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Design & Access Statement

Proposed Clathration Facility
Croda Europe Ltd
Barnfield Road
Leek
Staffordshire
ST13 5QJ

Prepared as part of Planning Submission 23.12.2009, on behalf of:

Croda Europe Limited

By:

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Use

The Proposed area of development has been part of Croda's production facility for a number of years and up until 2003, prior to demolition, the site had an industrial unit of a similar scale, in a slightly different orientation – as can be seen on photograph in Appendix 'A'

This facility provided Clathration Capacity to give Croda production capability to enhance the Omega 3 content of the ethyl esters of fish and vegetable oils for sale into the pharmaceutical and food additive markets.

Post demolition this process has been served at another Croda site where it was moved following the demolition of the above. The current capacity is well below that needed to sustain the projected market for these products.

This project is to provide new Clathration Capacity to replace the existing Croda facility, meet future market needs and also add some extra physical purification capacity to enable specific pharmaceutical and food grade additives to be manufactured.

Amount

The new facility is based, not only, upon serving Croda's need for production but also Croda's need to provide an economically viable development. This has resulted in a minimisation of the Proposed Building area with the use of external tank farms.

The extent of the development has been considered with regard to the local neighbourhood & the local community. The majority of the surrounding area is Industrial however there are a number of residential properties in close proximity to the site. The Pre Application information identifies No's 44 & 46 on Junction Road as a particular concern. We feel that the development of the site will improve the aesthetic of the area – which at present is land filled waste land.

As part of our responsibility with regard to noise as noted in the Pre Application document we will pay particular attention to noise levels and have included in Appendix 'D' existing noise reports from 2007 & 2009 & Appendix 'E' existing noise reports from 2003 . These existing reports will be supplemented with relevant noise assessments made upon proposed kit, we have yet to source these items.

Layout

One of the major considerations with regard to the Layout was how the proposal would interact with the existing infrastructure and allow future development and expansion.

The preliminary schemes were different to the final scheme as can be seen on Drawing No's. C1259/D/020P01 (Appendix 'B') & C1259/D/300P01 (Appendix 'C'). The major difference with regard to Layout is the orientation. This was considered to be restrictive for any future development, specifically with regard to accessing the North end of the site.

The position of the new building, at the North East corner of the site, has been carefully considered to enable future site development, give good vehicular access and allow safe access for personnel.

The existing access road will serve the Proposed building with additional areas of roadway and hard standing added to keep a 'one way' flow of traffic in and out of the site. The entrance and exit to the site are as existing with a third new gate to allow access to the new car parking area. The proposed layout will have a low level, if any impact upon existing traffic levels & will allow the existing site to function cohesively with any future developments.

Scale

The preliminary scheme as noted above was orientated in different position as the original process functioned in a slightly different manner and required a building on a larger scale. The Ridge was split level to accommodate items in the R41 Process which has been subsequently omitted from the scheme. With this omission we were able to redesign & re-orientate the proposal.

Due to the re-orientation we felt it necessary to change the scale of the building, specifically footprint and ridge height, to lesson the impact upon neighbours. We were able to re – evaluate the process and developed a scheme which allowed us to omit the R41 Process and rationalise the rest of the process – meaning a smaller facility.

Landscaping

The major areas of landscaping are hard standings and roadways these will provide access routes for Heavy Goods Vehicles, loading facility & circulation for personnel.

We are in the process of developing the drainage for Rainwater disposal, Surface Water disposal, Foul Disposal & Trade disposal.

We have a design brief for the drainage as follows.

All rainwater from the building will drain to an underground sump from where it will be utilised in the Process.
Surface water drainage will be classed as Trade drainage due to the risk of contamination and will drain to an interceptor whereby a decision will be made whether it needs to be removed via pump to a tanker or enter the existing drainage system.
Any foul drainage will be pumped into the existing foul drainage system.
We have included in our Planning Submission an existing drainage and underground survey Drawing No. SOR0897 refers.

