

BACKGROUND INFORMATION DOCUMENT

PROPOSED CHROME CHEMICALS PLANT - NEWCASTLE

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1. Purpose of this document

This Background Information Document provides information on **LANXESS CISA's** proposed new Chrome Chemical Plant at its Newcastle Site in the KZN Province.

You are invited to participate in the EIA by registering as an I&AP and submitting issues of concern and suggestions on the proposed Lanxess CISA's Chrome Chemicals Plant at its Newcastle site. Your participation will assist in identifying any environmental and social issues related to the proposed project and ensure that these are evaluated in the EIA. In addition, all documentation from the EIA process will be made available to you.

This document is the first opportunity to comment. Should you participate, you will be invited to a Public Meeting. You will also receive further EIA reports.

To participate in the EIA, please complete the included registration form and return (preferably by email) to:

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2. INTRODUCTION

It is the intention of LANXESS CISA (Pty) Ltd to double production capacity at its Newcastle Site. The facility will broaden its production scope and increase its chromite beneficiation capability. This will be achieved by utilising existing plant infrastructure which will be augmented with new equipment so as to increase both volumes and the range of chrome chemicals at the Newcastle Site.

Although South Africa has about 70% of the world's total chrome reserves, (mostly derived from the Bushveld Igneous Complex), and produces 75% of the world's ferrochrome, South Africa currently produces approximately 8% of the world's chrome chemicals. The proposed Lanxess CISA chrome chemicals production facility is anticipated to produce approximately 17% of the world's chrome chemicals. As such the development will significantly contribute to the beneficiation of South Africa's chrome resources. This will result in significant foreign exchange earnings for South Africa, as more than 90% of the products will be exported.

