

Draft

Environmental Scoping Report :
Buckman Laboratory Expansion
Addition of 3 Processing Vessels with Bulk
Handling Capabilities to Existing
Operations
1 Buckman Boulevard, Hammarsdale,
Durban, KwaZulu/Natal

Prepared by Pravin Amar
Tel : 031 201 7510
Fax : 201 89 39
Email : md@pravinamar.com

Applicant : Buckman Laboratories (Pty) Ltd
c/o Mr. Nicky Naicker
Tel : 031 736 8851
Fax : 031 736 1593
Cell : 083 655 7480
Email : n_naicker@buckman.com

1. INTRODUCTION :	4
2. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP):	12
3. DESCRIPTION OF THE PROPOSED ACTIVITY AND REASONABLE ALTERNATIVES	13
4. DESCRIPTION OF THE PROPERTY ON WHICH THE ACTIVITY IS TO BE UNDERTAKEN:	18
5. DESCRIPTION OF THE ENVIRONMENT THAT MAY BE AFFECTED :	19
6. IDENTIFICATION OF LEGISLATION AND GUIDELINES THAT HAVE BEEN CONSIDERED :	23
7. DESCRIPTION OF ENVIRONMENTAL ISSUES & POTENTIAL IMPACTS, INCLUDING CUMULATIVE IMPACTS IDENTIFIED :	60
8. METHODOLOGY OF ASSESSING IMPACTS :	60
9. DESCRIPTION OF THE PUBLIC PARTICIPATION PROCESS :	61
10. LISTS OF PERSONS, ORGANISATIONS AND ORGANS OF STATE REGISTERED AS I&APS	70
11. PLAN OF STUDY OF THE EIA :	70

TABLES AND APPENDICES

TABLES

Table 1:	Inputs for the Existing Plant
Table 2:	Outputs for the Existing Plant
Table 3:	Inputs for the Expansion Project
Table 4:	Outputs for the Expansion Project
Table 5:	Issues and Concerns Response Table

APPENDICES

Appendix 1:	Map 1 – Locality Map
	Map 2 – Context Map
	Map 3 – Land Use Map
	Map 4 – Site Plan
	Map 5 – Ward Context
Appendix 2:	Plate 1 – Plant Expansion in Context of Existing Plant (External)
	Plate 2 - Plant Expansion in Context of Existing Plant (Internal)
	Plate 3 - Schematic Diagram of the Vessels within the Building
Appendix 3:	CV's
Appendix 4:	Process Vessel & Process Flow Diagram
Appendix 5:	Public Participation Documentation
	<ul style="list-style-type: none">• Site Notices• Advertisements• Background Information Document• Minutes and Presentation of the Public Meeting
	<ul style="list-style-type: none">• Attendance Register• Correspondence with I&AP's
Appendix 6:	I & AP List

1. Introduction :

Buckman Laboratories has experienced significant growth in production volumes over the last 2 years. They have identified potential new business opportunities. However, due to current constraints with high vessel occupancies, they are not in a position to effectively and efficiently meet customer needs.

The increased sales demand as per the projections for 2008 to 2010 necessitates an expansion in production capacity.

The increase in sale requirements will result in Buckman running out of vessel capacity, thus impacting on its ability to meet the customer requirements and to sustain its business.

Buckman's main customers are Mondi, Sasol, Sappi, Mittal, Kimberly Clark, Columbus Stainless Steel, Eskom, Municipal Potable Water Treatment and Richards Bay Minerals. These customers are growing and expanding and if Buckman is not in a position to supply its products in time, there could potentially be a significant impact on their production output, depending on the particular application.

According to Buckman, if nothing is done to improve the current facility in order to cater for future growth, the company will be out of business and 240 people will be out of employment, thereby impacting on over 1000 people, assuming each family consists of 4 people.

Accordingly, the installation of 3 processing vessels of bigger capacity is proposed, as it would be inefficient to run 2 batches concurrently in smaller vessels, thereby causing the following constraints:

- Increasing the possibility of contamination in the bulk tanks
- Increasing liquid emissions
- Creating bottlenecks with tanker availability and reduced service levels to customers
- Creating a negative impact on the ability to pursue new business opportunities and to grow the business

From a business continuity viewpoint, Buckman have contractual agreements with some customers, whereby the current high vessel occupancy puts the business at risk if they have a prolonged vessel downtime – thus impacting on the ability to meet customer requirements.

In terms of potential claims from a paper customer for downtime, a paper machine produces 40 tons per hour at a cost of about R4000 per ton, which will result in a loss/claim per hour of ZAR 160, 000, just from one customer. This equates to a potential liability amount of ZAR 3,840,000 /day (R3, 8m) that Buckman could incur.

Accordingly, Buckman proposes to expand their existing plant at Hammarsdale to cater for growing need and customer demand.

To expand the current production facility, Buckman propose to include 3 x 25 000 litre processing vessels with bulk handling capabilities.

It will consist of two non-pressure vessels and one pressure rated vessel (3200 kPa) with heating and cooling capabilities as well as a hoist and hopper mechanisms to handle bulk bags.

The process involves adherence to Buckman Laboratories standard operating procedures (recipes) which entails liquid with other liquids, powders with liquids, liquids with liquids, liquid, wax and powder blends and reactions. The process will be carried out at ambient and high temperatures (= or > 165 ° C) and under atmospheric and elevated pressures (= or < 2800 kPa).

The recipe calls for agitation with stipulated periods of time with heating or cooling at certain stages of the manufacturing process. Some of the reactions are carried out under temperature and pressure control.

All the vessels will be equipped with automated safety interlocks namely, high/high and low/low pressure and temperature alarms as well as a manual double check during the manufacturing process. The vents will be connected to a scrubber system to prevent any material from entering the atmosphere.

Having the processes automated will reduce the cycle times for each batch reducing noise levels, and vessel charging times. By converting from 25 kg bags to one ton bags, the packaging will be reduced by 44 % which will be recycled. By automating the rinsing out of vessels the liquid waste will be reduced by 30 %. The intention is to have a positive impact on the occupational health and safety by moving to 500 – 1000 kg bulk bags for powders.

1.1. The Current Operations :

The Tables below provide information on the current plant that is operational.

Table 1: Inputs for the Existing Plant:

Chemical Description	Total Volume in Tons per Annum
Copper(II) sulphate pentahydrate	900
(1-Hydroxyethylene) Diphosphonic Acid	48700
1,2,3 propanetriol	7000
1,2-Ethanedione; Ethandial	273000
1.4-Dihydroxybenzene reducing agent	300
1-Octadecanol	2050
2-(2-Butoxyethoxy) ethanol	5548.32
2-(thiocyanomethylthio)benzothiazole Bactericide	36000
2.2Dibromo-3-nitrilopropionamide	15300
25% Ammonia solution	3980
2-hydroxyethylamine	16640

2-Phosphonobutane-1,2,4-tricarboxylic acid	37000
9,10 anthracenedione	84000
99% Ammonium persulphate	3700
Aliphatic amide deposit cleaner	8740
Aliphatic amide monomer	108000
Alkali hydroxide	144000
Alkali hydroxide	70000
Alkali hydroxide solution	169520
Alkenyl succinic anhydride based surfactant	1098
Alkoxylated alcohol	107000
Alkylphenol Polyethleneglycol	158000
Aluminium trialkoxide	4344
Aminocyclohexane; Hexahydroaniline	6650
Ammonium salt	222600
Amorphous fumed silica	60
Amorphous Silicone dioxide	6005
Anionic polyacrylamide flocculent	200
Aqueous solution of aliphatic amide	410000
Aromatic petroluem distillate	62656
Benzyl chloride	32760
Calcium lignosulphonate	6250
Carbon disulphide - reducing agent	80000
Cationic polymer in solution	6804
Cetyl-Stearyl Alcohol	130
Coconut oil extract - diethanalomide	12800
Denatured industrial ethanol	12037.6
Di sodium phosphate	100
Diallyldimethylammonium Chloride	170560
Dichloroethyl ether	27442.8
Dicocodimethylammonium / 2-propanol	350
Diethylene glycol	48090
Diethylene triamine tetrat acetic acid	62400
Dimethylamine	982720
Dimethylaminopropylamine	7800
Dimethylpolysiloxane	10000
Diocetyl sodium sulfosuccinate	44520
Di-protic acid	7000
Disodium molybdate dihydrate	23100
Dodecylamine	4340
Epichloro hydrin	904360
Ethancarboxylic acid	28198
Ethoxylate/sulfonate derived surfactant	4000
Ethylene bis(stearamide) wax Intermediate in Defoamer production	650
Ethylene diamine	24015.3
Ethylene diamine tetra acetic acid -Complexing agent	105000

