a look at principles that would underpin consultation. And as we said, there were lots of different views from right across the country, but at the end of the day, it was the recognition that we want, that we do have those obligations in Sea Country. It was also that we want to be a part of any process, and we want that very early engagement. We want it to be meaningful as well, not tokenistic and not just lip service. We actually want industry and government to talk to us as First Nations people. And, you know, we're coming to them to, I guess, provide them options to resolve issues they have. We're not the issue here, but we are going again back to, I guess, to try and iron out some of those, some of those kinks, I guess, in the carpet, and want to be a part of it. As we've always said, that Sea Country is very important to us. To Tyrone's point about Native Title, and there aren't too many Native Title determinations in the country that actually pick up those rights and interests in that Sea Country. But we don't see that as anything that can stop us either. It just means that we can utilise Native Title, we can utilise a number of other options that are out there to us to ensure that we have the right people, not only for Country, but for Sea Country sitting in those seats at the table, negotiating what is rightfully theirs to be negotiated.

Journalist: So would you be looking to, in the future grow those rights over the Sea Country that you're talking about?

Natalie Rotumah: Oh, absolutely. And that would be a matter for each of the respective nations of people right around our country to sit down with their Elders and to go through their local decision-making processes and then work out what it is that they want to see recognised in their particular part of Sea Country.

Tyrone Garstone: One thing I would add to that is that Traditional Owners acknowledge that business has to get done as well, so we aren't afraid of doing

business. It's about making sure that our cultural aspects of managing, our cultural obligations of managing land and sea has at least been adhered to, and that is being acknowledged, and we can feel comfortable that there's mitigation practices in place, proper consultation that's been put in front of us so that we can make using UNDRIP and FPIC principles to make decisions. This is not to alter industry. This is about to work alongside them, to educate them, to share in the wealth and the knowledge that we, as Traditional Owners have on our country and of our sea.

Journalist: And just to that, that balance seems to be one where particularly the (Tiwi) case that's been brought forward over the last year or so has been one where it's really trying to push back against a) what consultation looks like, and b) what is the balance between preservation of cultural sites and access to country. Can you speak a little bit about those discussions over the last two days?

Jamie Lowe: We are grappling with the balancing of all that, protecting our rights and interests, protecting country, cultural sites, etcetera, the environmental aspects, but also to Tyrone's point, we're in the business of economic development as well. So we are working through that as we speak. Whether it be on the ground as Prescribed Body Corporates, larger council representative bodies and through the National Native Title Council. We want to see our people prosper as well, but we also want to protect our sites at the same time. So I think that's critical to point out. Over the last couple of days, we we've talked about FPIC principles and frameworks. I think that's critical as well. And people think that FPIC is just about saying no, but it's also about saying yes, but under the right terms. That's critical. And it's about putting us at the front of the bus rather than at the back of the bus and being able to benefit-share with industry and also government. We know that that hasn't taken place within Australia that well, we had some of our First Nations brothers and sisters dial in and talk to us about their experiences with industry over there in Canada. And, you know, it's like comparing apples and oranges – they're not the same thing. They're decades if not centuries ahead of where we're at here in Australia, so we do have a way to go. And I think that it's a bit of catch up from not only the government and the policies that they're creating and supporting First Nations rights and interests, but also industry has a way to catch up as well. I think that we're willing to work with industry to see what that looks like, but we won't be backing down from our positions.

Journalist: Is there any reason for us to be decades behind given these are multinational companies?

Jamie Lowe: I think government's definitely played a role in that. You know, we've seen that on the 14th of October. We're quite a conservative country and First Nations rights and interests haven't necessarily been represented that well, or at all, here in Australia. We know that the litigation process is probably critical to elevating our rights. So that's the thing. And, you know, there's no greater case for that than the Mabo decision some 30 odd years ago now. So, you know, we need to keep on bringing the fight. And, you know, we use all the tools in our arsenal to make sure our rights are represented.

Journalist: Tyronne, can I ask, coming from the Kimberley, how does how do the needs of Traditional Owners there fit in with the national agenda that would come under the Sea Country Alliance?

Tyronne Garstone: Culturally, we have connections, you know, even though it's the Western framework that allows us to have jurisdiction. So when we talk about the Kimberleys, we have connections running into the desert. And we've proven we have a cultural trading line from the Kimberleys all the way through the centre of Australia, right down to South Australia, across to the Torres Strait Islands and even with our neighbours here in the Northern Territory. So culturally, we've always known the connectivity. It only makes sense for us to be working collectively, because what we've seen is through the other resources (issues?) that we've had winners and losers. We've had some of our groups that don't have the capacity or the resources to be able to negotiate proper engagement and good consultations, which generally lead to some sort of agreement. There's the poor ones and then there's good ones. And really, what we're trying to work through with this process is to make sure that there's no winners and losers, that there's just really good upfront engagement with us and industry in a partnership, respectful partnership, so that we both can prosper, not only prosper, as you know, we understand the world of economics. There has to be money made, but also not to the detriment of to our own people and to the loss of our cultural significant sites and generally for the betterment of all Australians as well.

Journalist: One thing that some minerals companies have become criticised for is perhaps doing that exactly the winners and losers, but also kind of targeting specific

families within clan groups that they think may be more amenable to things like this. Do you think a conference like this helps, I guess, build this kind of solidarity around a broader consensus being built throughout a clan group as well?

Tyronne Garstone: Oh, look, I think there's always been history has shown there's a strategy, whether it's been government or the private sector, of trying to drive a wedge to position themselves to get an outcome which generally favours their intentions. And for us, this does create that solidarity. This is trying to pick people up to show that we all have common goals. A lot of the conversations that we've had over the last few days was a mirror image from table to table. You know, we were basically sharing notes. And it's quite interesting when you think sometimes when you're operating in your own little area, you think that you're the only one tackling these issues. And the reality is it's similar across the whole breadth of Australia. So yes, it does feel good to be able to collaborate, and it does feel good to have a united front and also have the collective power to say to government, this is what we want to be as a collective. And rather than trying to divide opinions and views and again, try and set poor standards or a low benchmark for First Nation groups.