3. LOCATION OF PROPOSED CHROME CHEMICALS PLANT

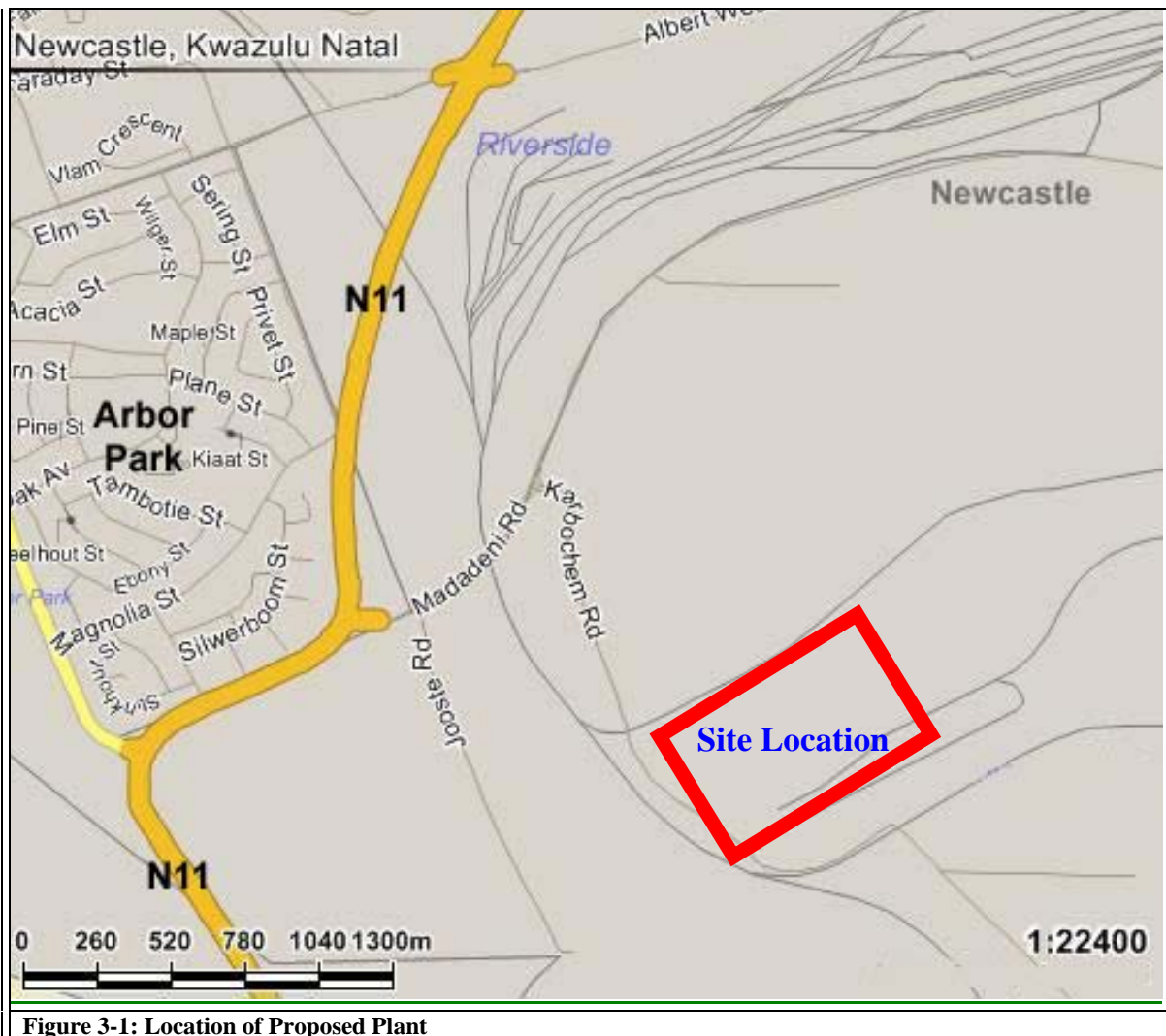


Figure 3-1: Location of Proposed Plant

4. DESCRIPTION OF THE PROCESS

Chromium chemicals are produced through the alkaline roasting of chromite ore in a rotary kiln where it is oxidized from its trivalent state - Cr (III) - to its hexavalent state -Cr (VI) - in the form of sodium monochromate, which forms the basis for the production of sodium dichromate and chrome Oxide amongst other products. Figure 1 shows an illustration of a typical chromite roasting kiln. Refer to figure 4.2 for a brief illustration of the process. Chrome chemicals are typically used in leather tanning, metal treatment, wood preservation, refractory applications, pigments, chrome electroplating, aerospace and other exotic alloys.