Ethylene Glycol Monobutyl Ether	16560
Fatty acid /alcohol based wax	73920
Fatty alcohol polyglycol	4760
Formaldehyde	19360
Gluconic acid sodium salt	5600
Glutaraldehyde	50850
Glycerol Tristearate	2376
Glycol monostearate - emulsifying agent	12700
Hexylene Glycol	46620
Hydratea Aluminium sulphate	60020
Hydrocarbon base fatty acid	2604
Hydrocarbon based mineral oil	982120
Hydrocarbon wax	960
Hydrochloric acid	19036
Hydrogenated Castor Oil	5500
Hydroxyethyl cellulose – polysaccharide	2900
Hydroxytricarboxylic Acid	33700
Iron (II) salt - redox catalyst	27000
Isothiozoline based bacteriacide	122360
Lauramine oxide based surfactant	10
Linear alkyl benzene sulphonic acid	400
Maleic acid copolymer	36000
Methanoic acid	9150
methyl carbitol	56866.08
Methyl Phosphonic Acid	121200
Methylene dithiocyanate	12300
Mineral seal oil	60520
Modified ethoxylate	1900
Monoethylen glycol	920
Monomethylamine; Aminomethane	15480
Monoprotic acid	10626
Monoprotic carboxylic acid	21930
N,N,N-polyoxyethelene-Ntallow -1,3diaminopropane	3200
N.N-dimethly C12-14 alkyl amine	51200
Neutralised Polyacrylic Acid	21160
Nonyl phenyl ethoxylate	115190
n-propanol - chain transfer agent	9660
Organic based bacteriacide	4800
Organofunctional siloxane	17280
Oxoalcohol C13+9 mol	1140
Petroluem hydrocarbon blend	168930
Phosphoric acid	176292
Polyacrylamide monomer	4000
Polyacrylate type thickner	81500
Polyacrylic acid dispersing agent	206000

Polyaluminium chloride	129960
polyamine condensation product	8880
Polyethylene glycol	81260
Polyethylene glycol-20-stearate	8120
Polymethyl disiloxane compound	139200
Polyoxymethylene	5600
Polysaccharide Gum - rheology modifier	3680
Polysorbate 20; Ethoxy(20)Sorbitan Monolaurate emulsifying agent	400
Propylene glycol	840
Propylene glycol mol wt of 2000 Food grade	21000
Secondary carboxylic acid	80000
Sodim hexametaphosphate	1400
Sodium aluminate	1170
Sodium carbonate	32100
Sodium metabisulphite	425800
Sodium Nitrate	39700
Sodium salt of dodecylbenzene sulphonic acid	2000
sodium tripolyphosphate	10700
sodium xylene sulphonate	31200
Soya bean oil	1193620
Styrene acrylic co-polymer	12400
Substituted ethanediamine	20326.4
Substituted tolylsulfone	817.2
Sulphuric acid -diprotic	434920
Surfactant - based emulsion	32000
Tall oil fatty acid	3348
Tetrahydro-1.4-oxazine	8000
Tetrasodium pyrophosphate	100
Zinc (II) chloride solution- weak bactericide	135000
TOTAL	10,178,561

Table 2: Outputs for the Existing Plant:

Chemical Description	Total Volume in Tons per Annum
A biodispersant comprising of acids and quaternary ammonium compound	121032
Acidified solution of corrosion inhibitor	1002
Alkaline cleaner	51562
Amide based polymer	99652
Amorphous silica in Hydrocarbon mineral oil	12012
Amorphous silica in silicone oil	20002

Anthraquinone slurry	187292
Aqueous blend of two quaternary ammonium salts	27600
Blend of a polyacrylate and phosphonate	8002
Blend of a polyamine and inorganic polymer	20346
Blend of a surfactant and inorganic corrosion inhibitors	34282
Blend of an acid with inhibitor	80006
Blend of carbon and sulphur compounds	26764
Blend of esters in an alkaline medium	139656
Blend of Glycol ester and block co-polymer	28072
Blend of Isothiazoline derivatives and a quaternary ammonium salt	38184
Blend of Isothiazoline derivatives and a soyabean oil derivative	58656
Blend of quats	120250
Blend of surfactants in an alkaline medium	262474
Citric acid	57746
Cold blend of quaternary ammonium salt and surfactant	21058
Combination of amides, dispersants and acids	14002
Combination triazine, formaldehyde product	19912
Dilute solution of Isothiazoline derivatives	160536
Dilution of a sulphur based wetting agent	2002
Dilution of an amide derived fatty acid	72516
Dilution of a bromine compound	108428
Dilution of a complexing agent	80020
Dilution of a ketone	12022
Dilution of a naturally occurring acid	52194
Dilution of a non-ionic surfactant	500230
Dilution of a phosphate compound	66166
Dilution of an amine	96680
Dilution of cellulose	69342
Dilution of sodium metabisulphite	1410862
Dithiocarbamate	38834
Enzyme extended in a non-ionic surfactant	2002
Ester	4002
Ethylene bistearamide	3642
Ethylenebistearamide extended in hydrocarbon mineral oil	60820
Ethylenebistearamide extended in oil	127752
Fatty alcohol extended in mineral oil	333410
Fatty alcohol extended in water	647594
Glutaraldehyde in water	162000
Glycol ester extended in glycerine	15362
Glycol ester extended in Hydrocarbon mineral oil	698398
Glycol ester in mineral oil	34016
Inhibited acid	2002
Isothiazoline in water	743854
low MW highly cationic water-soluble polyquat	69970
Methylene bithiocyanate in aromatic solvent	4002

Molydate	87856
Phosphonated blend of an acrylic acid co-polymer	177206
Phosphoric Acid with an inhibitor	152968
Poly glycol ester	130508
Polydimethylsiloxane extended in water	850328
Potassium based alkaline solution	219644
Quaternary Ammonium compound	402750
Reacted acid amine terpolymer	1048238
Reacted glyoxylated polyacrylamide	5978264
Reacted polyacrylamide compound	79766
Reacted polyamide strength additive	562398
Reacted product of an acid and a base - used as an intermediate	198932
Reaction of a Epichlorohydrin resin with an amine neutralised adipic acid precursor	16002
Reaction between a carboxylate/sulphonate copolymer and hydrochloric acid	137276
Reaction between a carboxylate/sulphonate copolymer and phosphoric acid	103848
Reaction between a polyacrylate and substituted phosphonic acid	5056
Reaction of amines with an unsaturated fatty acid	1317826
Reaction of carbon and sulphur compounds	487846
Reaction of cationic co-polymers	295738
Reaction of substituted sulphosuccinate, sulphonic acid and a soyabean oil derivative	269746
Solution of a quaternary ammonium salt for sludge treatment	80852
Solution of an inorganic coagulant	394038
Solution of chelating agent	241644
Solution of polyamine derived polymers for water treatment	259244
Solution on a polyacrylic acid	6002
Synergistic blend of dispersants in an acidic medium	112372
Synergistic blend of a glycol ester with a quaternary ammonium compound	1702
Synergistic blend of a lignosulphonate with an acrylic copolymer	24080
Synergistic blend of a phosphonocarboxylic and maleic anhydride copolymer	8098
Synergistic blend of a polyacrylate copolymer and maleic anhydride copolymer	841184
Synergistic blend of a polyamine and inorganic coagulant	331148
Synergistic blend of acids and surfactants	1202
Synergistic blend of amide derivatives	144000
Synergistic blend of amine derivatives	6072
Synergistic blend of amines	38954
Synergistic blend of an amine and a ketone	21722
Synergistic blend of anionic surfactant and substituted sulphonic acid	20002
Synergistic blend of anti scalants	10002

Synergistic blend of carbonate, molybdate and nitrite	106888
Synergistic blend of cleaning agents	1052256
Synergistic blend of degreasers in an alkaline medium	29980
Synergistic blend of degreasers in mineral seal oil	105876
Synergistic blend of degreasers in water	99148
Synergistic blend of dimethylamine and epichlorohydrin copolymer	2331704
Synergistic blend of dimethylamine, epichlorohydrin copolymer	26504
Synergistic blend of dispersants and surfactants	45416
Synergistic blend of dispersants and surfactants in mineral seal oil	381030
Synergistic blend of glycol ester in hydrocarbon mineral oil	120890
Synergistic blend of metallic coagulents	41340
Synergistic blend of nitrites and carbonates in an alkaline medium	798124
Synergistic blend of phosphates and co-polymers	20318
Synergistic blend of phosphates in an alkaline medium	7980
Synergistic blend of phosphorous based products	502
Synergistic blend of sulphites and sulphates	26114
Synergistic blend of surfactant in mineral seal oil	111838
Synergistic blend of surfactants	36058
Synergistic blend of surfactants and amide derived fatty acid	15022
Synergistic blend of surfactants and degreasers in water	1071886
Synergistic blend of two quaternary ammonium salts	146474
Synergistic blend of zinc compounds	81078
Synergistic blend of zinc, polyacrylate, and phosphonate compounds	54854
Synergistic of surfactants	15956
TCMTB in aromatic solvent	387420
TCMTB in solvent	4990
Tolytriazole	7702
Zinc compound containing acids	112748
Total	29,332,832

Appendix 1 indicates the following:

Map 1 indicates the Context Map

Map 2 indicates the Locality Map

Map 3 indicates the Site Plan

Map 4 indicates the Surrounding Land Uses

Map 5 indicates the Ward Context

2. Details of the Environmental Assessment Practitioner (EAP):

Pravin Amar Development Planners were appointed by Buckman Laboratories to undertake the EIA on its behalf. He is assisted by Mr. A. Childs, a qualified chemist as a specialist examining the chemical inputs, process and the outputs.

Name of Consultant / Company:	Pravin Amar Development Planners
Contact person:	Mr Pravin Amar Singh – BA (MTRP), IEM (UCT) LLM (Environmental)
Telephone:	(031) 201 7510
Facsimile:	(031) 201 8939
Email address:	md@pravinamar.com

The EAP has extensive experience in environmental management including inter alia environmental impact assessments; project management and developing planning.