Facilitator: Throughout the last few days, we spoke about the importance of timing and the importance of having Aboriginal groups involved at the very beginning of the process. So do you want to expand on that, Jamie?

Jamie Lowe: Well, I think it just goes to the FPIC framework. Within Australia we haven't got any real legislation that supports an FPIC, so that'll be something that we'll continue to do that. So early engagement is critical. So (inaudible) upholding other elements of UNDRIP. It's also about respecting the representative institutions as well and reinforcing those that are that, you know, have the meetings and have the strong governance and to be able to kind of bring the mob together to make decisions in relation to country and industry when they're working on the country as well. We think there's a point well made about, um, you know, the industry historically have tried to pick, you know, individuals, families off. And we're seeing that happening in some cases. It's not only industry that does it. Other activist groups do it as well. They find individuals with – like-minded individuals – and they start picking our mob off. So our governance structures are critical. Collective decision making is critical as well. So I just wanted to make that point, to reinforce that that goes to the to the early engagement and FPIC framework as well.

Tyronne Garstone: And one of the things there is that when we win our Native Title, we win Native Title as a society. So when you come and consult with us, you're not consulting with our CEO or our board, or an organisation. You're consulting with the society, and we have our own governance and cultural frameworks, which are quite often quite technical and complex for Western societies to understand. So we need time to be able to work through those processes. It's not as simple as just going to a board and getting a resolution. You know, it's about consulting with the right people at the right time. We're time sensitive because we have other cultural obligations happening, whether it's law business or whether it's sorry business. All these factors need to be considered when we have to try and meet the pressures of trying to operate in a commercial space.

Journalist: You had 60 different traditional owner corporations that were engaged.. (inaudible)

Jamie Lowe: There was so much solidarity of the last two days there was no one splintering off. Everyone left pointing in the same direction.

Journalist: Victoria, you have a First Peoples Assembly that allows for direct representation.. Do you think that is something that can help (in other states)?

Jamie Lowe: Well, Victoria, you know, it's quite unique what's going on in Victoria, with the representative institution through the assembly that's been established. The unique thing about the assembly is that it's got one job and that's to negotiate a treaty with the state of Victoria. And that would encapsulate a whole lot of stuff and people including Sea Country interest, of course, and all the other projects and, you know, other social issues that are happening down there. So, yeah, could that be duplicated in other states and territories? Yeah, sure. But we've seen, you know, governments now walking away, you know, from those representative institutions. I know Queensland are baulking at it. So we would definitely advocate for that. And I guess what we're trying to do now through even alliances like this is just like, well, we don't need to keep on asking government for them to, you know, give us a voice. We can create our own voice and that's something that is critical and something that was profound over the last few days with us coming together in solidarity. END



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13 June 2023

The Hon Anthony Albanese MP
Prime Minister
Parliament House
CANBERRA ACT 2600

Dear Prime Minister

RE: Open and transparent government consultation processes

The Australian Petroleum Production and Exploration Association (APPEA) and its members welcome the Government's commitment to broad consultation and transparency in decision making as central tenets of effective, democratic policy making and achieving first-best outcomes for the Australian economy.

As an industry, we note our concern that important national policy consultations are increasingly being held under strict confidentiality arrangements. For example, recent consultations on the Petroleum Resource Rent Tax (PRRT), the Safeguard Mechanism and the Mandatory Code of Conduct have been progressed under confidentiality agreements or arrangements with select companies. These agreements have prevented companies from consulting with the APPEA secretariat, with other companies and across government. In some cases they have prevented staff from consulting with their management and Boards, undermining corporate governance obligations. The approach necessarily leaves a range of interested and affected parties outside the policy development process and creates a material risk of sub-optimal policy outcomes.

It is imperative that policy development processes are open and transparent, in line with established best practices, to ensure market-wide, broad-based consideration of the implications of reforms to support sound policy outcomes across the industry. At a minimum, the industry's peak body must be included in all consultation processes to ensure whole of industry perspectives can inform the policy development process.

APPEA and its members have demonstrated a long-standing commitment to constructive and transparent engagement with Government. We as an industry have engaged with a large number of government reform processes in recent months with the aim of strengthening the operations of the industry to achieve the best possible outcomes for all Australians.

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The industry welcomes the opportunity for genuine consultation on these and other reforms that have profound and lasting impacts on the operating and investment environment for existing and new oil and gas projects. These projects will be critical in meeting the objective of net zero emissions by 2050 not only for Australia but also our strategic trading partners.

The oil and gas industry plays a leading role in enabling Australia's energy security, economic prosperity and emissions reductions. The industry has invested more than A\$400 billion in the development of gas supply projects in the past decade and supports around 80,000 highly-skilled jobs. Natural gas is an essential input for Australian manufacturing and will underpin your government's plans to increase Australia's manufacturing capabilities. It provides a feedstock for vital industries that are the basis of resilience and self-reliance that we need in an unstable and insecure world, including for such things as fertiliser that we rely upon for food security. Gas is the necessary, constant and reliable component of our energy mix that will help take this nation to a cleaner energy future. The industry also plays a broader role in cementing Australia's reputation as a reliable, stable supplier of energy to our strategic allies and trading partners in the region.

APPEA is the peak body representing the oil and gas industry with around 200 full and associate members. Our membership accounts for around 95% of Australia's petroleum production and spans a broad and diverse portfolio of organisations servicing Australia's oil and gas supply chain.