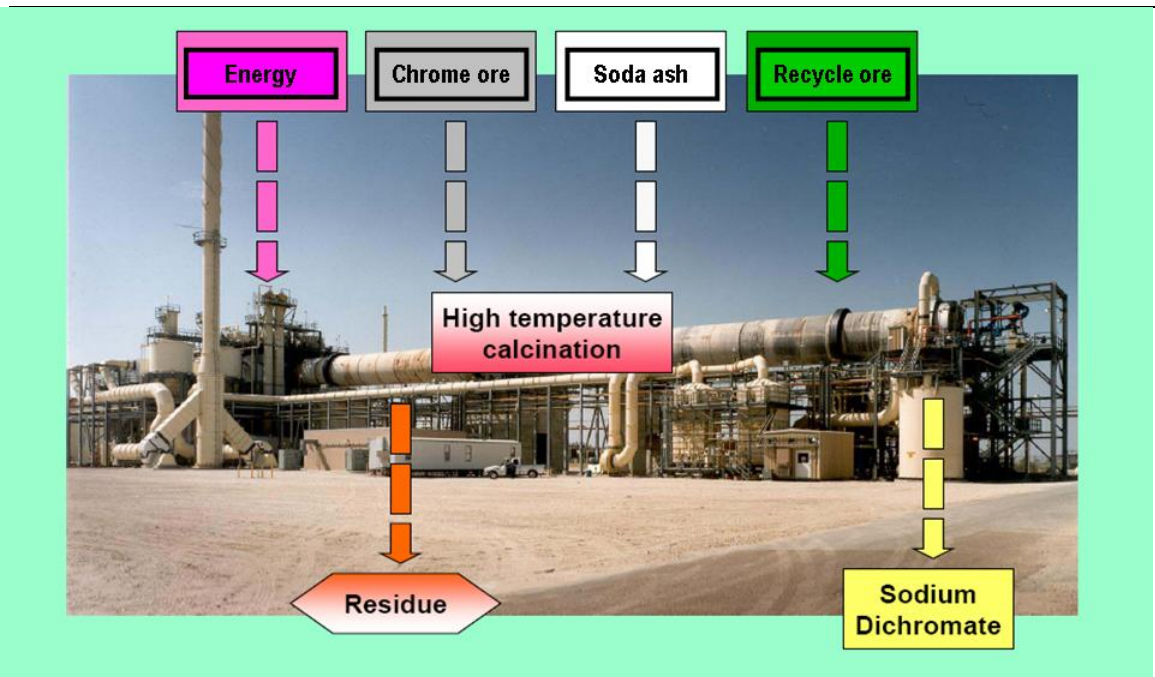


Figure 4-1: Chrome chemicals kiln

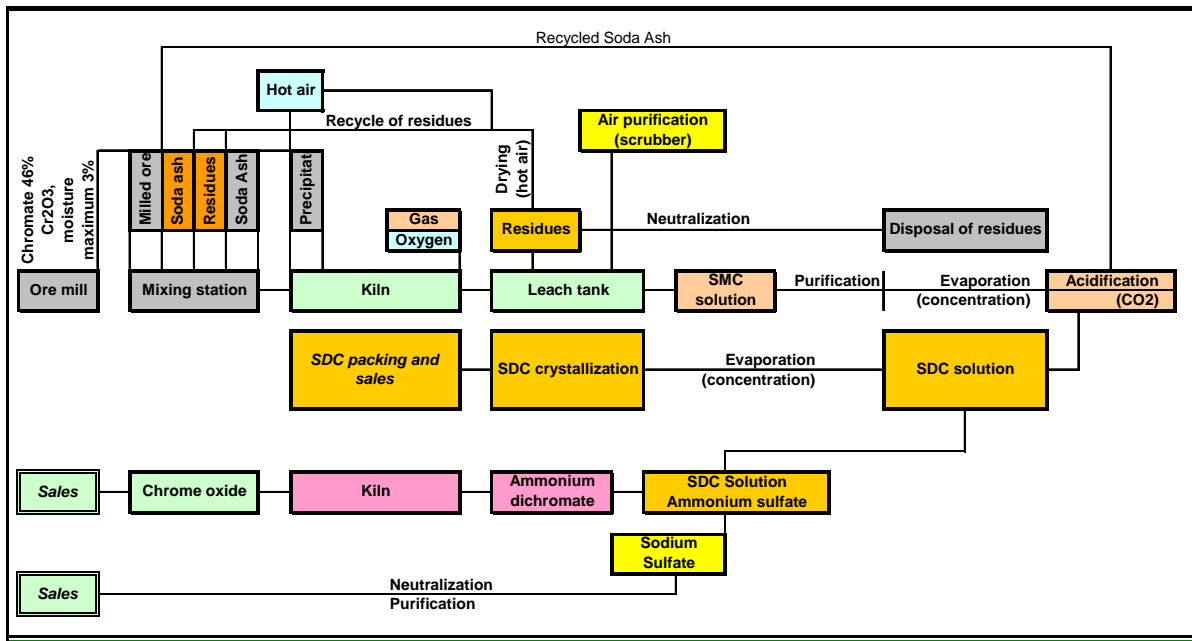


Figure 4-2: Production process flow diagram

The manufacturing process technology and pollution abatement technology to be used in the plant is based on proven unit processes, currently in operation at Lanxess CISA's Newcastle site. The plant will incorporate processes that minimize undesirable by-product formation, and maximize recycle streams. This will ensure that it meets world standards in process efficiency, health, safety and environmental control.

The roasting kiln will use Sasol gas as fuel, provided the necessary gas is available, as opposed to coal, and as such avoid production and emission of Sulphur Dioxide (SO₂).

The plant will be a net user of water. Several containment facilities will be installed to contain all spillage and run-off from areas where water may become contaminated, all contaminated water will be recycled into the process.