The CV of EAP and the specialist are attached as Appendix 3.

2.2. SPECIALISTS / PROFESSIONAL TEAM

The specialists and professional team appointed on the project are all qualified and/or experienced in their respective fields.

Field	Name Of Specialist	E-Mail Address
Project Manager	Daryl Govender (Buckman Laboratories)	dmgovender@buckman.com
Civil & Structural Engineer	Anderson Engineering	mail@andersoneng.co.za
Electrical & Electronic Engineers	Anderson Engineering	mail@andersoneng.co.za
Legal (Environmental and Development Planning)	Rommel Naidoo and Associates	rommelnaidoo@worldonline.co.za

3. Description of the proposed activity and reasonable alternatives

3.1. Proposed Project

The project is an expansion of the existing facility that has been in existence since 1979, to increase the current production facility to include 3 x 25000 litre processing vessels with bulk bag handling capabilities, which will cater for the immediate increased sales volumes and for future growth. The site will also consist of a 20000 litre storage/feedtank.

The expansion will consist of two non- pressure process vessels and one pressure rated vessel (3200 kPa) with heating and cooling capabilities as well as a crane and hopper facilities to cater for bulk bag handling.

The proposal will address the demands for the next 3 years by creating the additional vessel availability to cater for the new sales growth. The installation of the new processing vessels will also manage the business risks and ensure continuity of supply.

Conversion of the existing production “staging” area which is in front of the manufacturing plant and increasing the building height by 5m. The area in this facility will be approximately 650m².

Table 3: Inputs for the Expansion Project:

Raw Material Chemical Description	Total Vol in Tons	Comments
Copolymer of Acrylamide/diallyldimethylammonium chloride quart	1431	New Volumes
Diformaldehyde	456	New Volumes
light petroleum oil	1410	New Volumes
glycol ester	110	New Volumes
polyethylene wax	24	New Volumes
hydrogenated castor oil	8	New Volumes
Ferrous Sulphate	25	Reallocation from Current Plant
Acrylamide/Acrylic acid copolymer	157	Reallocation from Current Plant
polymaleic acid	63	Reallocation from Current Plant
Sodium Bisulphite	440	Reallocation from Current Plant
Sodium Molybdate	2	Reallocation

		from Current Plant
Sodium Nitrite	20	Reallocation from Current Plant
Sodium Carbonate	32	Reallocation from Current Plant
Sodium Nitrite	193	Reallocation from Current Plant
polyoxypropylene-polyoxyethylene copolymer	78	Reallocation from Current Plant
mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	66	Reallocation from Current Plant
mixture of Decane, undecane, ethyl toluene, trimethyl benzene, dodecane, xylene, propylbenzene, tridecane, nonane	143	Reallocation from Current Plant
dimethylamine of soyabean oil	33	Reallocation from Current Plant
nonylphenol polyethylene glycol ether with 9 moles of ethylene oxide	18	Reallocation from Current Plant
Ester	14	Reallocation from Current Plant
Ethylene diamine tetra acetic acid	97	Reallocation from Current Plant
dimethylamine of soyabean oil	371	Reallocation from Current Plant
Diethylene glycol	59	Reallocation from Current Plant
nonylphenol polyethylene glycol ether with 12 moles of ethylene oxide	134	Reallocation from Current Plant
nonylphenol polyethylene glycol ether with		Reallocation from Current

9 moles of ethylene oxide	15	Plant
Ammonium Sulphate	243	Reallocation from Current Plant
Acrylamide/Acrylic acid copolymer	30	Reallocation from Current Plant
Epichlorohydrin	1143	New Volumes
Dimethylamine	885	New Volumes
soya bean oil	555	New Volumes
Dimethylamine	160	New Volumes
Totals	8416	

Table 4: Outputs for the Expansion Project:

Chemical Description	Total Vol/ Tons/ pa
Acrylamide/diallyldimethylammonium chloride quart copolymer	10 800
glycol ester extended in mineral hydrocarbo oil	1 090
Dilution of Ferrous Sulphate	222
A blend of polymaleic acid and an acrylamide/acrylic acid copolymer	785
Sodium Bisulphite	1 258
Blend of sodium molybdate and sodium nitrite	99
Blend of sodium carbonate and sodium nitrite	643
polyoxypropylene-polyoxyethylene copolymer	391
Dilution of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	566
Blend of Aromasol 22, Nonyl phenol ethoxylate and DMSO	194
Dilution of the ester	95
dilution of ethylene diamine tetra acetic acid	205
Epichlorohydrin-dimethylamine-ethyl diamine terpolymer	3 540
blend of ammonium sulphate and acrylic acid/acrylamide copolymer	810

dimethylamide dispersant	900
Totals	21598

Appendix 2 indicates pictures of the proposed plant.

Appendix 4 indicates the process vessel and the flow diagram.

3.2. Description of Reasonable Alternatives Evaluated

i. Replacement of Process Vessels

In April 2008, PV11 which is an 8000 litre vessel was decommissioned due to the integrity of the glass lining and the internal corrosion that has occurred due to the cracks in the lining.

Replacement of the vessel with a 10 ton vessel is not a feasible option as this will hinder future business growth and our ability to effectively and timeously meet customer demands. This also has a major negative impact in that that we have to manufacture a number of smaller batches resulting in loss of productivity, increased effluent generation and poor customer service delivery.

Replacement of the smaller vessels within the current facility, with 25 ton vessels, is not a viable option as the current plant layout is very congested and going this route would further complicate the space availability. It will also impact on flexibility to manufacture products that are required in smaller quantities. This will also increase the inventory holding and will require further capital expenditure to install bulk tanks and an additional bulk tank farm.

ii. Product Re-Allocation into Other Vessels

Buckman has evaluated the re-allocation of products into other vessels to cope with the demand. The net impact of the increased demands is that Buckman are out of vessel capacity to effectively grow the business and consistently meet customers' needs. Customers are operating on a "Just In Time" (JIT) system and are demanding products with a short lead time (in as little as 5 days) which does not allow for much room for flexibility.

iii. Bulk Bag Handling

The current layout of the plant does not make it feasible to include the structural requirements to handle bulk bags. The roof of the building is too low and the piping configuration is very congested. This will require the reconfiguration of the existing piping and to increase the roof height. This will result in a large capital expenditure requirement and substantial vessel downtime, increasing the current constraints experienced with the vessel availability. This will have a negative impact on the ability to timeously meet customer requirements.

iv. Sourcing from Associate Companies

This is not a feasible option due to the costs associated with shipping these products which will dilute the profitability of the company. Also, due to large volumes, logistics, and costs involved, purchasing from associates companies have the following negative impacts:

- Negative impact on the Cost of Goods, Gross Profit, profitability and free cash flow.
- Increased stock holding of high volume products - importation from Americas or Europe or Asia requires a lead time of 4 – 8 weeks
- Decreased customer service – this creates a logistics issue in terms of supply and demand
- Construction of added infrastructure (bulk tanks & warehouses) to cater for the long shipping time.

v. Toll Manufacturers

There are no suitable “Toll” manufacturers that have the equipment and infrastructure to cope with the high volumes. Also, the chemicals that are manufactured is proprietary information and unique to Buckman Laboratories

vi. Expansion Limitations

The congested layout of the current plant inhibits any further expansion within the same area due to a number of constraints:

- The current piping above the vessels is a maze which does not allow for the inclusion of powder handling (hopper) systems.
- Replacement of the smaller vessels with 25 ton vessels will result in further congestion of the current facility
- The height of the roof and the existing support structure for the roof is not sufficient to cater for bulk bag handling.

vii. Alternative Technology

The products manufactured in the Hammarsdale site is highly specialized and contains proprietary information with the latest technology for the specific application of the product to improve the customers output. The products manufactured are generally non-hazardous, environmentally friendly and safe to use. The vessels will be automated and have better handling and cleaning equipment thereby reducing waste and improving ergonomics.

Hence, Buckman can find no alternative technology that can better achieve the products manufactured by Buckman. This is vindicated by the increased customer demand and market domination in its propriety products.

4. Description of the Property on which the activity is to be undertaken:

Buckman Laboratories is located in semi industrial area of Hammarsdale. The Plant comprise of numerous process buildings and storage facilities. The location of this plant is provided in the drawings, Appendix 1.

The Buckman Laboratories' site is located on a hill and at the west is the valley and a river and a dam. To the north and south the land slopes and is slightly downwards. The nearest residential is to east/rear of this property.

Buckman Laboratories is located on:

- Sub 9 of Lot 11 Sterkspruit 1609
- Sub 10 of Lot 11 Sterkspruit 1609
- Rem of Sub 6 of Lot 11 Sterkspruit 1609
- Sub 8 of Lot 11 Sterkspruit 1609
- Sub 11 of Lot 11 Sterkspruit 1609

The proposed development is geographically positioned at Latitude: 29°48'27, 3"S and Longitude 30°39'31, 9"E.

The site is zoned for general industrial 2 and the surrounding land uses include motor engineering, residential housing, textile and plastic production.

The Buckman Laboratories Plant manufactures a variety of special chemicals. The plant is divided into number of small buildings. These buildings are used for:

- Administration Offices
- Storage Warehouse
- Process plant
- Bulk storage tanks
- Workshops

Manufacturing occurs in the production area which contains a number of blending vessels. A large number of storage tanks on site, store raw materials and finished goods.