Yours sincerely

s47F(1)

s47F(1)

s47F(1)

Meg O'Neill
Chair
APPEA
Chief Executive Officer
Woodside Energy Limited

Morné Engelbrecht
Vice Chair
APPEA
Chief Executive Officer
Beach Energy Limited

Samantha McCulloch
Chief Executive
APPEA

cc:

The Hon Dr Jim Chalmers MP, Treasurer

The Hon Chris Bowen MP, Minister for Climate Change and Energy

The Hon Madeleine King MP, Minister for Resources and Minister for Northern Australia

s47F(1)

From: s47F(1) @shell.com
Sent: Wednesday, 4 October 2023 4:58 PM
To: s47F(1)
Subject: Hello! And Environment Regs

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s47F(1)

I hope you're well! Great to bump into you earlier this year at DISR.

I was hoping to check in with you to get an update on the work on the environment regulations review- primarily on the timing /process going forward. Apologies if you're not the right contact on this one, there have been so many changes at DISR I'm still getting my head around it!

If you have some time in the next day or two for a quick call or even if you wanted to respond via email with the timing that would also be fine!

If you're in Canberra again soon it would be great to catch up for a coffee!

Cheers
s47F(1)



s47F(1)

Policy and Advocacy Advisor

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Connect with us:



s47F(1)

From: s47F(1)
Sent: Monday, 18 September 2023 4:00 PM
To: Laucher, Norelle; s47F(1)
Cc: s33
Subject: s33 · Independent Environment Report
Attachments: s33
s33

CAUTION – External Email: This email originated from outside the department. Make sure you trust this sender before opening any links or attachments. If you think this is an attempt at Phishing, please report by clicking the **Report Phishing** button above.

Dear all

Thank you for your time on Friday to discuss the oil spill modelling guidelines and the impact on areas impacted.

As discussed, to further support s33 legal position, we have arranged for a technical expert to review and opine on NOPSEMA's oil spill guidelines and to demonstrate that it is not appropriate to apply these guidelines for the purposes of EP consultation. The conclusions of the technical expert have been received and the **attached** report marries with s33 legal position.

Also **attached** is an email setting out the reasons that the application of the entire appeal decision is relevant to understand consultation in accordance with the Regulations.

Summary:

In summary, the report concludes:

- SIMAP oil spill model already contains several routinely applied conservative assumptions within its calculation algorithms. The s33 technical note demonstrates that these existing conservatisms, combined with the oil spill thresholds defined in the NOPSEMA Environment Bulletin (April 2019), results in the generation of large/overly conservative EMBA boundaries.
- For illustrative purposes, if reasonable scientifically robust thresholds were applied, potential differences in EMBA outer boundaries which could occur can be seen in Figure 1 vs Figure 2 below.

Put simply, the conclusions of the technical expert are analogous to the size of the area for consultation reducing from the area covered by the egg white in a fried egg, to the size of the yolk.