In line with Pre Application Guidance & PPS 23 we instructed a third party Preliminary Risk Assessment to be undertaken and the findings are included as part of this application. This document is entitled 'Site Condition Report & Remediation Strategy – Land at Croda Chemicals Leek'. It has been prepared by Clancy Consulting on behalf of ETDE's remediation specialists Green Remediation Limited.

Appearance

The appearance of the new development will be industrial in appearance as the rest of the site. Colours & materials specified tie in with those of the surrounding area.
Drawings 550383/D/601, 550383/D/603 & 550383/D/610 refer.

Access

Vehicular Access
Access to the site is via the existing site entrance and will be managed so as not to disrupt the Public Highway. Entrances & exits to and from the new facility are off proposed hardstandings – these hardstandings have been designed to allow manoeuvrability of Heavy goods Vehicles.

Personnel Access.
Personnel Access will tie in with the existing site infrastructure.

Due to the nature of the works to be carried out on the site Disabled Access will be in accordance with the attached Disabled Access Statement – see Appendix 'F'.

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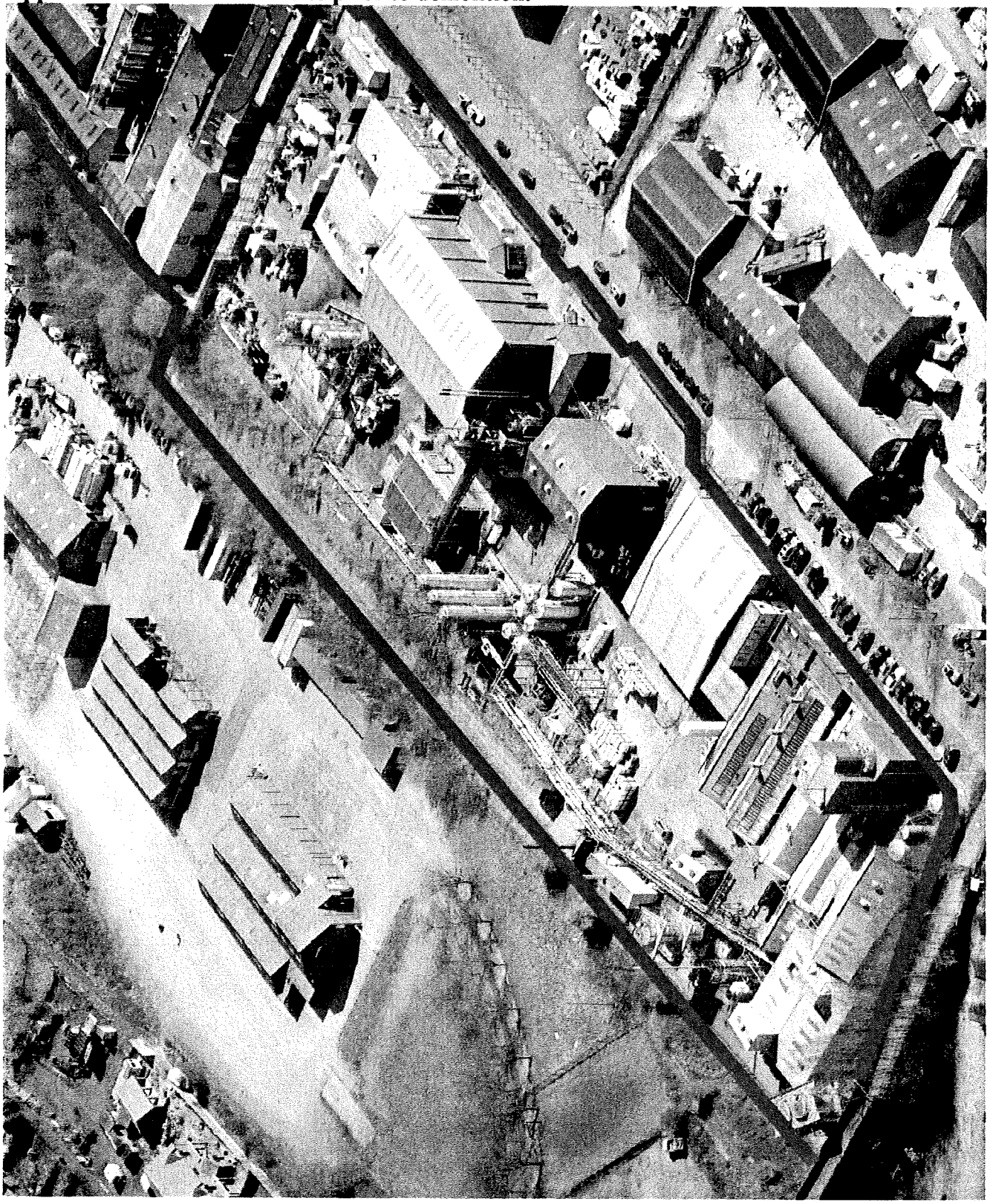
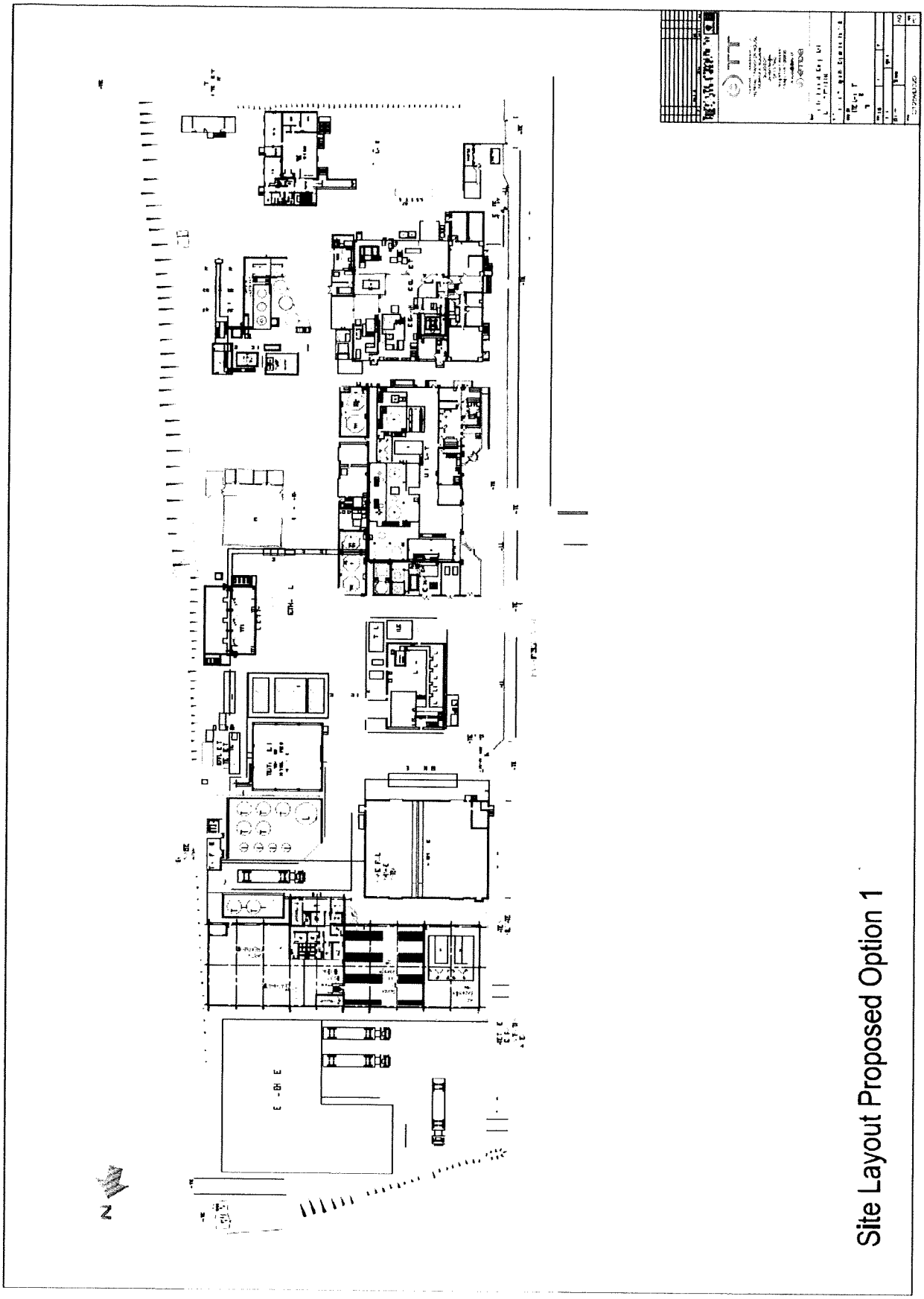
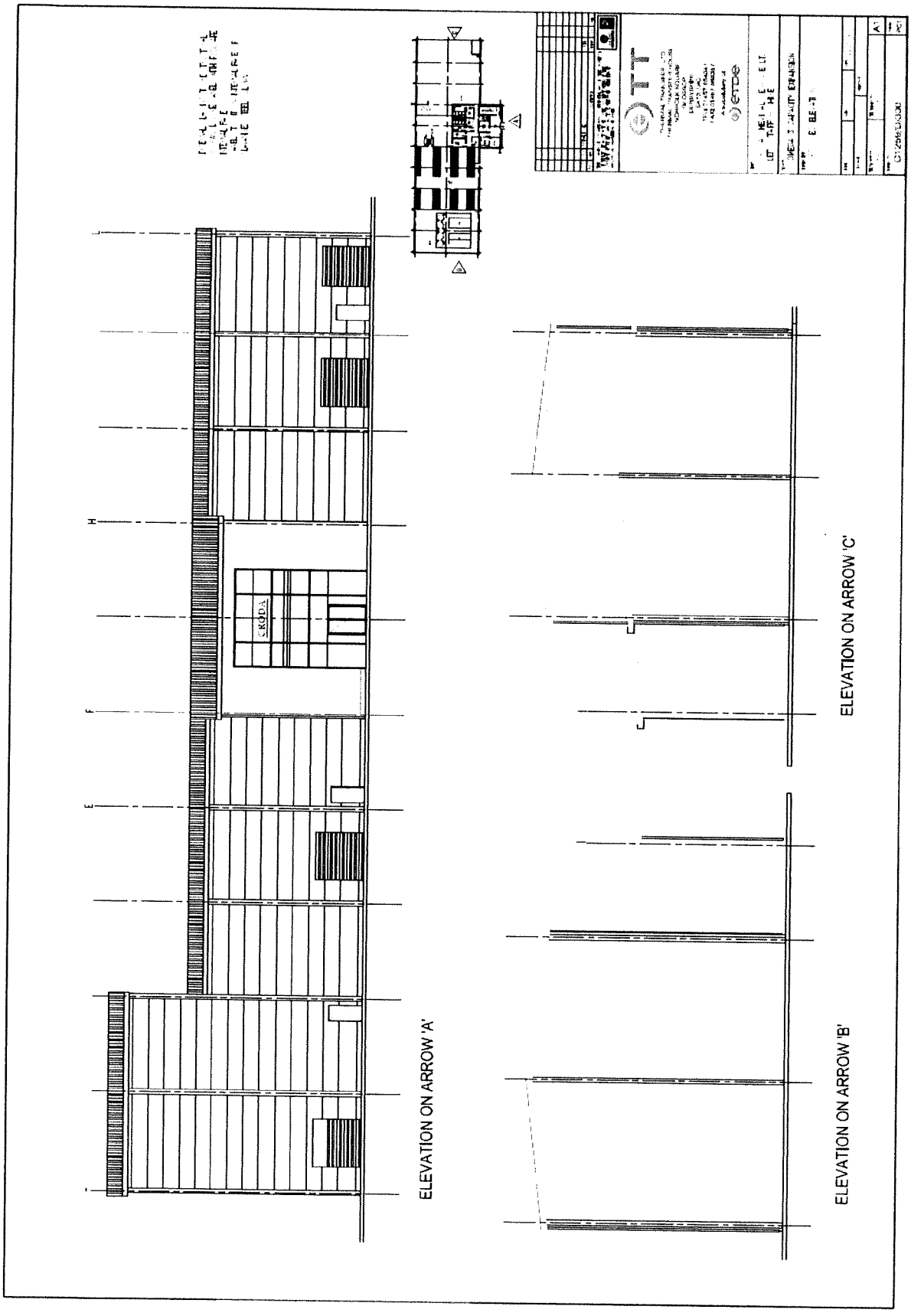
Appendix 'A'. Croda Leek Site prior to demolition.



