

Tuesday, 30 March 2010

Our Ref: EA0026

Land Remediation Projects Manager  
Incitec Fertilisers Limited  
Main Road,  
Boolaroo NSW 2294

Attn: Mark Shelley

Dear Mark,

**Re: Interim Audit Advice No. 21  
Phase 4 Detailed Remediation Action Plan  
Incitec Fertilisers Limited Site, Cockle Creek, NSW**

Following Interim Audit Advice No. 20 (29 March 2010) which provided an assessment regarding the Phase 2 Detailed Remediation Action Plan (Phase 2 D-RAP), this letter provides an assessment of the Phase 4 Detailed Remediation Action Plan (Phase 4 D-RAP), as referenced below:

- Soil and Groundwater Consulting (25 March 2010) *Detailed Remediation Action Plan, Incitec Fertilizers Limited, Phase 4, Cockle Creek Site Redevelopment, Boolaroo, New South Wales* (Ref: SG061313 RP07, Rev 1).

It is noted that a draft version of the Phase 4 D-RAP dated 23 March 2010 was reviewed by the Auditor, commented upon and subsequently revised.

The Phase 4 area is located to the south of the existing buildings. No containment cell construction is proposed within the Phase 4 area.

It is understood that this interim advice letter is to be used as part of the Part 3A planning submission for the project.

The following table presents an assessment of the Phase 4 D-RAP in accordance with NSW EPA (1997) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminates Sites*.

<b>Table 1: Assessment of Detailed Remedial Action Plan</b>	
<b>Remedial Action Plan Aspect</b>	<b>Auditor Assessment / Comments</b>
<b>EXECUTIVE SUMMARY</b>	An executive summary has been provided and is considered to be adequate.
<b>SCOPE OF WORK</b>	The scope of work has been clearly defined and is considered to be adequate.
<b>SITE IDENTIFICATION</b>	The site identification has been clearly defined.
<b>SITE HISTORY</b>	An adequate summary of the Site history has been provided.
<b>SITE CONDITION AND SURROUNDING ENVIRONMENT</b>	The Site condition and surrounding environment have been adequately summarised.
<b>GEOLOGY &amp; HYDROGEOLOGY</b>	The Auditor considers that the regional and Site specific geology / hydrogeology have been appropriately summarised.
<b>BASIS FOR ASSESSMENT CRITERIA</b>	Assessment criteria were adequately defined for soil, groundwater and surface water. The Auditor notes that assessment criteria were not available for all chemicals which have been detected, however, it is considered that criteria have been identified for the chemicals which drive risks at the Site.
<b>RESULTS &amp; SITE CHARACTERISATION</b>	An adequately detailed discussion of previous results and site characterisation data was provided. The statistical summary previously provided in the C-RAP was updated with limited additional data collected by S&G.
<b>REMEDIAL ACTION PLAN</b>	
<b>Remedial Goal;</b>	<p>The RAP states that the goal of the Phase 4 remediation activities are to (paraphrased) remediate contaminated soils to ensure that the area is suitable for residential use.</p> <p>The Auditor considers the remedial goal to be appropriate considering the staged remediation approach which is being proposed.</p>
<b>Discussion of the extent of remediation required;</b>	The D-RAP notes that the majority of the Site requires remediation, however, for the purposes of the Phase 4 remediation activities, the extent of remediation is limited to the area to the south west of the current buildings. The area to the north east of the current buildings is referred to as the Phase 2 area. The area where buildings are currently present is referred to as the Phase 3 area.
<b>Evaluation of Remedial Options;</b>	The evaluation of relevant remedial options was previously presented in the C-RAP and considered to have been adequate. The Auditor considers that reiteration of the C-RAP discussion was not necessary.