Egg
White

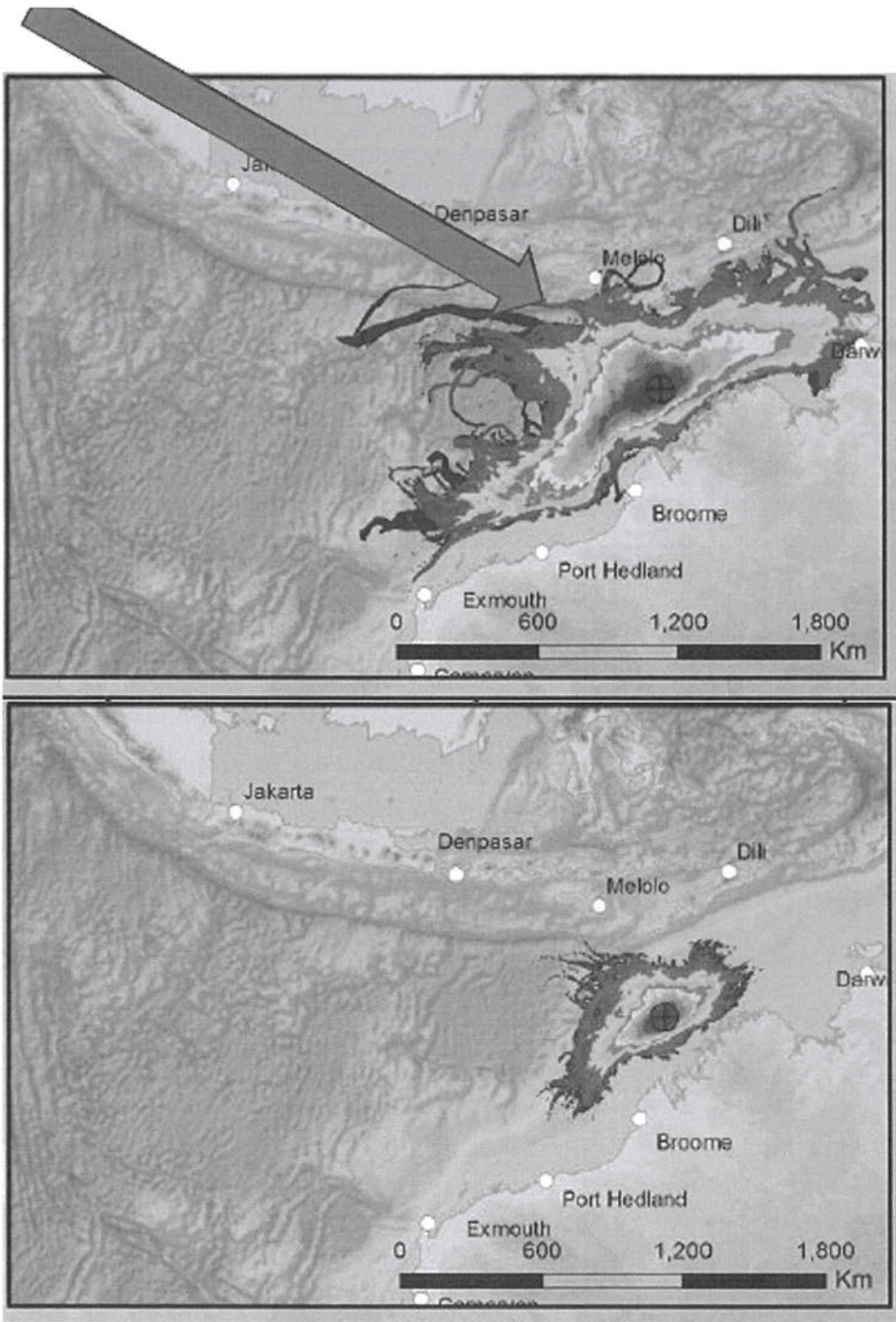


Figure 1: Entrained Oil 10ppb, instantaneous exposures. Figure 2: Dissolve oil 10ppb, instantaneous exposures. (red ring is conceptual EMBA with dissolved oil time-weighted exposures).

Figure 1 – shows all entrained oil. Note, ‘aged-entrained oil’ has lost its dissolved/toxic components. So, the very large green and blue areas, are just areas of exposure to lower/very low toxicity oil droplets, with no impact on marine life, and virtually undetectable, even with rigorous scientific studies/water sampling programs.

Figure 2 - Red ring shows where it’s toxic, and where the time-weighted exposure (long enough duration for exposure), will have caused an impact on marine life. Lighter blue in Figure two shows ‘toxic’ area, but the duration of exposure means no harm will have occurred.

Detailed Summary:

We have also provided a more detailed summary of the report by using the below thresholds as examples.

- **10 parts per billion (ppb) entrained oil threshold**
- NOPSEMA selected 10ppb as their low oil spill impact value/threshold. This is the lowest published threshold value at which an oil spill impact has ever been discovered to occur, from available/published scientific literature. This value was reported from a time-weighted (e.g. 48-96 hour exposure test), of the most sensitive marine species, exposed to the most toxic dissolved oil mixture (**not entrained oil**).

- The use of 10ppb as an 'entrained oil / instantaneous exposure threshold', instead of a 'dissolved oil / time-weighted exposure', is resulting in the largest conservative impact to model outputs.
 - If NOSPEMA no longer required the use of instantaneous threshold measures (instantaneous threshold usage is defined on page 7 of NOPSEMA 2019 Guideline), and instead permitted the scientifically based use of time-weighted exposures in the modelling of entrained/dissolved oil, this will result in significant reductions in EMBA surface areas, up to as much as 80% reduction.
 - Refer Figure 1 (below) – this shows EMBA boundary, entrained oil 10ppb, instantaneous
 - Refer Figure 2 (below) – this shows EMBA boundary, dissolved oil 10ppb, instantaneous.
 - For illustrative/conceptual purposes only, using a dissolved oil time-weighted exposures, a revised EMBA could conceivably only include the red/yellow and possibly green zones (refer Figure 2).
- **10grams / m2 shoreline contact threshold**
 - Many model conservative assumptions over-predict entrained oil concentrations at larger distances than would occur in reality. These include dispersion/spreading rates, entrainment rates and biological degradation rates.
 - Many model conservative assumptions and factors also result in reporting of shoreline exposures above the 10g/m2 shoreline contact threshold, at higher levels than would be expected to be detected/observed in reality. These factors include simplification/over-calculation of 'oil patch' accumulation on shore, grid-cells simplifying coastline contours, no consideration of 'wetting/drying' due to tidal cycles or intertidal zone width, and reporting on any contact above threshold at an 'instantaneous' / single 15-minute time-step.
 - Due to the above, a shoreline contact location driving the EMBA outer boundary could be based on a 0.3% probability of oil above the 10g/m2 threshold for as little as 15 minutes.
 - In the case of condensate spills in particular, the over-calculation of entrained oil concentrations over large distances, combined with the shoreline calculation factors and conservative assumptions, are likely resulting in model errors, which generate shoreline contacts above the 10 g/m² threshold, far away from locations where more contiguous/persistent surface slicks are predicted to occur.

Happy to discuss further if required.

Kind regards

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s33

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s33

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Response to s33 questions on Oil Spill Modelling

The following technical guidance has been prepared by me, s47F(1), as a subject matter expert in oil spill modelling as applied to environmental management of oil field operations within the offshore waters of Australia. The details provided constitute my opinions based on specialised knowledge developed through my education, training, study, and experience, including working experience carrying out oil spill modelling for risk assessment and response to real spill incidents over 26 years.

This report has been compiled in response to a request by s33 to provide answers to the following questions:

1.0 Base Scope

Question	Answer
a) Describe generally the purpose of oil spill modelling.	See addendum, Section 1.0.
b) Develop a report which describes the model conservatism, and how the conservatisms affect model outputs and results, as related to the thresholds presented in (c) and (d) below.	See addendum, Section 2.0 and details below.
c) 10 ppb entrained oil threshold:	
(i) Can you confirm that the 10 ppb entrained threshold, when evaluated through the model, is based on ‘instantaneous exposure’, when the 10 ppb threshold is actually derived from dissolved oil exposure over a time-weighted average?	<p>Yes.</p> <p>The model calculations are analysed for distributions of oil mass in different states (floating, entrained, dissolved, stranded, evaporated) at each model time step.</p> <p>Typically, 15-minute time steps (or less) are used to maximise accuracy of the weathering and transport calculations.</p> <p>Consequently, entrained oil >10 ppb (parts per billion) calculated for durations as short as 15 minutes during any replicate simulation would flag a location as ‘affected’.</p> <p>This flag would only need to occur during 1 of 300 simulations (=0.3% probability of occurrence) for that location to be enclosed by a polygon defining the</p>

