



DOC16/380526, File No. EF13/3405

Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Patrick Copas

patrick.copas@planning.nsw.gov.au

Dear Mr Copas

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

ORICA KOORAGANG – ARSENIC REMEDIATION PROJECT (SSD_7831)

I refer to your email to the Environment Protection Authority (EPA) received on 26 July 2016 requesting the EPA input for the preparation of Secretary's Environmental Assessment Requirements (SEARs) in respect of the above proposal.

The site is impacted by arsenic in soil and groundwater, and the EPA has declared the site as significantly contaminated land under the *Contaminated Land Management Act 1997* due to the offsite migration of arsenic impacted groundwater. Management of the contamination is currently regulated by the EPA by way of a Management Order. As required under the Management Order, a number of remediation options have been considered by the proponent. The final selected remediation option is based on the on-site isolation and containment of residual arsenic impacted soils, and is intended to prevent the further offsite migration of arsenic impacts in groundwater.

The EPA understands that the proposal involves the installation of a cap and containment remediation system to enclose arsenic contaminated soil with a concentration of greater than 40mg/kg, located the north-western portion of the site. The project will involve the installation of a low permeability cut-off wall to a depth of approximately 12 metres below ground level, as well as a low permeability cap.

The EPA has considered the details of the proposal as provided in the application and attached information and has identified the information it requires to be addressed in the Environmental Impact Statement (EIS) to make a reliable appraisal of the impacts of the proposal. The main issues of interest to the EPA are:

- contaminated site requirements;
- impacts on water quality and site water management;
- impacts on air quality;
- potential noise impacts due to construction; and
- waste management and disposal.

Attachment A presents a more detailed explanation of EPA's main issues regarding the proposed development. Please note that the issuing of SEARs is a statutory requirement for EPA and should not be construed as support or endorsement of the proposed development.

Attachment B provides links to numerous references materials that may assist the proponent to prepare an adequate EIS.

The proponent should be aware that any commitments made in the EIS may be formalised into EPA's suggested approval conditions for the proposal and the Environment Protection Licence. Accordingly, pollution control measures should not be proposed if they are impractical, unrealistic, or beyond the financial viability of the development.

The EPA requests that the applicant provide **one printed copy and one electronic copy** of the EIS and any supporting or background reports when lodging the application with the EPA. These documents should be lodged with the EPA's Regional Manager – Hunter at PO Box 488G, Newcastle NSW 2300.

If you require any further information regarding this matter please contact Hamish Rutherford on (02) 4908 6824.

Yours sincerely

 12/8/2016.

REBECCA SCRIVENER
Acting Head Regional Operations Unit - Hunter
Environment Protection Authority

Encl.

Contact officer: HAMISH RUTHERFORD
(02) 4908 6824

ATTACHMENT A

ENVIRONMENT PROTECTION AUTHORITY- REQUEST FOR ENVIRONMENTAL ASSESSMENT REQUIREMENTS FOR A STATE SIGNIFICANT DEVELOPMENT

PROPOSED ARSENIC REMEDIATION PROJECT, ORICA KOORAGANG (SSD_7831)

GENERAL INFORMATION

The following information must be provided in the Environmental Impact Statement (EIS) to enable EPA to accurately assess the environmental implications of the proposed activity. The EIS must adequately describe the development proposal and the existing environment including air, noise, waters, soils, chemicals and waste.

THE PROPOSAL

The objectives of the proposal should be clearly stated and refer to:

- The size and type of the operation,
- The nature of the processes and the products, by-products and wastes produced;
- The use or disposal of products or wastes;
- The anticipated level of performance in meeting required environmental standards and cleaner production principles;
- The staging and timing of the proposal; and
- The proposal's relationship to any other industry or facility.