B. First Proposal Site Plan.



C. First Proposal. Elevations.



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D. Noise Report 2007 & 2009.

To	File	**Croda Chemicals Europe Ltd** Barnfield Road Leek Staffordshire ST13 5QJ England Tel +44 (0) 1538 380400 Fax +44 (0) 1538 380401 www.croda.com/europe
Report Title & No	Environmental Noise Surveys Summary Report (Engineering Report 1299)	
Copies To	Engineering Reports	
From	Z Law	
Date	08 December 2009	

Environmental Noise Surveys Summary Report

Introduction

Environmental noise surveys have been conducted on the Croda site in Leek in 2003, 2007 and 2009. This report has been compiled to summarise the results of these studies. The main report describes the exercises conducted in 2007 and 2009 with the original report from 2003 reproduced in Appendix A.

Method

BS4142 Methods of Rating Industrial Noise Affecting Mixed Residential and Industrial Areas can be used as a method for determining noise for existing mixed residential and industrial areas. In outline The Specific Noise Level is the equivalent A weighted sound pressure level of a specific noise source at the assessment location over a time interval. The Background Noise Level is the A weighted sound pressure level of the residual noise measured in the absence of the specific noise source. Regarding the likelihood of complaint, a reading of more than 10dBA is likely to result in complaints with a reading of less than 5 dBA of marginal significance. Certain acoustic features can increase the likelihood of complaints over and above this associated with simple noise levels e.g. discrete continuous notes or distinct impacts and where present these can be accounted for by adding 5dB to the specific noise level.

Noise measurements were undertaken using a CEL-480 SLM and Type 1 Electret Microphone (fitted with a windshield) meter calibrated by Casella (in January 2007 for monitoring completed in December 2007 and in April 2009 for monitoring completed in May 2009). The SLM was calibrated using the CEL-284/2 Acoustic Calibrator at 114dB, the calibration checked and confirmed at the end of the monitoring exercise. All measurements were made at a height of approximately 1.5 m. The microphone was directed towards the site at each monitoring location.

Measurements were taken in the day and at night, during periods of normal plant operation (Dec 2007 & May 2009) and with the Lipid Cooling Towers and Site Boilers etc shut down (December 2007 only). Measurements were taken around 3m from the base of the Lipid Cooling Towers, Sandon Street Bridge estimated as 30m from residential property and at the perimeter fence in between (opposite site of old boiler diesel tank). As well as the average sound level LAeq dB(A) , the maximum and minimum, LAFmx dB(A) & LAFmn dB(A) are recorded for reference. Night Measurements were taken by S Machin and S Williams as indicated following training by QSHE Manager.