5. ENVIRONMENTAL IMPACT ASSESSMENT

Lanxess CISA is required to apply for Environmental Authorisation, for the proposed chrome chemicals plant expansion, in terms of the so-called NEMA 2006 EIA Regulations, GN R. 385 of 21 April 2006, promulgated under Section 24(5) of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998). The activities listed in GN R. 387, promulgated under Sections 24 and 24(D) of NEMA, which would form part of the project and require authorisation, are as follows:

1. The construction of facilities or infrastructure, including associated structures or infrastructure, for -

...(c) the above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of 1 000 cubic metres or more at any one location or site including the storage of one or more dangerous goods, in a tank farm. In this case the storage chrome chemicals will apply.

...(e) any process or activity which requires a permit or license in terms of legislation governing the generation or release of emissions, pollution, effluent or waste and which is not identified in Government Notice No. R. 386 of 2006;

...(g) the use, recycling, handling, treatment, storage or final disposal of hazardous waste;

...(j) the bulk transportation of dangerous goods using pipelines, funiculars or conveyors with a throughput capacity of 50 tons or 50 cubic metres or more per day. In this case the transportation of chrome chemicals may apply.

2. Chrome Chemicals manufacture meets the definition of a 'Chromium Processes' (Scheduled Process No. 50), defined in Schedule II to the Atmospheric Pollution Prevention Act (APPA), 1965 (Act 45 of 1965). Accordingly, a Registration Certificate in terms of the said Act is required for the proposed activity.

3. The construction and operation of a mono-disposal site for waste material derived from the process qualifies as a waste disposal activity as defined in Section 1 of the Environment Conservation Act (ECA), 1989 (Act 73 of 1989).

5.1 What is an EIA Process?

The EIA process is a methodical and systematic process to identify potential positive and negative impacts on the biophysical, socio-economic, and cultural environment which may come about as a result of a proposed activity. The EIA process is also used to examine alternatives / management measures to minimise negative and optimise positive consequences. The ultimate objective of the EIA process is to prevent substantial detriment to the environment.

5.2 What are the benefits of an EIA process?

Different role players derive different benefits from participating in the EIA process as follows:

5.2.1 To authorities:

- Informed decision making;
- Improvement / protection of environmental quality;
- Facilitates planning for demands on bulk services and infrastructure.
- Planning for the sustainable utilisation of natural resources;

5.2.2 To developers of identified activities:

- Investigation to determine the adequacy of natural resources, and suitability of proposed sites and technologies;
- Identification and management of risks associated with environmental impacts;
- Utilisation of local and indigenous knowledge;
- Prevention of pollution; and
- Energy and water saving and associated financial savings.

5.2.3 To interested and affected parties

- An opportunity to be informed and to express concerns;
- Protection of environmental rights;
- Increased knowledge and environmental awareness