THE PREMISES

The EIS will need to fully identify all of the processes and activities intended for the site and during the life of the project. This will include details of:

- a site plan prepared by a registered surveyor clearly showing the boundaries of any proposed premises that will be subject to an Environment Protection Licence (EPL) and the proposed locations of any discharge points covered by an EPL;
- ownership and/or land use details of any premises and land likely to be affected by the proposed development including lot and DP numbers;
- maps and/or aerial photographs, showing:
 - The location of the proposed facility and details of the surrounding environment;
 - The proposed layout of the site;
 - All equipment proposed for use at the site;
 - Appropriate landuse zoning;
 - Topography, vegetation, location of utilities and services;
 - The location of residences and properties that may be impacted by the operation;
 - The location of any environmentally sensitive areas such as conservation areas, wetlands, creeks or streams, watercourses and stormwater systems;
 - Surface water management systems;
 - Chemicals, including fuel, used on the site and proposed methods for their transportation, storage, use and emergency management;
 - Waste generation and disposal;
 - Methods to mitigate any expected environmental impacts of the development;

CONTAMINATED LAND MANAGEMENT

The remediation project must comply with the existing Management Order (#20131407) issued under the *Contaminated Land Management Act 1997*. The proposed works are also to be carried out in accordance with the *Remediation Action Plan – Orica Kooragang Island: Arsenic Management Order* prepared by Golder Associates (8 July, 2008), subject to endorsement by the EPA.

The EIS should include an assessment of the contaminated site, as well as details on how the site contamination will be remediated and/or managed so that further offsite migration of arsenic in groundwater originating from the site is prevented. This should include details on the proposed mechanisms to capture the long-term management and awareness of the arsenic-impacted soils that are proposed to remain on site beneath the capping.

The assessment can be based on existing data available to the proponent, however, should further environmental data be collected, investigation works are to be conducted in accordance with the guidelines made or approved under section 105 of the *Contaminated Land Management Act 1997* including:

- *Guidelines for Consultants Reporting on Contaminated Sites* (EPA, 2011),
- *Guidelines for the NSW Site Auditor Scheme - 2nd edition* (DEC, 2006),
- *Sampling Design Guidelines* (EPA, 1995), and
- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (April 2013).

Independent review of the proposal and verification of the works program by a suitably qualified and technically competent third-party reviewer should be a requirement for the works. The reviewer will be required to verify the adequacy and appropriateness of the proposed remedial strategy, and the effectiveness of the remedial works in preventing the migration of contamination from the site.

WATER MANAGEMENT

The EIS must provide sufficient information to demonstrate that the proposed development can be operated whilst complying with the *Protection of the Environment Operations Act 1997*, in particular, the protection of water quality during construction and operation of the facility.

The methodology, data and assumptions used to design any pollution control works and assess the potential impact of the proposal on water quality (ground and surface waters), must be fully documented and justified.

The EIS must include an adequacy assessment of stormwater controls. This assessment must determine sediment basins are adequately sized based on relevant guidelines and that discharges to waters from any sediment basins or other treatment systems comply with the requirements of the *Protection of the Environment Operations Act 1997*.

The EIS must identify any fuel or chemical storage areas to be established on the site and describe the measures proposed to minimise the potential for leakage or the migration of pollutants into the soil/waters or from the site.

The EIS should also describe the sewage treatment and effluent management processes used on site including the proposed numbers of occupancy using the premises.

NOISE AND VIBRATION IMPACTS

The EIS must include a noise assessment of the existing environment, potential impacts and proposed noise amelioration measures. The EPA's Interim Construction Noise Guideline deals with the assessment of noise from construction activities and advises on best practice approaches to

minimise noise impacts. It is specifically aimed at managing noise from construction works regulated by the EPA.

AIR QUALITY

The EIS must include an Air Quality Impact Assessment (AQIA). The AQIA must identify and describe in detail all possible sources of air pollution and activities/processes with the potential to cause air pollutants including odours and fugitive dust emissions beyond the boundary of any premises proposed to be licenced by an EPL. This should cover both the construction and operational phases of the development. The AQIA should include cumulative impacts associated with existing developments and any developments having been granted development consent but which have not commenced.

The EIS should demonstrate that the facility will operate within EPA's objectives which are to minimise adverse effects on the amenity of local residents and sensitive land uses and to limit the effects of emissions on local, regional and inter-regional air quality.

The EIS must describe in detail the measures proposed to mitigate the impacts and quantify the extent to which the mitigation measures are likely to be effective in achieving the relevant environmental outcomes.