<b>Table 1: Assessment of Detailed Remedial Action Plan</b>	
<b>Remedial Action Plan Aspect</b>	<b>Auditor Assessment / Comments</b>
<b>Selected Preferred Option;</b>	<p>The C-RAP previously identified the preferred remediation approach to be excavated of contaminated soils and construction of an onsite containment cell, with localised groundwater extraction and treatment to be conducted in the north western portion of the Site. This represents Phase 2 of the remediation activities.</p> <p>Phase 4 remediation activities are to comprise excavation of contaminated soils, temporary stockpiling of soil in available areas or within Shed 4, screening of excavated soils for geotechnically unsuitable materials and placement in the containment cell (for an assessment of the proposed containment cell see Interim Audit Advice No. 20, 29 March 2010).</p>
<b>Rationale;</b>	<p>The C-RAP included a rationale for the selection of the preferred remedial option which the Auditor considers to have been appropriate. The Auditor considers that reiteration of the C-RAP discussion was not necessary.</p>
<b>Proposed Validation Testing;</b>	<p>The proposed validation testing includes the following:</p> <ul style="list-style-type: none"> <li>• Visual inspection to confirm the absence of fill and odorous / discoloured soils in excavated areas;</li> <li>• Use of X-ray Fluorescence (XRF) screening for excavation surfaces on a square grid (100 locations per hectare). The XRF data will be validated through laboratory analysis on a basis of one laboratory check sample per 10 XRF samples;</li> <li>• Sampling for a broad range of organic and inorganic analytes on a larger grid (5 per hectare).</li> </ul> <p>The Auditor considers the proposed validation testing to be adequate.</p>
<b>Interim Site Management Plan (before remediation);</b>	<p>The Site is currently operational and access is restricted through a chain mesh fence along each boundary and a security controlled vehicle access gate. As such, the Auditor considers that interim site management is not necessary.</p>

<b>Table 1: Assessment of Detailed Remedial Action Plan</b>	
<b>Remedial Action Plan Aspect</b>	<b>Auditor Assessment / Comments</b>
<b>Site Management Plan (operation phase) including stormwater, soil, noise, dust, odour and OH&amp;S;</b>	<p>The Phase 4 D-RAP refers to the need for a Construction Environmental Management Plan (CEMP) to address the following issues:</p> <ul style="list-style-type: none"> <li>• Soil management (e.g. minimise erosion);</li> <li>• Surface water management (e.g. collection, dams, stormwater treatment, diversions);</li> <li>• Groundwater management (e.g. groundwater treatment system discussed in C-RAP SAR);</li> <li>• Flora and fauna management (e.g. unexpected finds, prevention of weed propagation);</li> <li>• Visual landscape and rehabilitation management;</li> <li>• Noise and vibration management (e.g. minimisation, monitoring and community liaison);</li> <li>• Air quality management (e.g. dust / odour minimisation and monitoring);</li> <li>• Traffic / access management (e.g. signage, speed limitation, parking restrictions);</li> <li>• Archaeology and heritage management (e.g. cease work if potential heritage items are discovered);</li> <li>• Hazard and risk management (e.g. induction);</li> <li>• Utilities and service management (e.g. minimise interruptions);</li> <li>• Asbestos management (e.g. licensing of contractors, register, permits, monitoring, record keeping);</li> <li>• Demolition management (e.g. licensing of contractors, permits, monitoring, waste management).</li> </ul> <p>A CEMP which applies to remediation activities across the site was provided in the Phase 2 D-RAP and assessed by the Auditor to be adequate for the purposes of the Audit.</p>

<b>Table 1: Assessment of Detailed Remedial Action Plan</b>	
<b>Remedial Action Plan Aspect</b>	<b>Auditor Assessment / Comments</b>
<b>Contingency Plan if Selected Remedial Strategy Fails;</b>	<p>The Phase 2 D-RAP provides the following contingency plans:</p> <ol style="list-style-type: none"> <li>1. The only potentially viable option to remediate soil contamination was identified to be offsite disposal to a landfill, which S&amp;G has assessed to be cost prohibitive;</li> <li>2. Use of existing groundwater extraction wells to remove groundwater if source removal is inadequately effective.</li> </ol>
<b>Contingency Plans to Respond to site Incidents. Site Management Plan for the Operation Phase;</b>	
<b>Remediation Schedule and Hours of Operation;</b>	<p>A remediation schedule was provided by Golder as an attachment to the Phase 2 D-RAP. This schedule also applies to the Phase 4 activities and the Phase 4 D-RAP refers to this schedule. The Auditor considers this to be defensible.</p> <p>The D-RAP notes hours of operation to be 6am to 6pm Monday to Friday and 9am to 1pm on Saturdays.</p>
<b>License and Approvals;</b>	<p>The D-RAP provides a discussion of relevant licenses and approvals, including the following:</p> <ul style="list-style-type: none"> <li>• Contaminated Land Management Act 1997: Site has been declared as a Remediation Site under Part 3, Division 3. IFL has entered into a Voluntary Management Plan with DECCW;</li> <li>• State Environmental Planning Policy 'Major Projects' 2005: Due to the Remediation Site declaration, Minister for Planning &amp; The Environment approval is required for the remediation under Part 3A of the Environmental Planning and Assessment Act 1979;</li> <li>• State Environmental Planning Policy 55 'Remediation of Land': The proposed remediation works are Category 1 and require consent (noting that the requirement for consent was triggered under the Major Projects SEPP);</li> <li>• Protection of the Environment (Operations) Act 1997 and Regulations: Some waste management and waste tracking requirements apply.</li> </ul> <p>It is noted that S&amp;G has been obtaining appropriate licensing for dewatering / reinjection from the Department of Water and Energy.</p> <p>Heritage investigations have indicated a low potential for significant heritage sites.</p>
<b>Contacts / Community Relations;</b>	Key stakeholder details have been defined.