	<p>Environment that May Be Affected (EMBA) as defined in the NOPSEMA guideline (2019).</p> <p>A 10 ppb entrained threshold is <u>not</u> based on evidence that 10 ppb of entrained oil droplets (alone) is harmful for either short term (e.g., 15 minutes or for any longer duration (e.g., 48-96 hrs).</p> <p>The NOPSEMA guideline has applied the same threshold for both dissolved and entrained hydrocarbon concentrations as instantaneous exposures. The dissolved threshold concentration was calculated by toxicity studies applying long-term exposures (48-96 hrs of exposure) to the components of oil that can dissolve into water from oil mixtures and no correction for shorter exposure durations has been applied in the NOPSEMA guidelines (see below; part ii).</p> <p>At the outer bounds of the EMBA calculated for a blowout simulation spanning 70 or more days, entrained oil would be present as widely dispersed and insoluble droplets with small diameter (10-50 μm). No insoluble compounds will remain to dissolve into the water to trigger the toxic effects demonstrated by toxicity testing on marine organisms.</p> <p>Direct contact with droplets or consumption of droplets may have influence but risks of influence would depend upon encounter rates, which would depend on the concentration of droplets and the duration that they are present.</p> <p>As an indication of the meaning of the 10 ppb concentration threshold that the NOPSEMA guidelines recommend for entrained oil, this would represent one insoluble droplet suspended in 40,000 L of water for a droplet of 25 μm diameter. It would be necessary to have one million droplets of this size to form a standard drop of oil from an oil dropper (0.05 ml).</p> <p>Consequently, the potential for direct contact by marine biota with a droplet at this threshold concentration when triggered by durations as short as 15 minutes is highly conservative for any consequence through direct contact with droplets.</p>
<p>(ii) Can you describe how the use of instantaneous thresholds in the model may affect the model outputs/geographical areas exposed above threshold?</p>	<p>Instantaneous thresholds have a very large influence upon the geographic extent that is mapped as the EMBA, an influence larger than all other conservative measures applied.</p> <p>Hydrocarbons impose a narcotic effect on organisms through absorption of soluble hydrocarbons from water into their tissue, and it takes longer than 15 minutes for</p>

	<p>harmful soluble compounds to accumulate to levels that impose effect when the concentration of harmful, soluble, hydrocarbons in the water is higher than 10 ppb.</p> <p>Species vary by sensitivity and different oils vary in terms of the toxic components present.</p> <p>The lowest toxic threshold for soluble hydrocarbons (~10 ppb) has been derived as a generic trigger value for potential sublethal influence from a large body of laboratory toxicity testing where exposure has been maintained for 48-96 hrs to ensure saturation of body tissues. A value of ~10 ppb is the lowest value reported for the most sensitive marine species using the water solutions generated from the most toxic oil mixtures.</p> <p>Exponentially higher concentrations are required to achieve equivalent effects over shorter durations. At least 100 times higher concentrations would remain conservative for durations of <1 hr.</p> <p>Instantaneous thresholds treat all areas exposed for a time as short as 15 minutes as if they were exposed constantly for 2 to 4 days (following evidence from toxicity studies).</p> <p>This is very conservative, and reliance on the extent of the EMBA alone obscures information that would be available to show those locations that may be more at risk, such as those locations where longer exposures may occur.</p> <p>Further clarification can be provided.</p>
<p>(iii) Can you comment on how the probability maps/contours generated by the model using instantaneous oil exposure thresholds would be affected, compared to what would occur using time-weighted exposure thresholds?</p>	<p>Comparisons of model calculations for areas that might experience instantaneous exposures (e.g., >10 ppb of entrained oil for 15 minutes) versus time-weighted exposures (e.g., >10 ppb on average over 24, 48 or 96 hours) indicates that the difference depends on the scenario, oil type and component (floating, entrained, dissolved).</p> <p>The outer extent of the EMBA may be reduced to as small as 20% of the surface area (i.e., the surface area enclosed by the EMBA may be reduced by up to 80%) when based on time-weighted exposures.</p> <p>The shape of the EMBA will also typically change to highlight locations where environmental forcing is more likely to direct higher concentrations of spilled material repeatedly or to retain spilled material for longer during a long duration release (e.g., a blowout) – detail that should be relevant to risk assessment, planning and consultation purposes.</p>

	<p>Allowing for as little as 2 subsequent time steps or for 2 records of exceedance at any time during any spill simulation, will result in marked reduction of the geographic area and alter the shape calculated for the EMBA, showing that large parts of the existing EMBA calculations can be due to single, 15-minute, records.</p> <p>Further clarification can be provided.</p>
<p>c) 10 g/m² shoreline contact threshold:</p>	
<p>(i) Can you describe how the model calculates oil accumulation volumes on shorelines, in consideration of the modelled shoreline grid-cell/lineal shoreline lengths vs actual/realistic shoreline lengths and the effect this may have on volumes of oil ashore calculated by the model?</p>	<p>Accumulation of oil onto shorelines is calculated as the mass of oil per unit of shoreline area.</p> <p>The coastline at mean sea level is subdivided into fixed, rectangular, grid cells of a defined area described by fixed length and width.</p> <p>For example:</p> <ul style="list-style-type: none"> • 1 km long x 10 m wide (10,000 m² area per cell) for blowouts. • 400 m long x 10 m wide (4,000 m² area per cell) for diesel spills. <p>Owing to the grid scale applied, the coastline shape must be simplified in areas of small-scale complexity.</p> <p>Very complex and convoluted shorelines will be represented by a smaller area than reality, adding conservatism by lowering the area used when calculating the mass of oil per unit area.</p> <p>The more complex the coastline the larger the degree of conservatism.</p> <p>If the model calculates that any part of a patch of floating oil contacts any part of a coastline cell, the total mass of oil in that patch is transferred to the coastline cell as a conservative calculation for oil stranding.</p> <p>Any subsequent oil patches that contact that coastline cell will add to the tally in that coastline cell over time.</p> <p>The maximum possible load at any time will be capped at the carrying capacity set for shoreline cells (40 m³ over 10,000 m² for low viscosity oils (condensates and diesel, etc.).</p> <p>Any excess oil will be re-floated and may then accumulate on other coastline cells.</p> <p>Evaporation and degradation are calculated for stranded oil to reduce the tally of oil in a coastline cell over time.</p>