The AQIA must be prepared in accordance with the EPA's *"Approved Methods and Guidance for the Modelling & Assessment of Air Pollutants in NSW"*. The AQIA must describe the methodology used and any assumptions made to predict the impacts. Air pollutant emission rates, ambient air quality data and meteorological data used in the assessment must be clearly stated and justified.

DANGEROUS GOODS and CHEMICAL TRANSPORT, STORAGE and HANDLING

The EIS must outline all details regarding the transport, handling, storage and use of dangerous goods, chemicals and products, including fuel, both on site and with ancillary activities and describe the measures proposed to minimise the potential for leakage or the migration of pollutants into the air, land or waters from the site.

MONITORING PROGRAMS

The EIS should include a detailed assessment of any noise, air quality, water quality or waste monitoring required during the on-going operation of the facility to ensure that the development achieves a satisfactory level of environmental performance and to demonstrate that any activity licenced by an EPL is carried out in an environmental satisfactory manner. The evaluation should include a detailed description of the monitoring locations, sample analysis methods and the level of reporting proposed.

WASTE FACILITIES

The EIS should include:

1. Details of the layout of any proposed waste facility, the treatment process and the environmental controls at the facility.
2. Details of the quantity and type of liquid and/or non-liquid waste(s) generated, handled, processed or disposed of at the premises. Waste must be classified according to EPA's *Waste Classification Guidelines 2008*.
3. Details of liquid waste and non-liquid waste management at the facility, including:

- the transportation, assessment and handling of waste arriving at or generated at the site;
 - any stockpiling of wastes or recovered materials at the site;
 - any waste processing related to the facility, including reuse, recycling, reprocessing or treatment both on- and off-site;
 - the method for disposing of all wastes or recovered materials at the facility;
 - the emissions arising from the handling, storage, processing and reprocessing of waste at the facility;
 - the proposed controls for managing the environmental impacts of these activities.
4. Details of procedures for the assessment, handling, storage, transport and disposal of all **hazardous waste** used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes.
 5. Details of the quantity, type and specifications for all **output products** proposed to be produced from the facility. The description should include the physical, chemical and biological characteristics (including contaminant concentrations) of those output products as well as relevant accredited standards against which the products would comply. In documenting or describing the composition of output products and/or wastes generated from the proposed facility reference should be made to the relevant EPA *resource recovery exemption* (<http://www.epa.nsw.gov.au/waste/RRecoveryExemptions.htm>) or the *Waste Classification Guidelines 2008* (<http://www.epa.nsw.gov.au/waste/envguidlins/index.htm>).
 6. Details of intended (or potential) end uses for output products from the facility and the relevant product standards which would be used to assess those products against.
 7. Details of the type and quantity of any chemical substances (including hydrocarbon (oils and fuels, explosives etc.) to be used or stored and describe arrangements for their safe use and storage.

GENERAL WASTE

The EIS should:

1. Include a detailed plan for in-situ classification of waste material, including the sampling locations and sampling regime that will be employed to classify the waste, particularly with regards to the identification of contamination hotspots.
2. Identify, characterise and classify all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste.
Note: All waste must be classified in accordance with EPA's *Waste Classification Guidelines*.
3. Identify, characterise and classify all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.
Note: All waste must be classified in accordance with EPA's *Classification Guidelines*.
4. Include a commitment to retaining all sampling and classification results for the life of the project to demonstrate compliance with EPA's *Waste Classification Guidelines*.
5. Provide details of how waste will be handled and managed onsite to minimise pollution, including:
 - a) Stockpile location and management

- Labelling of stockpiles for identification, ensuring that all waste is clearly identified and stockpiled separately from other types of material (especially the separation of any contaminated and non-contaminated waste).
- Proposed height limits for all waste to reduce the potential for dust and odour.
- Procedures for minimising the movement of waste around the site and double handling.
- Measures to minimise leaching from stockpiles into the surrounding environment, such as sediment fencing, geofabric liners etc.

b) Erosion, sediment and leachate control including measures to be implemented to minimise erosion, leachate and sediment mobilisation at the site during works. The EA should show the location of each measure to be implemented. The Proponent should consider measures such as:

- Sediment traps
- Diversion banks
- Sediment fences
- Bunds (earth, hay, mulch)
- Geofabric liners
- Other control measures as appropriate

The Proponent should also provide details of:

- how leachate from stockpiled waste material will be kept separate from stormwater runoff;
- treatment of leachate through a wastewater treatment plant (if applicable); and
- any proposed transport and disposal of leachate off-site.