5.3 ENVIRONMENTAL IMPACT ASSESSMENT FOCUS AREAS

5.3.1 Air quality

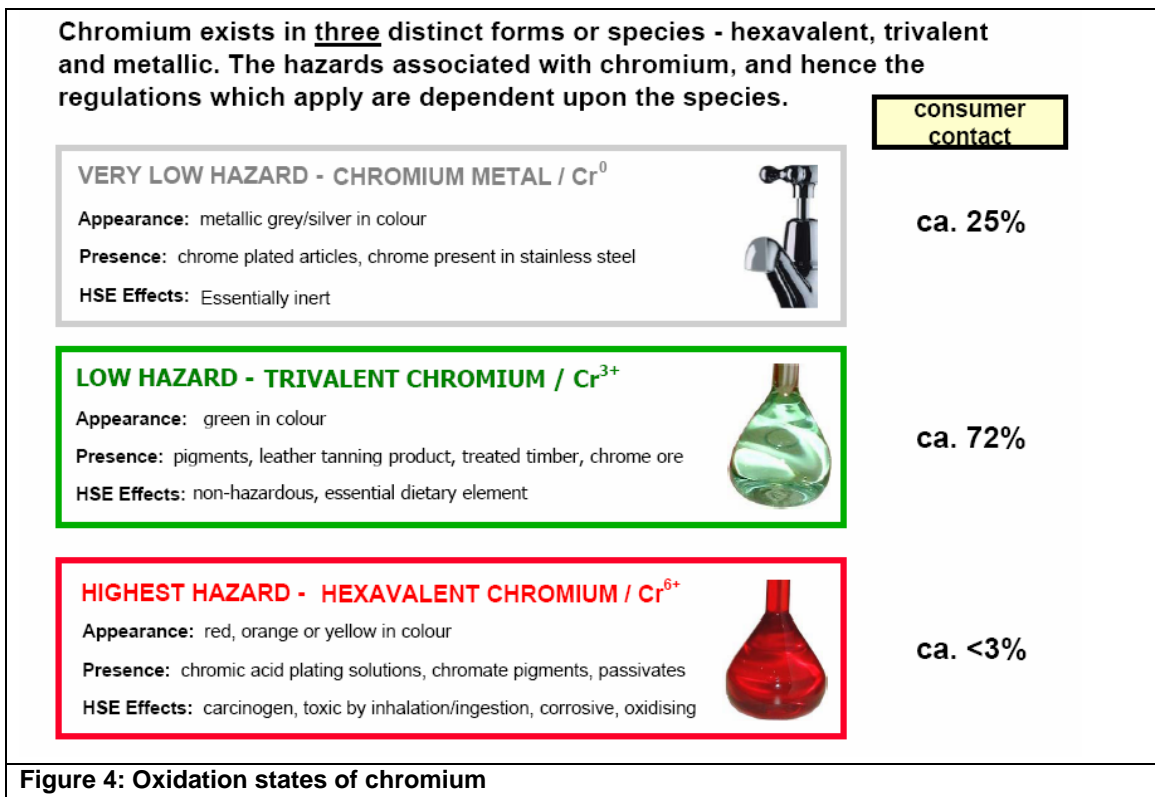
Sources of air quality information that will be assembled to describe baseline air quality will include air quality monitoring by Lanxess CISA, and air quality information derived from the municipality and other government bodies where available. Ambient air quality measurements may also be taken to inform the EIA.

A detailed emission inventory will be compiled for the Lanxess CISA site and dispersion modelling will be undertaken to predict the potential impact on ambient air quality and determine suitable mitigation objectives. Current emission will be modelled along with the emissions anticipated to emanate from the proposed chrome chemicals plant and equipment. Air quality impacts will be assessed in cognisance of baseline data and dispersion model output.

As the facility will use Sasol gas as fuel (provided the necessary gas is available) and not coal, it will not increase SO₂ emissions; particulate emissions will be limited to emission of a very small amount of particulates from electrostatic precipitator and bag filter units. An emissions level of NO_x from the facility is still uncertain and this will be determined through researching existing production facilities.

5.3.2 Hexavalent Chromium

Chromium is a natural constituent of the earth's crust. Chromium can exist in a number of oxidation states including metallic, trivalent and hexavalent states. These states present different levels of hazard, refer to figure 4: Oxidation states of chromium. Trivalent chromium (Cr³⁺) is naturally occurring and a trace element in man and animals. Most Cr³⁺ component are not regarded as hazardous chemicals. Hexavalent chromium (Cr⁶⁺) is generated by a number of commercial and industrial sources. Generally Cr⁶⁺ is much more toxic than the trivalent form. It can be absorbed into the body by way of inhalation, ingestion or dermal exposure and cause severe health effects. It is a known carcinogen via the inhalation route of exposure.



5.3.3 Waste

The facility will produce Cr⁶⁺ containing material that needs to be disposed; this will be reduced on site (treat Cr⁶⁺ to Cr³⁺). This waste may remain hazardous due to potential leaching of other heavy metals such as manganese and iron. Waste will be deposited at a dedicated suitable disposal facility to be built for that purpose. The site will be designed to meet the DWAF Minimum Requirements guideline series for waste management. As the waste will be very fine (similar to gold mine slimes) and largely composed of iron oxide and silicates. Other applications will be investigated and might offer an alternative to landfill disposal in the future.

5.3.4 Effluent, spill and contaminated runoff

The plant will be a net user of water. All plant areas will be covered with an impermeable layers (with leak detection mechanisms) to prevent sub-surface ingress of contaminated runoff. Containment areas will further be designed to contain all spillage and run-off from areas where water may be contaminated.