	<p>When all simulations are complete, the highest mass recorded at any time due to inputs versus losses is found for each coastline cell in each simulation.</p> <p>The highest mass from any simulation is divided by the shoreline area of the cell to determine the peak concentration (grams of oil/area in m²) as the most conservative calculation for the amount of oil that might be present, for clean-up and other considerations.</p> <p>The peak concentration calculated for each shoreline cell among all replicate simulations is compared to thresholds of relevance.</p> <p>Any shoreline cell with peak mass per area > minimum threshold (e.g., 10 g/m²) during any replicate simulation will be included in the EMBA polygon.</p> <p>Note that:</p> <ol style="list-style-type: none"> 1. The peak concentration that is calculated will be higher if the surface area available for accumulation is under-represented in the model compared to reality. 2. The peak concentration that is calculated may be, and typically is, higher than the concentration that would be calculated at the end of the simulation, after further weathering is allowed for. 3. No differential is made between oil on the surface and oil that has entered the substrate. <p>Further clarification can be provided.</p>
<p>(ii) Can you describe if the model includes consideration of tidal movements or wetting and drying of intertidal areas, and how this may affect modelled oil concentration outputs, vs what might occur in reality?</p>	<p>The model does not account for wetting and drying of the intertidal zone.</p> <p>Both the coastline position and water level are treated as fixed, and calculations assume a fixed average width of the shoreline interface (10 m wide) is always available for accumulation.</p> <p>One outcome at a very local scale is that the model cannot differentiate between the happenstance of oil arriving when the shoreline extends further seaward (at lower tide, exposing a wider zone) or when it might have shrunk back to a narrower zone (at higher tide).</p> <p>Although the intertidal width will vary over time, in reality, and oil might be spread over varying area, the area allowance is assumed fixed to an average of 10 m wide when calculating the mass accumulated per area.</p> <p>In reality, concentrations of oil would likely vary with the tide in areas with very large tidal ranges and low slope,</p>

	<p>and we have applied a fixed width as an assumed average.</p> <p>One conservatism is that shorelines are assumed to be “sticky” – binding the oil to the shorelines with no re-floating due to subsequent tidal flooding.</p> <p>This assumes oil accumulations would migrate up and down, occupying the same width of the shoreline as the tide varied.</p> <p>The exception is if the carrying capacity of the shoreline is exceeded. For condensates and diesel this would only be allowed in the model if the thickness exceeded 4 mm, allowing for high accumulation capacity (e.g., 32 tons per shoreline cell for a 1 km long x 10 m wide shoreline if the density averaged 800 kg/m³).</p> <p>Noting that the model domain must cover areas of hundreds of thousands of km² for a blowout scenario, the fixed coastline assumptions represent necessary simplifications requiring a conservative approach.</p> <p>Further clarification can be provided.</p>
<p>(iii) Can you confirm if the model continues to calculate oil weathering of stranded oil on a shoreline, specifically evaporation and melting point?</p>	<p>Yes.</p> <p>As stated above (part i), oil weathering continues to apply to oil classed as stranded.</p> <p>Loss of oil mass from coastline cells can occur through three processes:</p> <ol style="list-style-type: none"> 1. Evaporation. 2. Degradation (representing microbial action and photo-oxidation). 3. Re-floating (if the carrying capacity of the coastline cell is exceeded). <p>The composition of the oil when freshly released at source is represented by the proportion of the whole oil contributed by groups of hydrocarbons, varying by volatility.</p> <p>Composition change is calculated over time through evaporation and dissolution when the oil is floating, and the composition of oil patches is known by the model at the time of stranding.</p> <p>Calculations for variable rates of evaporation, by sub-components, continues for stranded oil until only the non-evaporating residues (boiling point >380 °C) remain.</p> <p>Calculations for evaporation rates are based on wind speed and average ambient temperature (30 °C for the s33 studies), not elevated temperatures that might occur during daytime on heat-retaining surfaces.</p>

	<p>Calculations for evaporation are, therefore, conservative if evaporating components remain in the stranded oil.</p> <p>If only residues strand, no loss of oil through evaporation will be calculated on shorelines.</p> <p>Degradation is applied to the total mass (regardless of composition) at a fixed rate.</p> <p>A conservative rate of 3% of the mass per day is applied. This rate has been derived from published tests on more complex oil types than diesel or condensate and is considered conservative for condensates in lieu of further research to confirm rates of degradation of both oil types.</p> <p>The model does not calculate for melting point to decide whether the oil is on the substrate (e.g., as solid wax) or in the substrate (e.g., as a melted wax).</p>
<p>(iv) Can you describe if the model takes into consideration the effect of exposed intertidal shoreline temperature (i.e., sand/rock temperature) and the effect this may have on stranded oil including effect on oil melting point and subsequent behaviour of the stranded oil?</p>	<p>Degradation rates do not account for substrate temperature.</p> <p>This will be conservative in settings with high average substrate temperatures because degradation rates do increase at higher temperatures.</p> <p>The same ambient temperature and prevailing wind speeds are used for both floating and stranded oil for calculating evaporation rates.</p> <p>This will be conservative if the oil arrives with volatile content and the real temperatures are higher than assumed (30°C for the s33 study locations) on average.</p> <p>This would not be conservative if only residues arrive at coastline cells.</p> <p>No calculations are made by the model for the physical state (solid/liquid) of hydrocarbons, or of uptake by sediments. Such considerations would need to be made outside of the model calculations.</p> <p>Further clarification can be provided.</p>

1.1 Supplementary Scope

<p>(a) Can you confirm if there are any other factors which may affect conservatisms within the model?</p>	<p>See addendum.</p>
<p>(b) if Yes, can you please explain these additional factors.</p>	<p>See addendum.</p>

Addendum

1.0 (a) Describe generally the purpose of oil spill modelling.