Results

Date/Time/Plant State/ Personnel	Location	Duration (mins)	LAeq dB(A)	LAFmx dB(A)	LAFmn dB(A)	Comments / notes
17 Dec 2007 14 00 – 14 15 Plant running & usual industrial estate activity R Briscoe	3m from Lipid Cooling Tower	3	82.4	87 7	80	
	Site Fence	3	55.7	64 9	53 2	
	Sandon Street Bridge	3	53.1	67 9	42 8	General Traffic noise
18/19 Dec 2007 23 50 – 00 15 Plant running & usual industrial estate activity S Machin	3m from Lipid Cooling Tower	3	81 5	82 9	80 7	
	Site Fence	3	54	58 2	50 1	
	Sandon Street Bridge	3	36 9	48.5	33 6	Monitoring repeated due to passing car
20 Dec 2007 13 00 – 13 30 Plant shutdown and usual industrial estate activity R Briscoe	3m from Lipid Cooling Tower	3	54 8	66 2	51 5	
	Site Fence	3	49.7	59 1	46 8	
	Sandon Street Bridge	3	57.8	76 2	41 6	General Traffic noise
20/21 Dec 2007 21 50 – 01 05 Plant shutdown and usual industrial estate activity S Williams	3m from Lipid Cooling Tower	5	48 3	60 9	41 4	
	Site Fence	5	40 4	53 9	37 0	
	Sandon Street Bridge	5	42 4	55.0	32 8	Monitoring delayed due to waiting car.
08 May 2009 10 30 – 11 30 Plant running & usual industrial estate activity R Briscoe	3m from Lipid Cooling Tower	3	81 1	84.4	79 7	Moderate wind
	Site Fence	3	55 3	65 1	53 0	Moderate wind
	Sandon Street Bridge	3	57.6	80 1	49 9	Moderate wind General Traffic noise, bird song & 3 dogs barking
11 May 2009 23 30 - 23 50 Plant running & usual industrial estate activity S Machin / S Williams	3m from Lipid Cooling Tower	3	81.3	82.7	80.2	Moderate wind.
	Site Fence	3	53 5	57.1	52.2	Moderate wind
	Sandon Street Bridge	3	41 2	60 4	33 4	Moderate wind Some traffic noise

Relevant data is highlighted red regarding Specific Noise and Background Noise Level calculations. From the above data the Specific Noise Level above background within the day time is therefore:

2009 operations: 57.6 – 57.8 = -0.2 dBA
2007 operations: 53.1 – 57.8 = -4.7 dBA

During the night time the Specific Noise Level above background:

2009 operations: 41.2– 42.4 = -1.2 dBA
2007 operations: 36.9 – 42.4 = -5.5 dBA

Conclusion

The Specific Noise Level created by the site has an insignificant affect on the Background Noise Level very close to residential property when measured and considered against BS4142 Methods of rating Industrial Noise Affecting Mixed Residential and Industrial Areas.

E. Noise Report 2003.

Appendix A: 2003 Background Noise Assessment Survey

Background noise assessment was also undertaken in July 2003 and compared to measurements taken a year earlier during normal operations. The report from this exercise is represented below.

Background Noise Assessment undertaken during Lipid Plant shutdown (08/07/03)

Measurement Location	Duration hh:mm:ss	LAeq dB(A)	LAFmx dB(A)	LAFmn dB(A)	Comments
Outside perimeter fence – opposite tanks 23 & 24 adjacent to office block.	00:05:02	59.6 (b) **59.1 (o)** ***0.5 (d)***	71.4	56.0	Some traffic – noise emanating from wood yard on opposite side of the road including intermittent sawing and drone' fro extraction system.
End of bridge at corner of site – ~10 metres from house number 46.	00:05:02	55.5 (b) **62.3 (o)** ***6.8 (d)***	68.9	53.6	Some traffic – general site activities including FLT's and lorries.
To side of public house – main road running directly in front of pub	00:05:03	56.2 (b) **57.7 (o)** ***1.5 (d)***	67.5	49.4	Some traffic including vehicles reversing + Birdsong.
Opposite Lipid Scrubber Unit (~ 5 metres from perimeter fence)	00:05:03	61.6 (b) **65.2 (o)** ***3.6 (d)***	63.5	60.0	General site noise.
Facing Tanks F1, 3 & 5 – Auction Market to rear.	00:05:02	55.8 (b) **56.6 (o)** ***0.8 (d)***	65.7	53.9	General site noise. Very minimal disturbance from traffic – Auction Market closed.
End of site boundary outside double gates, adjacent to public footpath.	00:05:03	52.6 (b) **58.1 (o)** ***5.5 (d)***	55.7	50.5	General site noise. No other contributory factors.