5.4 Consideration of Other Legislation

Other applicable environmental legislation and guidelines will be considered comprehensively including the National Environmental Management Act, of 1998 as amended, Environmental Conservation Act of 1989 as amended, the Air Pollution Prevention Act of 1965 and National Environmental Management Air Quality Act of 2004, the National Water Act of 1998. Applicable environmental legislation and guidelines will be contextualised for the proposed Chrome Chemicals plant by an environmental law specialist.

5.4.1 Health & Safety

The existing facility is a Major Hazardous Installation in terms of the MHI Regulations, and is registered as such with the department of labour.

5.5 PUBLIC PARTICIPATION

5.5.1 Who is conducting the EIA?

The EIA will be conducted by Environmental Science Associates a firm of independent environmental consultants.

5.5.2 Why is your participation important?

Participation by Interested and Affected Parties (I&APS) is in everyone's best interest because:

- It provides opportunities for I&APs and the authorities to obtain clear, accurate and understandable information about the expected environmental impacts of the proposed development.
- It provides members of the public with the opportunity to voice their concerns and to raise questions regarding the project.
- It provides affected parties with the opportunity to suggest ways for reducing or mitigating any negative impacts of the project, and for enhancing its benefits.
- It will enable the project proponent to consider the needs, preferences and values of affected parties in their decisions.
- It provides opportunities for the clearing up of misunderstandings about technical issues, resolving disputes and reconciling conflicting interests.
- It is vital for ensuring transparency and accountability in decision-making.
- It contributes toward maintaining a healthy, vibrant democracy.

You are important to the process and we urge you to participate by registering as an Interested or Affected Party (I&AP), if you have not already done so.

5.5.3 COMPONENTS OF THE PUBLIC PARTICIPATION PROCESS

The public participation process will consist of the following activities

- **NOTIFICATION** of I&APs regarding the EIA process, consultation activities and availability of reports and decisions by the authorities, using a variety of mechanisms.
- **FOCUS GROUP MEETINGS** with relevant sectoral groups (Groups of role -players with similar interest, such as authorities ,etc)
- **PUBLIC MEETINGS** that will be advertised. These will provide I&APs with information and opportunities to record concerns, issues and suggestions, as well as to identify other I&APs.
- **COMMENT PERIODS** will be allocated for both the draft and final Scoping Report in order to provide registered I&APs with the opportunity to review and comment on the information compiled through the EIA process. Registered I&APs will have the

opportunity to appeal the Record of Decision issued by **MDALA** at the end of the EIA process.

5.5.4 REGISTERING AS AN INTERESTED AND AFFECTED PARTY

In order to register as I&AP you should:

- Respond to the relevant newspaper advertisements.
- Complete and submit the registration sheet included in the Background Information Document.
- Attend public meetings.
- Provide Afrosearch with your contact details.

As a registered I&AP you are entitled to the following:

- Invitations to public meetings.
- Project background and information by way of Background Information.
- Opportunities to raise issues and concerns throughout the process, during public events as well as public comment periods.
- Notifications to inform you of the availability of reports for public comment.
- Ample opportunity to comment on reports to determine if your issues and concerns were addressed.
- A notification informing I&APs of the Draft Scoping Report.
- Opportunity to comment on the Draft Scoping Report.

The sharing of information forms the basis of any stakeholder engagement process and offers I&APs the opportunity to become actively involved in the project from the outset. It also plays an important role in the understanding of environmental investigations, as the input from I&APs ensures all potential issues are considered in the study.

5.5.5 PUBLIC MEETING

Public Meetings to introduce the project to I&APs is scheduled to take place on:

Date: 10 April 2008

Time: 18h00 till 20h00

Venue: Newcastle Recreation Centre, Oak Avenue, Abor Park, Newcastle.

We urge you to attend the Public Meeting to ensure that you are kept up to date with the project progress and that your issues can be formally recorded.

5.5.6 AUTHORITIES MEETING

Public Meetings to introduce the project to I&APs is scheduled to take place on:

Date: 10 April 2008

Time: 10h00 till 12h30

Venue: Newcastle Club, Scott Street, Newcastle.

This meeting is intended for authorities with jurisdiction over any aspect of the proposed development.