Diagrams illustrating Buckman Laboratories and the site in relation with all other land uses, is provided in Appendix 1

A variety of chemicals are used and stored in this plant. Some of the chemicals are stored in bulk containers, whilst others used, are in drums and/ or in bulk tanks.

Appendix 1 provides the relevant maps of the site.

5. Description of the environment that may be affected :

a. Physical and Biological :¹

i. Temperature and rainfall

In summer very high temperature in excessive of 35⁰ C can occur, whilst in winter temperature can be as low as (4⁰ C) at times.

ii. Wind Speed and Direction.

Buckman Laboratories is located on a hill with a large valley. Therefore, the prevailing wind direction is north- north-east and south to south west.

Wind speeds are generally moderate to bricks at an average of below 20 K/ph.

There are also a high percentage of wind calm days in the year mostly in winter and also calm periods during the evenings. In winter and periods outside of winter inversion occurs. This is regular and only clears later on in the day if no wind occurs.

iii. Natural Drainage/ terrain

The natural fall from this plant is towards the river and down below. Points of use of chemicals and storage of chemicals in the yard indicate that any vapour cloud release, will flow down towards the plant boundary and thereafter to the river.

b. Social & Economic :

The site of the proposed activity falls between two wards, i.e. Ward 4 and Ward 6 but predominantly in Ward 4.

The ward councillor for Ward 4 is Mr. Dennis Mzwamasoka Shozi. Buckman Laboratories is located to the far south of Ward 4 on the boundary with Ward 6.

The following tables contain important information on Ward 4.

¹ Information cited from the MHI Risk Assessment undertaken by Occutech, 2003.

Age		%
Age 0 -4	3 885	11
Age 5- 14	8 875	24
Age 15 – 34	13 547	37
Age 35 – 64	8 711	24
Age >65	1 531	4

Dwelling Type				
Number of House holds	Formal	Informal	Traditional	Other
7081	3 712	182	3 025	162
%	52	3	43	2

Employment Status		
	15 – 65 years	%
Employed	6 135	27
Unemployed	8 075	36
Not Economically active	8 192	37

Delivery of Basic Household Services									
Electricity	%	Refuse disposal	%	Flush Toilets	%	Water in Dwelling	%	Water< 200m	%
5135	70	826	11	1191	26	4155	57	783	11

Overall, this is a ward that has low delivery of services and a high percentage of unemployment, leading to the conclusion that this is a disadvantaged community. However, many live in formal housing and only a few in an informal settlement.

The following tables contain important information of Ward 6.

The site of the proposed development is located in the far north of Ward 6

The ward councillor for Ward 6 is Mr. Lucky Nhlanhla Mngwengwe.

Age		%
Age 0 -4	3 668	10
Age 5- 14	7 936	22
Age 12- 34	14 121	39
Age 35- 64	8 945	25
Age >65	1 261	4

Population	35 932	%
African	35 870	99
Coloured	32	0
Indian	3	0
White	27	0
Pensioners	1 261	4
Disabled	1 493	4
Male	16 924	47
Female	19 008	53

Dwelling type		
Number of households	7 383	%
Formal	6 635	90
Informal	433	6
Traditional	310	4
Other	5	0

Household Income (pa)	Household	%
No income	2 394	32
R1 – 4 800	265	4
R4 801 – R 9 600	1 279	17
R9 601 – R19 200	1 442	19
R19 201 – R38 400	1 276	17
R38 401 – R76 800	580	8
R76 801 – 153 600	148	2
R153 601 – 307 200	35	0
R307 201 – 614 400	7	0
R 614 401 – 1 228 800	1	0
R1 228 801 – R2 457 600	8	0
R2 457 601 and more	4	0
Work Status	15 – 65 years	%
Employed	5 457	24
Unemployed	10 077	43
Not Economically Active	7 644	33
Literacy Ratio (Grade 7 and above)	18 630	52
Dependency Ratio		7

Delivery of Basic Household Services									
Electricity	%	Refuse disposal	%	Flush Toilets	%	Water in Dwelling	%	Water < 200m	%
5 638	76	5 400	65	5 367	72	6 407	86	399	5

Major Community Facilities located in the ward Include:	
Library	1
Clinics	0
Police	1
Hospital	0
Pension pay points	1
Billing points	0
Metro police	1
Fire stations	0
Community halls	1
Post office	0
Schools	14

Approved Capital Projects (R million)				
Project	Type Task	2007/2008	2008/2009	2009/2010
Cleansing and solid Waste Operations	1.8	0.0	0.0	0.0
Engineering Roads	0.1	0.0	0.0	0.0

The general assessment of Ward 6 is that it has the typical former black group area profile i.e. with high levels of unemployment and lacking many essential major community facilities such as a clinic. However, service delivery is quite high and a vast majority live in formal housing.

6. Identification of legislation and guidelines that have been considered :

Buckman Laboratories (Lab) is subject to a wide range of constitutional and statutory duties that oblige it to take into account and be compliant with various laws.

The relevant legislation, guidelines, norms and standards referred to hereunder will accordingly apply to most if not all the activities conducted by Buckman Lab, but would (in any event) have to be considered in order for Buckman Lab to comply with all statutory requirements and regulations.

The Constitution of the Republic of South Africa Act 108 of 1996 reigns supreme. Consequently Buckman Lab is obliged to respect, promote, protect and fulfil the rights in the Bill of Rights. A failure to do so will render its actions invalid, making it subject to penalties.

In executing its obligations to the environment, Buckman Lab must take cognisance of Section 24 of the Bill of Rights of the need to protect the environment for the benefit of present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development.

The National Environmental Management Act, Act 107 of 1998 (“NEMA”) was promulgated in order to circumvent and or rectify inter alia the pollution and/or degradation of the environments resultant from certain industries.

A. Atmospheric Prevention Pollution Act 45 of 1965 (APPA)

The Environmental Health Services have advised that any emissions from the vessels are to be monitored carefully and that records are to be kept of all incidents where the boiler is responsible for smoke of a shade darker than No. 2 Ringelman.

In determining the applicability of APPA hereto, to a greater or lesser extent:

- (a) the overall processing operation produces various emissions and forms of waste;
- (b) that the aforesaid would in turn give rise to various odours caused by these gaseous emissions;
- (c) that the “bulk bags” will be placed on a discharge cane (which in turn is rubber lined) to prevent the emission of dust particles into the atmosphere
- (d) the utilisation of sulphates and other chemicals in the process (which in turn could produce a number of chemical waste products) may constitute a scheduled process as envisaged by the second schedule to APPA

The new vessels will be connected through a pipe to a scrubber system/unit containing acid and alkali, which would remove any impurities from the gas being released into the atmosphere – assuming that accordingly there will be little (if any) atmospheric emissions and/or pollutions as such.

In addition, Buckman Lab has employed the services of authorised and experienced “outlet controllers” who in turn will dispose thereof [solid packaging waste] by means of incinerators at some other location. The liquid waste will also be treated at a biological plant at some other location. In addition Buckman Lab’s entire operating site is to a large extent automated, with minimum human handling and contained, any spillage therefore will not leave the area.

Despite this precautionary measure, the laws and regulations referred to will still require compliance in the event of any consequential, negligent or unforeseen spillage or emission that might result in any form of pollution.

Buckman Lab has confirmed (see summary of issues and concerns submitted by interested affected parties and Buckman Lab's reply thereto) that there will be no pollution emanating from the operation of the facility, and in turn accordingly no harm will be caused to the ozone layer.

There are various chemicals utilised in the processing vessels; therefore Buckman Lab needs to have regard to the second schedule of the "Scheduled Processes" attached to APPA as it is relevant. There are 72 Scheduled processes set out; however only the schedule processes that bears relevance to Buckman Lab is accordingly set out hereunder:

"Second Schedule

SCHEDULED PROCESSES

[Second Schedule amended by Government Notice No. 819 of 27 May, 1966, by Government Notice No. 1173 of 5 July, 1968, by Government Notice No. R.1864 of 30 October, 1970, by Government Notice No. R.5 of 7 January, 1972, by Government Notice No. R.212 of 16 February, 1973, by Government Notice No. R.303 of 2 March, 1973, by Government Notice No. R.1020 of 21 June, 1974, by Government Notice No. R.2239 of 15 October, 1982, by Government Notice No. 1353 of 26 June, 1987, by Government Notice No. R.1702 of 7 October, 1994, by Government Notice No. 420 of 15 March, 1996 and by Government Notice No. R.401 of 14 March, 1997.]

- 1. Sulphuric acid processes: That is to say, processes for the manufacture of sulphuric acid or processes in which sulphur trioxide is evolved or used.*

- 5. Ammonium sulphate and ammonium chloride processes: That is to say, processes for the manufacture of ammonium sulphate or ammonium chloride.*

- 8. Sulphide processes: That is to say, chemical processes in which hydrogen sulphide is evolved or used.*

- 43. Ammonia processes: That is to say, processes in which ammonia is-*
 - (a) made; or*
 - (b) used in the ammonia-soda process; or*
 - (c) used in the manufacture of carbonate, nitrate or phosphate of ammonia or urea.*

Should it be established that Buckman Lab carries on the scheduled processes listed above, regard must be had to Section 9 and Section 10 of APPA. In terms of Section 9, no person may carry on a scheduled process within a controlled area without holding a registration certificate.