<b>Table 1: Assessment of Detailed Remedial Action Plan</b>	
<b>Remedial Action Plan Aspect</b>	<b>Auditor Assessment / Comments</b>
<b>Staged Progress Reporting;</b>	<p>The D-RAP proposes monthly progress reporting, reporting when certain milestones are reached, annual reporting and a final validation report.</p> <p>The Auditor considers the proposed reporting to be adequate.</p>
<b>Long term site management plan.</b>	<p>An Environmental Management Plan (EMP) will be prepared following completion of the remediation works to provide a framework for the ongoing management of the containment cell. The D-RAP highlights leachate management, capping inspection / maintenance and surface water / groundwater monitoring as the primary long term management related requirements. A Groundwater Quality Management Plan will be developed and implemented as part of the EMP.</p> <p>The D-RAP states that the EMP must be a legally enforceable document and as such:</p> <ul style="list-style-type: none"> <li>• The existence of the EMP will be noted on the Section 149 Certificate for the containment cell portion of the Site (which will have a separate title identifier by completion of the containment cell) and under Section 88b of the Conveyancing Act 1919 where its presence will be noted on the land title;</li> <li>• The EMP will be implemented by a single entity. At this stage, IFL will retain ownership of the containment cell and as such carry legal responsibility for the implementation of the EMP;</li> <li>• The EMP will be reviewed and approved by the Site Auditor.</li> </ul> <p>The details regarding the proposed long term management of the containment cell are considered to be adequate for this stage (i.e. commencement of part of remediation activities).</p>
<b>CONCLUSIONS &amp; RECOMMENDATIONS</b>	<p>A 'Conclusions &amp; Recommendations' section was provided which the Auditor considers to be adequate.</p>

Based on the above review the Auditor considers that the Phase 4 D-RAP provides a suitable framework for remediation of the Phase 4 area.

### 3. FUTURE STAGES OF AUDIT

In accordance with the requirements for the Voluntary Management Proposal agreed between IFL and NSW DECCW the following audit outcomes are to be provided in the future (as per Interim Audit Advice No. 20, 29 March 2010).

Table 2: Future Audit Outcomes			
Remediation Phase	Documents to Audit	Audit Outcome	Comment
Phase 3	Phase 3 D-RAP	Interim Audit Advice	Phase 3 D-RAP not prepared yet.
Completion	Validation Reports	Part A Site Suitability Audits	To be prepared for both Containment Cell and Residential Area.

#### 4. CONCLUSIONS

Based on the review completed, the Auditor considers that the Phase 4 D-RAP provides a suitable framework for remediation of the Phase 4 area.

As noted in Interim Audit Advice No. 20 (29 March 2010), a Conceptual Remediation Action Plan (C-RAP) audit comment relating to groundwater solute transport modelling remains unresolved and this issue relates to the Phase 4 D-RAP. However, based on preliminary modelling and the proposed extent of remediation, the Auditor does not consider this to be a critical issue. Appropriate modelling is to be completed in the near future and will be reviewed as part of the Phase 2 D-RAP audit advice.

Should you have any questions regarding the content of this letter, please do not hesitate to contact me via phone (02 4040 8150) or email ([phitchcock@environmental-auditors.com.au](mailto:phitchcock@environmental-auditors.com.au)).

Yours faithfully,



Phillip Hitchcock

NSW EPA Accredited Site Auditor (Contaminated Land)