Modelling of oil fate and transport is useful, and has been applied to multiple purposes:

- Calculating risks of exposure to facilities, personnel, interests of other parties and environmental resources if a spill scenario were to eventuate.
- Guiding preparations for response, including identifying those resources that may need to be defended and what responses may be practical given factors such as the nature of the place at risk and the evolution through weathering of the oil type(s) that might be spilled.
- Forecasting the drift and behaviour of oil slicks ahead of real time to guide response to real spills.
- Forecasting the efficacy of alternative response measures.
- Guidance of environmental monitoring efforts to sense influence or impact.
- Post-spill assessment to inform and quantify social, environmental, or commercial impacts.

The first general application is the basis of EMBA calculations at present, but with the results simplified to calculating the area enclosing all locations where greater than low threshold concentrations might occur instantaneously at very low probabilities.

Other calculations from modelling are available and may be applied as contextual measures. These include:

- Mapping locations at higher probability of contact > instantaneous thresholds.
- Mapping locations at risk of longer durations of contact > instantaneous thresholds.
- Mapping locations at higher probability of contact at > time-integrated thresholds.
- Mapping locations based on potential concentrations (maximums and statistical distributions such as mean and higher percentiles).

1.0 (b) Develop a report which describes the model conservatism, and how the conservatisms affect model outputs and results, as related to the thresholds presented in (c) and (d) below.

General background

In general, oil spill models are a collection of interacting formulae and calculations that have been compiled to best represent current knowledge of processes that affect oil when released into the marine environment.

These processes are complex and interacting, requiring organised formulation to avoid errors and bias.

The formulations are numerical tools that allow comparative testing for different outcomes depending upon the scenario and prevailing conditions, subject to errors and uncertainties in both the inputs and the formulae.

Key processes have been studied to varying degrees over several decades through empirical studies, observations, and laboratory experiments. Some processes and their dependencies are well understood, while others have larger uncertainties and are the subject of ongoing testing and development.

The model formulations allow management of uncertainties through sensitivity allowances and/or conservative calculations or inputs (i.e., arrangements that are more likely to overstate and not understate risks).

Potential sources of conservatism

As a general principle, the ongoing calculation of concentrations over a large number of sequential time steps (e.g., 7,680 contiguous time-steps in an 80-day blowout simulation), with calculations at each time step dependent upon a previous calculation of state, can be expected to lead to magnification of any model errors at the outer distances and durations.

The current NOPSEMA guidance for calculating the EMBA has changed the focus of modelling assessment efforts from identifying locations that are most at risk (typically closer to the source and at risk of contact over shorter elapsed times) to map out only an outer bound of possibilities. One consequence of this is that the EMBA definition is now highly dependent on model capabilities, uncertainties, and compounding of errors in calculations for defining when concentrations will fall below very low concentrations.

The modelling software that I will detail to address model calculations and conservatism is the Spill Impact Model Application Package (SIMAP) that has been applied to most oil spill risk assessments in Australia, including those carried out for s33, but considerations will be common to other oil spill models of similar capability.

SIMAP is three-dimensional and is structured as a series of interacting algorithms that consider all known key processes that may affect the transport and weathering of hydrocarbon mixtures:

- Buoyancy (upward vertical transport from subsea).
- Initial spreading due to gravity and surface tension.
- Horizontal transport due to wind and current.
- Spreading (transport in the vertical and horizontal) due to dispersive forces.
- Wave-induced entrainment into the water column (as oil droplets).
- Dissolution (of soluble hydrocarbons) into the water column.
- Vertical dispersion of dissolved hydrocarbons (vertical spreading due to dispersive forces).
- Evaporation to the atmosphere.
- Emulsification (uptake of water into floating oil films).
- Change in viscosity due to change in composition and emulsification.
- Sedimentation (through binding with suspended sediment).
- Shoreline stranding – shoreline specific.
- Re-floating from shorelines (if capacity exceeded).
- Degradation (to component molecules).

The model uses oil composition and physical properties as input, and calculates changes in the mass distribution of the spilled oil over time among six states in response to the release scenario (e.g., onto the water, from subsea blowouts, etc.) and a sequence of environmental conditions:

1. Floating as a film on the water surface.

2. Entrained (at some depth) as oil droplets suspended in the water column.
3. Dissolved (at some depth) in the water column from films or suspended droplets.
4. Evaporated (to the atmosphere).
5. Stranded on a shoreline.
6. Degraded to simpler chemical components (hydrogen, carbons, etc.).

The NOPSEMA guidelines require that the worst-case (or worst plausible case) spill scenario is modelled for a given oilfield operation. For drilling operations into reservoirs where gas/condensates are targeted, that will involve a long-term (>70-day) release of gas and condensate at the highest rate possible through a fully open reservoir.

This scenario will generate the highest potential initial concentrations, both in reality and in the model, and is a conservative starting point.

Key considerations for conservatism in the modelling are calculations for initial concentrations, the initial distribution of oil mass among the states, and processes that affect reductions in the concentrations of oil in each state over time.

Calculations for gas-condensate releases, more so than for heavier oil types, are very sensitive to model calculations of entrainment rates because these oil mixtures have both very low viscosity (hence will be susceptible to entrainment) and are mostly composed of volatile hydrocarbons (hence will be susceptible to evaporation, if exposed to the atmosphere). Entrainment and dissolution are competing fate pathways to floating and evaporation.

Over-prediction of entrainment rates will reduce the evaporation rate that is calculated (a general loss term for calculation of oil mass that would otherwise be on or in the water, or on shorelines) and leads to higher concentrations of entrained oil being calculated further from the source.