Section 10 thereof further provides for application for and issue of registration certificates and provisional registration certificates. This application shall be lodged with the chief officer in the prescribed form. The application will be granted and a registration certificate will be issued only if the chief officer is satisfied that;

- (a) the best practicable means are being adopted for preventing or reducing to a minimum the escapes into the atmosphere of noxious or offensive gases produced or likely to be produced by the scheduled process in question;
- (b) scheduled process in question may reasonably be permitted to be carried on in the locality affected, having regard to the nature of that process, the character of the locality in question, the purposes for which other premises in such locality are used and any other considerations which in his opinion have a bearing on the matter and;
- (c) the carrying on of that process in or on the premises in question would not adversely affect residents in the area or be in conflict with any town-planning scheme in operation or in course of preparation in respect of such locality.

Buckman Lab has installed on its premises a fuel burning appliance.

Compliance of Section 15 of APPA [Installation of fuel burning and Section 16 [Citing of fuel burning appliances and construction of chimneys] was required.

It is evident that Buckman Lab is compliant, as Buckman Lab has applied to the eThekweni Municipality for an approval and registration of fuel burning appliances and approval was given in terms of Section 15 and 16 of APPA and Section 3 of the Smoke Control Regulations for the following appliance as recorded in the approved Permit :

Permit period	: 15 April 2008 to 15 April 2009
Type of boiler	: Fire Tube Horizontal
Fuel used	: Diesel/HFO
Maximum sulphur content	: 0, 55%
Purpose of Boiler	: team generation
Boiler ID code	: 3414
Capacity of boiler	: 500 to 4700 kg per hour
Stack height	: 0,555m (above ground level)

The eThekweni Municipality required the following to be complied with:

- (b) all boiler operators are to be trained in combustion principles and practice to ensure correct combustion;
- (c) emissions are to be monitored and the management thereof is to be incorporated into the business environmental management system;
- (d) records are to be kept of all incidents where the boiler is responsible for smoke of a shade darker than No. 2 Ringelman. Details to be recorded include the date and time of the incident, the reason for excessive smoke and actions to be taken to eliminate the problem. In this regard it was recorded that it is not permitted to emit smoke of a darker shade than No. 2 Ringelman for an aggregate period exceeding three minutes during any continuous period of thirty minutes;
- (e) Buckman Lab is to advise the eThekweni Municipality in writing if any changes being made to the boiler (including the fuel used) that may create an adverse impact on the environment.

Buckman Lab will have to accordingly:

- (a) compile a training manual relating to combustion principles and practices which manuals will have to be handed to all boiler operators – a training course will obviously be preferable;
- (b) a register is to be kept recording:
 - (i) all emissions, including remedial steps undertaken to reduce same;
 - (ii) all incidents where the boiler is responsible for smoke of a shade darker than No. 2 Ringelman (details are to include date and time of incident, reason or explanation and remedial steps undertaken to eliminate problem)

Buckman Lab must take cognisance of the consequences should their conduct in future cause them to be non-compliant and in turn cause a nuisance.

In this regard Sections 17[Procedure where smoke or other products of combustion cause nuisance] Section18 [Smoke Control Regulations] and Section19 [Procedure in event of contravention of Regulations] should be noted.

Sections 28 to 33 of APPA provide and inter alia deal with the issues of prevention of pollution and regard needs to be had to the following:

“28. Steps to be taken by certain persons for preventing atmospheric pollution by dust.

(1) Any person who in a dust control area...—

shall take the prescribed steps or (where no steps have been prescribed) adopt the best practicable means for preventing

such dust from becoming so dispersed or causing such nuisance.

- (2) *For the purposes of subsection (1) the expression “best practicable means” includes in any particular case any steps within the meaning of that expression as defined in section one which may be determined by the chief officer and specified in a notice signed by him and delivered or transmitted by registered post to the person who is in terms of the said subsection required to adopt such means.*
- (3) *Any person who fails to comply with the provisions of subsection (1) shall be guilty of an offence.*

It appears that Buckman Lab will have to deal with the emission of dust and consequently smoke will be emitted from time to time.

Atmospheric pollution by smoke is dealt with in part 3 of APPA. The definition and term “smoke” is defined as including “soot, grit, and gritty particles emitted in smoke”. The definition section also includes a definition of “dark smoke”.

With regard to smoke control, local authorities are empowered to make regulations concerning smoke control and may prohibit the use thereof in contravention of or which do not comply with the regulated standards.

The reference to “dark smoke” can be defined by reference to the rather rudimentary chart showing the difference shadings which appears as Schedule 1 of APPA.

The control of dust pollution lies mainly in the national Department of Environment Affairs and Tourism, through the Chief Air Pollution Officer (the CAPCO). This is in contrast to smoke control which is referred to hereinbefore is mainly controlled at local authority level.

Any person/entity which is carrying on any industrial process in a dust control area (usually declared by notice in the Government Gazette) which is in the opinion of the CAPCO likely to cause a nuisance to people in the vicinity on the account of such dust generated is required to adopt feasible means of preventing same.

The Hammarsdale area does not fall within a “dust” control area” and, as such it appears that the relevant legislative enactments will not be applicable at present.

B. National Environmental Management Act: Air Quality Act 39 of 2004 (AQA)

Buckman Lab must consider the law regulating air quality as it provides for national norms and standards regulating air quality monitoring, management and control. This Act seeks to

enhance the quality of ambient air, in order to secure an environment that is not harmful to the health or well-being of people.

The sections that Buckman Lab must have regard to are as follows:

Part 6: Measures in respect of dust, noise and offensive odours

32 Control of dust

The Minister or MEC may prescribe-

- (a) *measures for the control of dust in specified places or areas, either in general or by specified machinery or in specified instances;*
- (b) *steps that must be taken to prevent nuisance by dust; or*
- (c) *other measures aimed at the control of dust.*

34 Control of noise

(1) The Minister may prescribe essential national standards-

- (a) *for the control of noise, either in general or by specified machinery or activities or in specified places or areas; or*
- (b) *for determining-*
 - (i) *a definition of noise; and*
 - (ii) *the maximum levels of noise.*

(2) When controlling noise the provincial and local spheres of government are bound by any prescribed national standards.

35 Control of offensive odours

(1) The Minister or MEC may prescribe measures for the control of offensive odours emanating from specified activities.

(2) The occupier of any premises must take all reasonable steps to prevent the emission of any offensive odour caused by any activity on such premises.

"offensive odour" in Section 1 [definitions] means any smell which is considered to be malodorous or a nuisance to a reasonable person;

Section 36 to Section 49 sets out the licensing of listed activities, the application and procedure thereto.

Buckman Lab and its environmental assessment practitioners must consider Section 38(2), which provides that Section 24 of the National Environmental Management Act and section 22 of the Environment Conservation Act apply to all applications for atmospheric emission licences, and both an applicant and the licensing authority must comply with those sections and any applicable notice issued or regulation made in relation to those sections.

51 Offences

- (1) A person is guilty of an offence if that person-*
 - (a) contravenes a provision of section 22, 25 or 35(2);*
 - (b) fails to submit or to implement a pollution prevention plan as required by section 29(1) (b) or (2);*
 - (c) fails to submit an atmospheric impact report required in terms of section 30;*
 - (d) fails to notify the Minister as required by section 33;*
 - (e) contravenes or fails to comply with a condition or requirement of an atmospheric emission licence;*
 - (f) supplies false or misleading information in any application for an atmospheric emission licence, or for the transfer, variation or renewal of such a licence;*
 - (g) supplies false or misleading information to an air quality officer;*
 - (h) contravenes or fails to comply with a condition subject to which exemption from a provision of this Act was granted in terms of section 59.*
- (2) A person operating a controlled emitter is guilty of an offence if the emissions from that controlled emitter do not comply with the standards established under section 24(1).*
- (3) A person performing a listed activity is guilty of an offence if air pollutants at concentrations above the emission limits, specified in an atmospheric emission licence, are emitted as a result of that activity.*

52 Penalties

- (1) *A person convicted of an offence referred to in section 51 is liable to a fine, or to imprisonment for a period not exceeding ten years, or to both a fine and such imprisonment.*
- (2) *A fine contemplated in subsection (1)-*
- (a) *may not exceed an amount prescribed in terms of legislation regulating maximum fines for criminal offences; and*
 - (b) *must be determined with due consideration of-*
 - (i) *the severity of the offence in terms of its impact, or potential impact, on health, well-being, safety and the environment;*
 - (ii) *the monetary or other benefits which accrued to the convicted person through the commission of the offence; and*
 - (iii) *the extent of the convicted person's contribution to the overall pollution load of the area under normal working conditions.*

In accordance with Section 53 the Minister may make regulations that are not in conflict with this Act, regarding-

- (a) *any matter necessary to give effect to the Republic's obligations in terms of an international agreement relating to air quality;*
- (b) *matters relating to environmental management co-operation agreements, to the extent that those agreements affect air quality;*
- (c) *emissions, including the prohibition of specific emissions, from point, non-point and mobile sources of emissions, including motor vehicles;*
- (d) *open fires and incinerators;*
- (e) *ozone-depleting substances;*
- (f) *codes of practice;*
- (g) *records and returns;*
- (h) *labelling;*
- (i) *trading schemes;*
- (j) *powers and duties of air quality officers;*

- (k) *appeals against decisions of officials in the performance of their functions in terms of the regulations;*
- (l) *incentives to encourage change in behaviour towards air pollution by all sectors in society;*
- (m) *requirements in respect of monitoring;*
- (n) *the avoidance or reduction of harmful effects on air quality from activities not otherwise regulated in terms of this Act;*
- (o) *any matter that may or must be prescribed in terms of this Act; or*
- (p) *any other matter necessary for the implementation or application of this Act.*

In accordance with Section 54 the MEC's responsible for air quality may make regulations for the province concerned, not inconsistent with this Act.