NOTES

- The weather conditions during the exercise were as follows; dry and very overcast, with a light easterly breeze and wind speed of 5 mph
- (b) = back ground level at location during the Lipid Plant shutdown.
- (o) = level at location when the site was fully operational. See SHE Report number 81.
- ***(d)* = the differences recorded with the site fully operational and during the Lipid Plant shut down. It should be noted that with the exception of one day the cooling tower remained operational throughout the shutdown and this was the case during the assessment.**

CONCLUSION

The above exercise was carried out to re-assess the level of background noise attributed to the Croda Leek site. The initial assessment was carried out on the 30th December 2002 during the Christmas shutdown (see SHE Report Number 150).
The report concluded that due to the site being located on an industrial estate comprising of a number of other outlets which were also contributory factors to the level of background noise the results obtained were inconclusive. It was agreed that the Lipid Plant was the main source with regard to noise emanating from the Leek site and it was decided that a further assessment should be carried out accordingly.

BS 4142 (Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas 1997) states that a difference of around +10 dB or more indicates that complaints are likely.
A difference of around +5 dB is of marginal significance.
It can be seen from the table above that the differences measured are acceptable within the scope of BS 4142.

The location of the nearest residential development recorded the highest difference of ***6.8 dB*** this is within acceptable constraints.

F. Disabled Access Statement.

Croda Chemicals International Ltd – Disabled Access Statement

The Clathration facility to be constructed within the existing site area at Croda Chemicals International Ltd, Leek site will include a dedicated production area that is accessed from dedicated changing area. The production facility includes large processing vessels, specialist equipment and manual handling equipment for solids and powders. The access to the process vessels is via 2 off high level access platforms (up to 4m in height). The vessels are heated to elevated temperatures using steam as part of the process. Some of the solids and powders required are supplied in containers which are usually procedure specific and can weight up to 20 kilos.

The occupancy of these rooms will be limited to these activities, and it is highly likely that routine manual lifting will be involved, in particular the loading of the salt sacks into the process vessels.

The process also requires regular sampling and manual operation, requiring the operator to access the vessels via the high level platform. Typically the activities associated within sampling and manual operation of the equipment require production staff associated with these activities to access testing points on equipment that may be underneath or above the equipment in question (an example of this is the requirement to access testing points on the Fermenter system). It is therefore highly likely that activities within this area will require staff to work at high or very low levels in undertaking their duties. Occupancy of this activity area is likely to be less than 20%. Access to the room is not restricted to ambulant disabled, but would prevent someone who is non ambulant from entering it. However the work content would not be suitable for most ambulant and non ambulant disabled persons.

Whilst the nature of the work to be performed within the production area is not suitable for non ambulant persons, it is necessary to physically separate the production area with a barrier, in this case with a raised bund wall around the facility. The access to part of the facility is also controlled via a dedicated change room, again with a raised bund. The passage through such changing areas in the event of escape perhaps as a consequence of fire could cause a delay in staff disabled or able bodied in escaping in such circumstances. Nonetheless access to the production facility is not restricted to all ambulant disabled, but would prevent someone who is non ambulant from entering them.

The facility will also contain vessels and a dedicated control room. The function of the control room is to house the process control electrical cabinets and HVAC equipment. Typically the activities associated within the vessels require staff associated with these activities to access testing points on equipment that may be underneath or above the equipment. It is therefore highly likely that activities within this area will require staff to work at high or very low levels in undertaking their duties. Occupancy of this activity area is likely to be less than 20%. Access to the process room is not restricted to ambulant disabled, but would prevent someone who is non ambulant from working in it. However the work content would not be suitable for most ambulant and non ambulant disabled persons.