6. Provide details of how the waste will be handled and managed during transport to a lawful facility. If the waste possesses hazardous characteristics, the Proponent must provide details of how the waste will be treated or immobilised to render it suitable for transport and disposal.
7. Include details of all procedures and protocols to be implemented to ensure that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment.
8. Include a statement demonstrating that the Proponent is aware of EPA's requirements with respect to notification and tracking of waste.
9. Include a statement demonstrating that the Proponent is aware of the relevant legislative requirements for disposal of the waste, including any relevant Resource Recovery Exemptions, as gazetted by EPA from time to time.
10. Outline contingency plans for any event that affects operations at the site that may result in environmental harm, including: excessive stockpiling of waste, volume of leachate generated exceeds the storage capacity available on-site etc.

EPA STATUTORY REQUIREMENTS

The EIS should confirm that the proposed activity is listed in Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) and will therefore require an Environment Protection Licence from EPA.

Please note that this response does not cover biodiversity or Aboriginal cultural heritage issues, which are the responsibility of the Office of Environment and Heritage.

Attachment B – Guidance Material

Title	Web address
<u>Relevant Legislation</u>	
<i>Contaminated Land Management Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+140+1997+cd+0+N
<i>Environmentally Hazardous Chemicals Act 1985</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+14+1985+cd+0+N
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<u>Licensing</u>	
Guide to Licensing	http://www.epa.nsw.gov.au/resources/licensing/160307-licensing-guide.pdf
<u>Air Issues</u>	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2005)	http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf
POEO (Clean Air) Regulation 2010	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+428+2010+cd+0+N
<u>Noise and Vibration</u>	
Interim Construction Noise Guideline (DECC, 2009)	http://www.epa.nsw.gov.au/resources/noise/09265cng.pdf
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.epa.nsw.gov.au/resources/noise/vibrationguide0643.pdf
Industrial Noise Policy	http://www.epa.nsw.gov.au/resources/noise/ind_noise.pdf
Industrial Noise Policy Application Notes	http://www.epa.nsw.gov.au/noise/applicnotesindustnoise.htm
NSW Road Traffic Noise Policy (DECCW, 2011)	http://www.epa.nsw.gov.au/resources/noise/2011236nswroadnoisepolicy.pdf
<u>Waste, Chemicals and Hazardous Materials and Radiation</u>	
Waste	
Environmental Guidelines: Solid Waste Landfills (EPA, 2016)	http://www.epa.nsw.gov.au/resources/waste/solid-waste-landfill-guidelines-160259.pdf
Waste Classification Guidelines	http://www.epa.nsw.gov.au/wasteregulation/classify-guidelines.htm
Resource recovery exemption	http://www.epa.nsw.gov.au/wasteregulation/recovery-exemptions.htm
Chemicals subject to Chemical Control Orders	

Title	Web address
Chemical Control Orders (regulated through the EHC Act)	http://www.epa.nsw.gov.au/pesticides/ccos.htm#five
National Protocol - Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes - July 1994	Available in libraries
National Protocol for Approval/Licensing of Commercial Scale Facilities for the Treatment/Disposal of Schedule X Wastes - July 1994	Available in libraries
<u>Water and Soils</u>	
Acid sulphate soils	
Acid Sulfate Soils Planning Maps	http://canri.nsw.gov.au/download/
Acid Sulfate Soils Manual (Stone et al. 1998)	Manual available for purchase from: http://www.landcom.com.au/whats-new/the-blue-book.aspx Chapters 1 and 2 are on DP&I's Guidelines Register at: Chapter 1 Acid Sulfate Soils Planning Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf Chapter 2 Acid Sulfate Soils Assessment Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	http://www.derm.qld.gov.au/land/ass/pdfs/lmg.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Soils – general	
Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000)	http://www.dnr.nsw.gov.au/care/soil/soil_pubs/pdfs/tech_rep_34_new.pdf
Managing urban stormwater: soils and construction, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008)	Vol 1 - Available for purchase at http://www.landcom.com.au/whats-new/publications-reports/the-blue-book.aspx Vol 2 - http://www.environment.nsw.gov.au/stormwater/publications.htm
Landslide risk management guidelines	http://www.australiangeomechanics.org/resources/downloads/
Site Investigations for Urban Salinity (DLWC, 2002)	http://www.environment.nsw.gov.au/resources/salinity/booklet3siteinvestigationsforurbansalinity.pdf
Local Government Salinity Initiative Booklets	http://www.environment.nsw.gov.au/salinity/solutions/urban.htm
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf

Title	Web address
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf



Department of Primary Industries

OUT16/30040

Ms Emma Barnet
Industry Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Emma.barnet@planning.nsw.gov.au

Dear Ms Barnet

**Orica Remediation Project, Kooragang Island (SSD 7831)
Request for Secretary's Environmental Assessment Requirements (SEARs)**

I refer to your email dated 26 July 2016 to the Department of Primary Industries (DPI) in respect to the above matter. Comment has been sought from relevant divisions of DPI and Department of Industry - Lands. Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

The department has reviewed the request for SEARs and recommends the Environmental Impact Statement (EIS) be required to include:

- Annual volumes of surface water and groundwater proposed to be taken by the activity (including groundwater dewatering, through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.
- Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).
- The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.
- A detailed and consolidated site water balance.
- Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.
- Full technical details and data of all surface and groundwater modelling.
- Proposed surface and groundwater monitoring activities and methodologies.
- Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.
- Consideration of relevant policies and guidelines.

- A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

Yours sincerely

A handwritten signature in black ink that reads "Rebekah Gomez-Fort." The signature is written in a cursive, flowing style.

Rebekah Gomez-Fort
A/Director, Planning Policy & Assessment Advice
12 August 2016



Office of Environment & Heritage

DOC16/371893-1
SSD 7831

Mr Patrick Copas
Student Planner, Industry Assessments
Department of Planning and Environment
patrick.copas@planning.nsw.gov.au

Dear Mr Copas

RE: INPUT INTO SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS FOR ORICA REMEDIATION PROJECT, KOORAGANG ISLAND (SSD 7831)

I refer to your email dated 26 July 2016 inviting the Office of Environment and Heritage (OEH) to provide input into the Secretary's Environmental Assessment Requirements (SEARs) for the proposed Orica Remediation Project (operated by Orica Australia Pty Ltd) State Significant Development (SSD 7831) located on Kooragang Island (Lot 2 and 3 in Deposited Plan 234286), Newcastle. This project is located within the Newcastle local government area.

OEH understands that Orica Australia Pty Ltd (the applicant) proposal will involve the installation of a cap and containment remediation system to enclose arsenic contaminated soil with a concentration of greater than 40mg/kg, located within a small section in the north-western portion of the site. The project will involve the installation of a low permeability cut-off wall to a depth of approximately 12 metres below ground level, as well as a low permeability cap. OEH acknowledges that the proposal is a State Significant Development as it is development for the purpose of remediation of land that is classified as Category 1 remediation works in accordance with a Management Order issued under the *Contaminated Lands Management Act 1997*. Consequently, it meets the criteria outlined within Schedule 1, clause 24(1) of *State Environmental Planning Policy (State and Regional Development) 2011*. The Minister for Planning is the consent authority.

OEH has reviewed the application (and supporting documentation) and has prepared Standard SEARs which are presented in **Attachment A**. Additional flooding comments are provided in **Attachment B**.

The Framework for Biodiversity Assessment was released on 1 October 2014. This project is to be assessed under this policy and must be conducted by a person accredited in accordance with section 142B(1)(c) of the *Threatened Species Conservation Act 1995* (TSC Act), including the provision of a Biodiversity Assessment Report. Given that the Framework for Biodiversity Assessment is a relatively new state wide policy, the consultant is welcome to contact OEH with any questions they may have regarding the methodology.

The proponent will need to ensure that the biodiversity assessment is fully consistent with requirements of the Framework for Biodiversity Assessment. Guidance documents to assist with this process are

provided in **Attachment C**. Please note that a Biodiversity Assessment Report is still a requirement of the FBA even if the site is disturbed.