Buckman Lab should take note of:

Section 62: Transitional provision regarding listed activities

Pending the listing of activities by the Minister in terms of Section 21, the processes identified in the Second Schedule of the Atmospheric Pollution Prevention Act must for the purposes of this Act be regarded as activities listed by the Minister in terms of that section.

Section 63: Transitional provision regarding ambient air quality standards

Until ambient air quality standards have been established in terms of Section 9, 10 or 11, the ambient air quality standards contained in Schedule 2 apply.

Schedule 2 relates to Ambient Air Quality Standards, setting out ambient concentrations of ozone, oxides of nitrogen, nitrogen dioxide, sulphur dioxide, lead, particulate matter with a particle size of less than 10 microns (m) in size (PM10) and total suspended solids and the levels that they may not exceed - parts per million measured at 25°C and normal atmospheric pressure measured at different time periods.

Buckman Lab has a duty to familiarise itself with the APPA and AQA and comply with all the provisions and requirements set out hereinbefore in respect of APPA and AQA.

c. SEA FISHERIES ACT (“SFA”), ACT 58 OF 1973 overlapping with NATIONAL WATER ACT, ACT 36 OF 1998 (“NWA”) (read in conjunction with the NATIONAL WATER AMENDMENT ACT, ACT 45 OF 1999).

Although it appears that none of Buckman Lab’s activities will be infringing on any of the legislation (and in turn Ordinances) in place in this regard (as the operating site is contained) Buckman Lab should take precaution in its activities and not to “pollute” water in the surrounding or immediate areas. It is recorded that the Hammarsdale dam is in close proximity to the site.

Per definition the aforesaid acts/ordinances serve to protect all waters (whether they permanently or at any time of the year form part of the sea – including tidal rivers) and inland waters such as rivers, dams, vleis, marshes and other forms of wetland.

D. WATER SERVICES ACT (“WSA”) ACT 108 OF 1997

The WSA recognises the right of access to a basic water supply and to an environment that is not harmful to health or well-being. WSA further regulates the industrial use of water, including the disposal of industrial effluent and sets out the requisite authority for such use.

Thus, while the NWA is concerned with the overall management and conservation of the nation’s water resources, the purpose of the WSA is to provide a regulatory framework for local authorities to supply water and sanitation services in their respective area. It does so by establishing local governments as “water service authorities” and placing certain responsibilities on them. The WSA states that its specific objective is to provide for:

- (a) the right of access to a basic water supply and the right to basic sanitation necessary **to secure sufficient water and an environment not harmful to human health and well-being;**
- (b) the setting of national standards and norms and standards for tariffs in respect of water services;
- (c) the preparation and adoption of water services development plans by water services authorities.

Although the WSA does not deal with issues of water resource management and allocation, the objective of the WSA is to provide such services in an environment not harmful to human health and well-being. It would accordingly only be important to consider the long term effects of any emissions from Buckman Lab’s business insofar as same might impact or adversely affect access to the utilisation of water storage or supply systems.

A commonplace consequence of the chemical industry or the operations conducted in respect thereof would be the contamination of land – i.e. land pollution. Liability for contaminated land has been extensively developed in other countries but at present, in

South Africa, it is still in its nascent stage. Buckman Lab is however cautioned to keep the consequences of such contamination in mind.

E. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, ACT 107 OF 1998 (NEMA) – INCLUDING REGULATIONS PROMULGATED THEREUNDER, REGULATION NO. R387 OF 2006.

Buckman Lab's activity has been identified as an "activity" listed in clause 1 (c), (e) and (g) of Regulation No.387 of 2006 and which specifically refers to:

- "(c) the above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of 1000 cubic metres or more at any one location or site including the storage of one or more dangerous goods, in a tank farm;"*
- "(e) Any process of activity which requires a permit or license in terms of legislation governing the generation or release of omissions, pollution, effluent or waste and which is not identified in Government Notice No. R386 of 2006."*
- "(g) the use, recycling, handling, treatment, storage or final disposal of hazardous waste."*

The activities of the proposed development falls within the ambit of the activities identified in terms of Section 24 (2) (a) and (d) of NEMA. As such Buckman Lab cannot commence with the development without obtaining an environmental authorisation from the competent authority. Furthermore the assessment, investigation and communication of the potential impacts of the activity must follow the procedure as set out in Regulations 27 to 36 of the Environmental Impact Assessment Regulations No. 385 of April 2006, which were promulgated in terms of Section 24(5) of NEMA.

The Environmental Impact Assessment report must contain all the information necessary for the competent authority to consider the application and make a decision. In this regard Buckman Lab and its Environmental Assessment Practitioner must accordingly refer to Section 32 (2) of Environmental Impact Assessment Regulations No.385 of April 2006.

Chapter 6 of Environmental Impact Assessment Regulations No.385 of April 2006. Particularly Section 56 requires the public to be informed of the application in order that interested and affected parties may be afforded the opportunity to participate.

Buckman Lab is cautioned to further carefully consider the contents of:

- (a) the Environmental Impact Assessment Regulations, 2006 (published in Government Notice Regulation 385 in Government Gazette 28753 of 21st April 2006; and
- (b) the Environmental Regulations for Workplaces (published under Government Notice R2281 in Government Gazette 10988 of 16th October 1987 (as amended and corrected thereafter)
- (c) the Scheduled Trades & Occupations Bylaws. Buckman Lab is to have careful regard to the provisions of Section 2 thereof.

F. HAZARDOUS SUBSTANCES ACT, ACT 15 OF 1973 (“HAS”)

The primary purpose of this Act, also administered by the Department of National Health is to provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitising or flammable nature or the generation of pressure thereby.

Moreover, it provides for the “..prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such products...”. The Act is accordingly not primarily a pollution control act, encase if the manufacture, use and so on, of hazardous substances is carried out properly, waste generation and pollution will not occur. However, it is indirectly concerned with waste management and pollution control, as is evident from the reference to the disposal and dumping of such substances in the long title.

Section 1 of the Act may apply (i.e. definitions) which defines “electronic products” as follows:

“electronic product” means—

- (a) *any manufactured product which, when in operation, contains or acts as part of an electronic circuit; and—*
 - (i) *emits (or in the absence of effective shielding or other controls would emit) electronic product radiation; or*
 - (ii) *would, as a result of the failure or breakdown of any built-in safety measure or shielding, pose an electrical, mechanical, chemical, biological, ergonomic or other hazard, or cause excessive temperature, excessive pressure or ignition of flammable material, which may cause injury, ill-health or death to human beings; or*
- (b) *any manufactured article which is intended for use as a component, part or accessory of a product described in paragraph (a) and which, when in operation—*
 - (i) *emits (or in the absence of effective shielding or other controls would emit) such radiation; or*

- (ii) *would, as a result of the failure or breakdown of any built-in safety measures or shielding, pose an electrical, mechanical, chemical, biological, ergonomic or other hazard, or cause excessive temperature, excessive pressure or ignition of flammable material, which may cause injury, ill-health or death to human beings..”*

G. HEALTH CARE ACT (HCA), ACT 63 OF 1977

During the operational phase Buckman Lab will have to ensure that it complies with all provisions of the HCA. One of the specified objectives of the HCA is to “provide for measures for the promotion of health for the inhabitants of the Republic of South Africa...”

The HCA specifically refers to the term “nuisance” which is defined in the definition part of the Act as follows:

- “(a) any stream, pool, marsh, ditch, gutter, watercourse, cistern, water closet, earth closet, urinal, cesspool, cesspit, drain, sewer, dung pit, slop tank, ash heap or dung heap so foul or in such a state or so situated or constructed as to be offensive or to be injurious or dangerous to health;*
- (b) any stable, kraal, shed, run or premises used for the keeping of animals or birds and which is so constructed, situated, used or kept as to be offensive or to be injurious or dangerous to health;*
- (c) any accumulation of refuse, offal, manure or other matter which is offensive or injurious or dangerous to health;*
- (d) any public building which is so situated, constructed, used or kept as to be unsafe or to be injurious or dangerous to health;*
- (e) any occupied dwelling for which no proper and sufficient supply of pure water is available within a reasonable distance;*
- (f) any factory or industrial or business premises not kept in a cleanly state and free from offensive smells arising from any drain, water closet, earth closet, urinal or any other source or not ventilated so as to destroy or render harmless and inoffensive as far as practicable any gases, vapours, dust or other impurities generated or so overcrowded or so badly lighted or ventilated as to be injurious or dangerous to the health of those employed therein or thereon;*
- (g) any factory or industrial or business premises causing or giving rise to smells or effluvia which are offensive or which are injurious or dangerous to health;*
- (h) any area of land kept or permitted to remain in such state as to be offensive;*

- (i) *any other activity, condition or thing declared to be a nuisance by the Minister in respect of the provisions of Section 39(2)."*

The aforesaid clearly illustrates the connection between the concepts of "environmental rights" and "human health".