Entrainment is calculated for two processes by the model:

- As droplets released subsea (for blowouts).
- Generated by waves breaking up slicks into droplets and mixing the droplets into the surface layer, or keeping droplets that were entrained by the process above mixed into that layer.

Considerable care is required to calculate the initial droplet-size distributions accurately for subsea blowout scenarios involving highly volatile condensates (as opposed to less volatile mixtures) due to the large influence of droplet-size calculations upon entrainment rates versus evaporation rates. Calculations for oil droplet sizes have been an active area of model development and the modelling currently incorporates the most recent calculations from authoritative sources (SINTEF, TAMOC, etc.) but understatement of droplet sizes remains a risk for overstatement of entrainment rates because most research has involved heavier oil types.

Calculations for entrainment due to wave action in the SIMAP model were updated ~5 years ago to new formulations following a large volume of research conducted for the Deepwater Horizon blowout. The updated formulations increased the sensitivity to wave action, lowering thresholds for wind speed required to generate or maintain entrainment for low viscosity oils.

Sensitivity testing suggests that the allowances may be overly conservative for entrainment rates when applied to highly volatile condensates. In turn, calculations

would likely be conservative for dissolution rates and dissolved hydrocarbon concentrations for these products because faster dissolution is calculated for entrained oil than for slicks.

The model will calculate reduction of oil concentrations for surface and subsurface oil concentrations (entrained and dissolved) due to dispersion, representing the spreading and thinning of patches and plumes over time due to the mixing forces in the ocean.

Contemporary calculations for dispersion are typically set for moderate sea conditions for the scenario setting and not for more energetic conditions that can occur. On average, it is expected that this approach will result in maintenance of higher concentrations over longer distances than might occur in reality. The level of conservatism would vary depending on the frequency of occurrence of windy conditions that would trigger breaking sea waves.

A further level of conservatism for calculation of entrainment (increasing dissolution) versus floating (increasing evaporation) for surface releases of highly volatile condensates is the model time step. Highly volatile condensates with a low residue content will flash off rapidly, in reality, when spread thinly onto the water surface. However, calculation at 15-minute steps, which is a practical rate for long term blowout modelling, may underestimate the evaporation rate that is calculated for such condensates and overestimate the calculation for maintenance of entrained oil concentrations above low thresholds. Evaporation rates are calculated to occur at a slower rate for soluble hydrocarbons that are dissolved in surface-waters than at the surface, which could lead to overstatement of dissolved hydrocarbon concentrations exceeding low thresholds.

Some loss of mass is calculated for entrained oil over time due to dissolution of the soluble compounds. These compounds will typically represent a small proportion of the mass of an oil initially (typically 6-12% for condensates) so there would be only a relatively small influence on reduction of entrained oil concentrations.

It is also noteworthy that the model can calculate when entrained oil droplets have lost all soluble components. However, the NOPSEMA guidelines are applied equally to entrained oil that has remaining soluble components and those that have migrated long distances over long time periods and would have weathered to lose all soluble components. Because the EMBA line defines the widest boundaries, it will be the concentrations of weathered entrained oil that are tested against the NOPSEMA guideline threshold.

Degradation rates are applied to allow for reduction of oil concentrations over time. These rates are derived from literature accounts, and different rates are applied to floating, entrained, dissolved, and stranded oil. All rates are assumed to be conservative for condensates, in particular, because they tend to be composed of simpler hydrocarbons than those oils used to measure degradation rates, which could lead to concentrations being maintained for longer distances and durations than might occur, in reality, in warm tropical and sub-tropical settings. The rate currently applied to the insoluble components of entrained oil is a constant rate of ~8% of the mass per day.

Collectively for these uncertainties, calculations for entrainment mass concentrations and dissolved hydrocarbons will tend to be increasingly conservative over many sequential calculations.

The extremely low threshold set by the NOPSEMA guidelines for entrained oil is interacting with the conservative allowances for entrained concentrations for gas

condensates to dominate calculations for the EMBA for both blowout and surface release scenarios for this oil type. In other words, the extent of the entrained oil contour applied to the EMBA calculation is always larger than for any other component.

A further, potential, consequence of maintaining entrained concentrations for longer, in combination with the low threshold set by the NOPSEMA guidelines for oil contact with shorelines (as opposed to accumulation), is that model calculations for re-floating of oil from an entrained state become more critical. The model only needs to calculate that re-floating has led to a small patch of oil at the surface that is equal to or marginally higher than the low threshold (10 g/m² on the surface) from an overstated entrained oil concentration to flag a once-off calculation for shoreline exposure at a location that can be isolated by a long distance from the extent calculated for surface slicks to decrease below threshold concentrations when remaining at surface. One such occurrence among 300 simulations will flag a shoreline location for inclusion in the EMBA at a further distance than is indicated for the persistence of surface slicks above the low threshold. Although entrainment and re-floating are real processes that can occur, it is plausible that model errors are responsible for triggering the flagging of some stranding events judged by the low instantaneous threshold at the outer bounds of the EMBA.

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From: s47F(1)
Sent: Friday, 15 September 2023 9:37 AM
To: s47F(1)
Cc: s47F(1)
Subject: [EXTERNAL] s33 - Further question

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Hi s47F(

Further to our discussion yesterday, s47F(1) and I have considered the further question you put to me.

The question was: "Are the reasons given by Lee J in the Full Court's decision in *Tipakalippa* binding and can they be relied upon when construing the Regulations?"

In short order, our answer is follows.

1. It is permissible to have regard to Lee J's reasons concerning the construction of the Regulations.
2. While Lee J wrote separately, the decision of the Full Court was unanimous.
3. While Lee J wrote separately, his Honour was not in dissent.
4. Lee J's reasons concerning the proper construction of the Regulations are binding insofar as the same reasoning is contained in the joint judgment.

Please let us know if you have any further questions or if you would like to discuss our answer.

Kind regards
s47F(1)

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