If you have any further questions in relation to this matter, please contact Steve Lewer, Regional Biodiversity Conservation Officer, on 4927 3158.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'S. Lewer', written in a cursive style.

8 AUG 2016

STEVE LEWER

Acting Senior Team Leader Planning, Hunter Central Coast Region
Regional Operations

Enclosure: Attachments A, B & C

Attachment A – Standard Environmental Assessment Requirements

Biodiversity
1. Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the <u>Framework for Biodiversity Assessment</u> , unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the <i>Threatened Species Conservation Act 1995</i> .
Aboriginal cultural heritage
2. The EIS must identify and describe Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the <i>Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW</i> (DECCW, 2011) and consultation with OEH regional officers.
3. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.
4. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.
Historic heritage
5. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to <i>State and local heritage</i> including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment), d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

Water and soils

6. The EIS must map the following features relevant to water and soils including:
 - a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map).
 - b. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the Framework for Biodiversity Assessment).
 - c. Groundwater.
 - d. Groundwater dependent ecosystems.
 - e. Proposed intake and discharge locations.
7. The EIS must describe background conditions for any water resource likely to be affected by the development, including:
 - a. Existing surface and groundwater.
 - b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.
 - c. Water Quality Objectives (as endorsed by the NSW Government www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters.
 - d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.
8. The EIS must assess the impacts of the development on water quality, including:
 - a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.
 - b. Identification of proposed monitoring of water quality.
9. The EIS must assess the impact of the development on hydrology, including:
 - a. Water balance including quantity, quality and source.
 - b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.
 - c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.
 - d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches).
 - e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.
 - f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.
 - g. Identification of proposed monitoring of hydrological attributes.

Flooding and coastal erosion

10. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:
 - a. Flood prone land
 - b. Flood planning area, the area below the flood planning level.
 - c. Hydraulic categorisation (floodways and flood storage areas).
11. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.
12. The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:
 - a. Current flood behaviour for a range of design events as identified in 8) above. The 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.
13. Modelling in the EIS must consider and document:
 - a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.
 - b. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.
 - c. Relevant provisions of the NSW Floodplain Development Manual 2005.
14. The EIS must assess the impacts on the proposed development on flood behaviour, including:
 - a. Whether there will be detrimental increases in the potential flood affection of other properties, assets and infrastructure.
 - b. Consistency with Council floodplain risk management plans.
 - c. Compatibility with the flood hazard of the land.
 - d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
 - e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.
 - f. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
 - g. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.
 - h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.
 - i. Emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.
 - j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

Attachment B – Project Specific Requirements / Comments

Flooding:

OEH (Water, Floodplains and Coast Unit, Hunter) have some concerns related to water management (including post construction) and erosion and sediment during construction. As such OEH requests the following additional information:

1. The proposed construction plans, Project number 1418917 Drawings 2, 3 and 4 by Golder Associates show existing and proposed levels on site for the area where the proposed capping is to occur. These drawings show increases of level of up to 1.2 metres together with batter slopes which may direct flows towards the adjoining properties and/or impede the natural flow of water from these properties. The EIS should provide adequate stormwater/flood modelling information to demonstrate that there are no adverse effects on flood levels and stormwater flows beyond the property boundaries.
2. Proposed methodology for the construction of the 12 metre deep cut off wall will require excavation of considerable volumes of spoil in order to achieve stable batters at the required depth. The majority of the spoil is proposed to be reused in the bentonite mix and to refill the void however during construction volumes of unconsolidated spoil will be present on site. Standard erosion and sediment control procedures as required by the Blue Book are unlikely to be adequate to ensure that contaminants are not mobilised from the spoil pile during wet weather. The EIS must provide details of containment of contaminated runoff and any water generated by dewatering during the construction process. Risk assessment must include all stages of the construction process. Limitations on stock pile size and area of exposed excavation at any one time may be required to mitigate risks.