The Act imposes various obligations on local authorities. As regard nuisance and related problems, it specially provides that:

"...every local authority shall take all lawful, necessary and reasonably practicable measures:

- (a) *to maintain its district at all times in a hygienic and clean condition;*
- (b) *to prevent the occurrence within its district of:*
 - (i) *any nuisance;*
 - (ii) *any unhygienic condition;*
 - (iii) *any offensive condition; or*
 - (iv) *any other condition which will or could be harmful or dangerous to the health of any person within its district...*
- (c) *to prevent the pollution of any water intended for the use of any inhabitants of its district, irrespective of whether such water is obtained from sources within or outside its district, or to purify such water which has become so polluted;...*
- (d) *..."*

Section 20 obliges local authorities to take reasonable and practical measures to maintain its district in a hygienic and clean condition and to prevent the occurrence within its district of "any nuisance" any unhygienic conditions, and "any offensive conditions".

H. OCCUPATIONAL HEALTH AND SAFETY ACT, ACT 85 OF 1993 ("OHSA")

The Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

Sections 7, 8(1), 8(2), 17, 18, 31, 38 and 43 of OHSA provide as follows:

- "7. **Health and safety policy.**
 - (1) *The chief inspector may direct-*

- (a) any employer in writing; and
- (b) any category of employers by notice in the Gazette,

to prepare a written policy concerning the protection of the health and safety of his employees at work, including a description of his organization and the arrangements for carrying out and reviewing that policy.

- (2) *Any direction under subsection (1) shall be accompanied by guidelines concerning the contents of the policy concerned.*
- (3) *An employer shall prominently display a copy of the policy referred to in subsection (1), signed by the chief executive officer, in the workplace where his employees normally report for service.*

8. **General duties of employers to their employees**

- (1) *Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.*
- (2) *Without derogating from the generality of an employer's duties under subsection (1), the matters to which those duties refer include in particular—*
 - (a) *the provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to health;*
 - (b) *taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment;*
 - (c) *making arrangements for ensuring, as far as is reasonably practicable, the safety and absence of risks to health in connection with the production, processing, use, handling, storage or transport of articles or substances;*
 - (d) *establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what precautionary measures should be taken with respect to such work,*

article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;

- (e) providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees;*
- (f) as far as is reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in paragraphs (b) and (d), or any other precautionary measures which may be prescribed, have been taken;*
- (g) taking all necessary measures to ensure that the requirements of this Act are complied with by every person in his employment or on premises under his control where plant or machinery is used;*
- (h) enforcing such measures as may be necessary in the interest of health and safety;*
- (i) ensuring that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and*
- (j) causing all employees to be informed regarding the scope of their authority as contemplated in section 37 (1) (b).*

17. **Health and safety representatives**

- (1) Subject to the provisions of subsection (2), every employer who has more than 20 employees in his employment at any workplace, shall, within four months after the commencement of this Act or after commencing business, or from such time as the number of employees exceeds 20, as the case may be, designate in writing for a specified period health and safety representatives for such workplace, or for different sections thereof.*
- (2) An employer and the representatives of his employees recognized by him or, where there are no such representatives, the*

employees shall consult in good faith regarding the arrangements and procedures for the nomination or election, period of office and subsequent designation of health and safety representatives in terms of subsection (1): Provided that if such consultation fails, the matter shall be referred for arbitration to a person mutually agreed upon, whose decision shall be final: Provided further that if the parties do not agree within 14 days on an arbitrator, the employer shall give notice to this effect in writing to the President of the Industrial Court, who shall in consultation with the chief inspector designate an arbitrator, whose decision shall be final.

- (3) *Arbitration in terms of subsection (2) shall not be subject to the provisions of the Arbitration Act, 1965 (Act No. 42 of 1965), and a failure of the consultation contemplated in that subsection shall not be deemed to be a dispute in terms of the Labour Relations Act, 1956 (Act No. 28 of 1956): Provided that the Minister may prescribe the manner of arbitration and the remuneration of the arbitrator designated by the President of the Industrial Court.*
- (4) *Only those employees employed in a full-time capacity at a specific workplace and who are acquainted with conditions and activities at that workplace or section thereof, as the case may be, shall be eligible for designation as health and safety representatives for that workplace or section.*
- (5) *The number of health and safety representatives for a workplace or section thereof shall in the case of shops and offices be at least one health and safety representative for every 100 employees or part thereof, and in the case of all other workplaces at least one health and safety representative for every 50 employees or part thereof: Provided that those employees performing work at a workplace other than that where they ordinarily report for duty, shall be deemed to be working at the workplace where they so report for duty.*
- (6) *If an inspector is of the opinion that the number of health and safety representatives for any workplace or section thereof, including a workplace or section with 20 or fewer employees, is inadequate, he may by notice in writing direct the employer to designate such number of employees as the inspector may determine as health and safety representatives for that workplace or section thereof in accordance with the arrangements and procedures referred to in subsection (2).*
- (7) *All activities in connection with the designation, functions and training of health and safety representatives shall be performed during ordinary working hours, and any time reasonably spent by*

any employee in this regard shall for all purposes be deemed to be time spent by him in the carrying out of his duties as an employee.

18. **Functions of health and safety representatives**

- (1) *A health and safety representative may perform the following functions in respect of the workplace or section of the workplace for which he has been designated, namely—*
- (a) *review the effectiveness of health and safety measures;*
 - (b) *identify potential hazards and potential major incidents at the workplace;*
 - (c) *in collaboration with his employer, examine the causes of incidents at the workplace;*
 - (d) *investigate complaints by any employee relating to that employee's health or safety at work;*
 - (e) *make representations to the employer or a health and safety committee on matters arising from paragraphs (a), (b), (c) or (d), or where such representations are unsuccessful, to an inspector;*
 - (f) *make representations to the employer on general matters affecting the health or safety of the employees at the workplace;*
 - (g) *inspect the workplace, including any article, substance, plant, machinery or health and safety equipment at that workplace with a view to the health and safety of employees, at such intervals as may be agreed upon with the employer: Provided that the health and safety representative shall give reasonable notice of his intention to carry out such an inspection to the employer, who may be present during the inspection;*
 - (h) *participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace;*
 - (i) *receive information from inspectors as contemplated in section 36; and*
 - (j) *in his capacity as a health and safety representative attend meetings of the health and safety committee of which he is a member, in connection with any of the above functions.*

- (2) *A health and safety representative shall, in respect of the workplace or section of the workplace for which he has been designated be entitled to—*
- (a) *visit the site of an incident at all reasonable times and attend any inspection in loco;*
 - (b) *attend any investigation or formal inquiry held in terms of this Act;*
 - (c) *in so far as it is reasonably necessary for performing his functions, inspect any document which the employer is required to keep in terms of this Act;*
 - (d) *accompany an inspector on any inspection;*
 - (e) *with the approval of the employer (which approval shall not be unreasonably withheld), be accompanied by a technical adviser, on any inspection; and*
 - (f) *participate in any internal health or safety audit.*
- (3) *An employer shall provide such facilities, assistance and training as a health and safety representative may reasonably require and as have been agreed upon for the carrying out of his functions.*
- (4) *A health and safety representative shall not incur any civil liability by reason of the fact only that he failed to do anything which he may do or is required to do in terms of this Act.*

31. **Investigations**

- (1) *An inspector may investigate the circumstances of any incident which has occurred at or originated from a workplace or in connection with the use of plant or machinery which has resulted, or in the opinion of the inspector could have resulted, in the injury, illness or death of any person in order to determine whether it is necessary to hold a formal investigation in terms of section 32.*
- (2) *After completing the investigation in terms of subsection (1) the inspector shall submit a written report thereon, together with all relevant statements, documents and information gathered by him, to the attorney-general within whose area of jurisdiction such incident occurred and he shall at the same time submit a copy of the report, statements and documents to the chief inspector.*
- (3) *Upon receipt of a report referred to in subsection (2), the attorney-general shall deal therewith in accordance with the provisions of*

the Inquests Act, 1959 (Act No. 58 of 1959), or the Criminal Procedure Act, 1977 (Act No. 51 of 1977), as the case may be.