Attachment C – Guidance material

Title	Web address
Relevant Legislation	
<i>Coastal Protection Act 1979</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+13+1979+cd+0+N
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmental Planning and Assessment Act 1979</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>Marine Parks Act 1997</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Threatened Species Conservation Act 1995</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
<i>Water Management Act 2000</i>	www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<i>Wilderness Act 1987</i>	www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
Biodiversity	
NSW Biodiversity Offsets Policy for Major Projects (OEH, 2013)	www.environment.nsw.gov.au/resources/biodiversity/140672biopoly.pdf
Framework for Biodiversity Assessment (OEH, 2013)	www.environment.nsw.gov.au/resources/biodiversity/140675fbapdf
Fisheries NSW policies and guidelines	www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation
List of national parks	www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, re-categorisation and road adjustment policy (OEH, 2012)	www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Guidelines for developments adjoining land and water managed by OEH (DECCW, 2010)	www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf
Heritage	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf
Statements of Heritage Impact 2002 (HO & DUAP)	www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf
NSW Heritage Manual (DUAP) 1996	www.environment.nsw.gov.au/Heritage/publications/index.htm#G-I

Aboriginal Cultural Heritage	
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
Aboriginal Site Recording Form	www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf
Aboriginal Site Impact Recording Form	www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf
Aboriginal Heritage Information Management System (AHIMS) Registrar	www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Care Agreement Application form	www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf
Water and Soils	
Acid sulphate soils	
Acid Sulfate Soils Planning Maps via 'The NSW Natural Resource Atlas'	www.nratlas.nsw.gov.au/
Acid Sulfate Soils Manual (Stone et al. 1998)	www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	http://www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Flooding and Coastal Erosion	
Reforms to coastal erosion management	www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm
Floodplain development manual	www.environment.nsw.gov.au/floodplains/manual.htm
Guidelines for Preparing Coastal Zone Management Plans	Guidelines for Preparing Coastal Zone Management Plans www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf
NSW Climate Impact Profile	NSW Climate Impact Profile
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation
Water	
Water Quality Objectives	www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

From: [Rebecca Johnston](#)
To: [Patrick Copas](#)
Subject: RE: Request for Key Issues and Assessment Requirements - Orica Remediation Project, Kooragang Island (SSD-7831)
Date: Tuesday, 9 August 2016 11:08:03 AM
Attachments: [image002.png](#)
[image004.png](#)
[oledata.mso](#)
[image003.jpg](#)

Dear Patrick

Thank you for the opportunity to provide input into the SEARs for the proposal outlined in your email of 26th July 2016. The Scoping Report has been reviewed and the following comments are provided to assist the Department in the preparation of the SEARs.

It is noted that Section 1.3 (pp 2) and Table 1 (e)(pp 3) of the Scoping Report prepared by Orica incorrectly identifies the zoning of the land being *zoned Special Activities under the State Environmental Planning Policy (Major Projects) Amendment 2009*. Elsewhere in the document, the correct zoning is referenced, being SP1 Special Activities under the *State Environmental Planning Policy (Three Ports) 2013*.

Port of Newcastle (PON) is the adjoining land owner of Lot 7, DP 262783, being Heron Road, and is a significant land holder and operator of port activities on Kooragang Island. Please note that Heron Road and Greenleaf Road are not public roads, and PON is not the roads authority under the terms of Roads Act 1993. These are private parcels of land of which PON acts as the manager and owner.

PON and Orica work closely together and Orica have provided regular communication regarding the status of this project. Ongoing communication by Orica with regards to this project is expected, and requested to continue. Consultation with PON tenants on adjoining or nearby land, should also be undertaken as part of the preparation of the EIS. PON can provide contact details of such tenants, if required.

The following should be addressed through the EIS:

- During construction short-term monitoring should be undertaken of adjacent groundwater monitoring wells to ensure works are not exacerbating existing arsenic levels, or mobilising dormant contamination;
- Process for consultation with PON with regards to the development of the Long-term Environmental Management Plan and Groundwater Monitoring Program, especially for the location of any additional monitoring wells/sites required on PON land, ongoing access arrangements and provision of data.
- The impacts from the generation of additional construction traffic should be considered in light of other port activities, in particular the distribution of cargo from K2 and K3 Berths via truck to local storage facilities.
- Should a construction laydown area be required on any PON land including Heron Road, the consent of the land owners will be required for such a use as well as a licence from PON.

If you have any questions regarding the above please let me know.

regards

Rebecca Johnston

Planning Officer

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