- (4) *An inspector holding an investigation shall not incur any civil liability by virtue of anything contained in the report referred to in subsection (2).*

38. **Offences, penalties and special orders of court**

- (1) Any person who—
- (a) *contravenes or fails to comply with a provision of section 7, 8, 9, 10 (1), (2) or (3), 12, 13, 14, 15, 16 (1) or (2), 17 (1), (2) or (5), 18 (3), 19 (1), 20 (2) or (4), 22, 23, 24 (1) or (2), 25, 26, 29 (3), 30 (2) or (6), 34 or 36;*
 - (b) *contravenes or fails to comply with a direction or notice under section 17 (6), 19 (4) or (7), 21 (1) or 30 (1) (a), (b) or (c) or (3), (4) or (6);*
 - (c) *contravenes or fails to comply with a condition of an exemption under section 40 (1);*
 - (d) *in any record, application, statement or other document referred to in this Act wilfully furnishes information or makes a statement which is false in any material respect;*
 - (e) *hinders or obstructs an inspector in the performance of his functions;*
 - (f) *refuses or fails to comply to the best of his ability with any requirement or request made by an inspector in the performance of his functions;*
 - (g) *refuses or fails to answer to the best of his ability any question which an inspector in the performance of his functions has put to him;*
 - (h) *wilfully furnishes to inspector information which is false or misleading;*
 - (i) *gives himself out as an inspector;*
 - (j) *having been subpoenaed under section 32 to appear before an inspector, without sufficient cause (the onus of proof whereof shall rest upon him) fails to attend on the day and at the place specified in the subpoena, or fails to remain in attendance until the inspector has excused him from further attendance;*

- (k) *having been called under section 32, without sufficient cause (the onus of proof whereof shall rest upon him)—*
 - (i) *refuses to appear before the inspector;*
 - (ii) *refuses to be sworn or to make affirmation as a witness after he has been directed to do so;*
 - (iii) *refuses to answer, or fails to answer to the best of his knowledge and belief, any question put to him; or*
 - (iv) *refuses to comply with a requirement to produce a book, document or thing specified in the subpoena or which he has with him;*
 - (l) *tampers with or discourages, threatens, deceives or in any way unduly influences any person with regard to evidence to be given or with regard to a book, document or thing to be produced by such a person before an inspector under section 32;*
 - (m) *prejudices, influences or anticipates the proceedings or findings of an inquiry under section 32 or 33;*
 - (n) *tampers with or misuses any safety equipment installed or provided to any person by an employer or user;*
 - (o) *fails to use any safety equipment at a workplace or in the course of his employment or in connection with the use of plant or machinery, which was provided to him by an employer or such a user;*
 - (p) *wilfully or recklessly does anything at a workplace or in connection with the use of plant or machinery which threatens the health or safety of any person, shall be guilty of an offence and on conviction be liable to a fine not exceeding R50 000 or to imprisonment for a period not exceeding one year or to both such fine and such imprisonment.*
- (2) *Any employer who does or omits to do an act, thereby causing any person to be injured at a workplace, or, in the case of a person employed by him, to be injured at any place in the course of his employment, or any user who does or omits to do an act in connection with the use of plant or machinery, thereby causing any person to be injured, shall be guilty of an offence if that employer or user, as the case may be, would in respect of that act or omission have been guilty of the offence of culpable homicide had that act or omission caused the death of the said person,*

irrespective of whether or not the injury could have led to the death of such person, and on conviction be liable to a fine not exceeding R100 000 or to imprisonment for a period not exceeding two years or to both such fine and such imprisonment.

- (3) *Whenever a person is convicted of an offence consisting of a failure to comply with a provision of this Act or of any direction or notice issued thereunder, the court convicting him may, in addition to any punishment imposed on him in respect of that offence, issue an order requiring him to comply with the said provision within a period determined by the court.*
- (4) *Whenever an employer is convicted of an offence consisting of a contravention of a provision of section 23, the court convicting him shall inquire into and determine the amount which contrary to the said provision was deducted from the remuneration of the employee concerned or recovered from him and shall then act with respect to the said amount mutatis mutandis in accordance with sections 28 and 29 of the Basic Conditions of Employment Act, 1983 (Act No. 3 of 1983), as if such amount is an amount underpaid within the meaning of those sections.*

43. **Regulations**

- (1) *The Minister may make regulations—*
- (a) *as to any matter which in terms of this Act shall or may be prescribed;*
- (b) *which in the opinion of the Minister are necessary or expedient in the interest of the health and safety of persons at work or the health and safety of persons in connection with the use of plant or machinery, or the protection of persons other than persons at work against risks to health and safety arising from or connected with the activities of persons at work, including regulations as to—*
- (i) *the planning, layout, construction, use, alteration, repair, maintenance or demolition of buildings;*
- (ii) *the design, manufacture, construction, installation, operation, use, handling, alteration, repair, maintenance or conveyance of plant, machinery or health and safety equipment;*
- (iii) *the training, safety equipment or facilities to be provided by employers or users, the persons to*

- whom and the circumstances in which they are to be provided and the application thereof;*
- (iv) the health or safety measures to be taken by employers or users;*
 - (v) the occupational hygiene measures to be taken by employers or users;*
 - (vi) any matter regarding the biological monitoring or medical surveillance of employees;*
 - (vii) the production, processing, use, handling, storage or transport of, and the exposure of employees and other persons to, hazardous articles, substances or organisms or potentially hazardous articles, substances or organisms, including specific limits, thresholds or indices of or for such exposure;*
 - (viii) the performance of work in hazardous or potentially hazardous conditions or circumstances;*
 - (ix) the emergency equipment and medicine to be held available by employers and users, the places where such equipment and medicine are to be held, the requirements with which such equipment and medicine shall comply, the inspection of such equipment and medicine, the application of first-aid and the qualifications which persons applying first-aid shall possess;*
 - (x) the compilation by employers of health and safety directives in respect of a workplace, the matters to be dealt with in such directives and the manner in which such directives shall be brought to the attention of employees and other persons at such a workplace;*
 - (xi) the registration of persons performing hazardous work or using or handling plant or machinery, the qualifications which such persons shall possess and the fees payable to the State in respect of such registration;*
 - (xii) the accreditation, functions, duties and activities of approved inspection authorities;*

- (xiii) *the consultations between an employer and employees on matters of health and safety;*
 - (xiv) *subject to section 36, the provision of information by an employer or user to employees or the public on any matter to which this Act relates;*
 - (xv) *the conditions under which any employer is prohibited from permitting any person to partake of food or to smoke on or in any premises where a specified activity is carried out;*
 - (xvi) *the conditions under which the manufacture of explosives and activities incidental thereto may take place;*
- (c) *as to the preventive and protective measures for major hazard installations with a view to the protection of employees and the public against the risk of major incidents;*
- (d) *as to the registration of premises where employees perform any work or where plant or machinery is used and the fee payable to the State in respect of such registration;*
- (e) *whereby provision is made for the continuation of any registration under this Act;*
- (f) *as to the registration of plant and machinery and the fee payable to the State in respect of such registration;*
- (g) *as to the establishment of one or more committees for the administration of a provision of the regulations, the constitution of such committees, the functions of such committees, the procedure to be followed at meetings of such committees, the allowances which may be paid to members of such committees from money appropriated by Parliament for such purpose and the person by whom such allowances shall be fixed;*
- (h) *prescribing the records to be kept and the returns to be rendered by employers and users and the person or persons to whom such returns shall be rendered;*
- (i) *as to the designation and functions of health and safety representatives and health and safety committees and the training of health and safety representatives;*
- (j) *as to the activities of self-employed persons; and*

- (k) *as to any other matter the regulation of which is in the opinion of the Minister necessary or desirable for the effective carrying out of the provisions of this Act.*
- (2) *No regulation shall be made by the Minister except after consultation with the Council, and no regulation relating to State income or expenditure or to any health matter shall be made by the Minister except after consultation also with the Minister of State Expenditure and the Minister for National Health and Welfare, respectively.*
- (3) *In making regulations the Minister may apply any method of differentiation that he may deem advisable: Provided that no differentiation on the basis of race or colour shall be made.*
- (4) *A regulation may in respect of any contravention thereof or failure to comply therewith prescribe a penalty of a fine, or imprisonment for a period not exceeding 12 months, and, in the case of a continuous offence, not exceeding an additional fine of R200 or additional imprisonment of one day for each day on which the offence continues: Provided that the period of such additional imprisonment shall not exceed 90 days.*
- (5) *A regulation made under section 35 of the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983), which was in force immediately prior to the commencement of this Act and which could have been made under this section, shall be deemed to have been made under this section.”*

In terms of the Buckman Lab's right to construction i.e. expansion of their existing facility, is premised on an owner's inherent right to develop land in accordance with requirements approved by a town planning scheme.

g. *The Development Facilitation Act 67 of 1995 (DFA)*

The DFA introduces extraordinary measures to facilitate and speed up the implementation of reconstruction and development programmes and projects in relation to land. Insofar as Buckman Lab is concerned, the aforesaid Act may be of relevance in respect of its general principles to land development if the Act is applicable to the expansion and Buckman Lab intends utilising the mechanisms created by the Act for approval of its plans for extensions instead of the Town Planning Ordinance (TP 27 of 1949).

h. *National Buildings Regulations and Buildings Standards Act No. 103 of 1977*

Any proposed plans would have to be approved and as provided for in Sections 6 and 7 respectively of the National Buildings Regulations and Buildings Standards Act No. 103 of 1977 which provides as follows:

“6. *Functions of building control officers.*

- (1) *A building control officer shall—*
 - (a) *make recommendations to the local authority in question, regarding any plans, specifications, documents and information submitted to such local authority in accordance with section 4 (3);*
 - (b) *ensure that any instruction given in terms of this Act by the local authority in question be carried out;*
 - (c) *inspect the erection of a building, and any activities or matters connected therewith, in respect of which approval referred to in section 4 (1) was granted;*
 - (d) *report to the local authority in question, regarding non-compliance with any condition on which approval referred to in section 4 (1) was granted.*
- (2) *When a fire protection plan is required in terms of this Act by the local authority, the building control officer concerned shall incorporate in his recommendations referred to in subsection (1) (a) a report of the person designated as the chief fire officer by such local authority, or of any other person to whom such duty has been assigned by such chief fire officer, and if such building control officer has also been designated as the chief fire officer concerned, he himself shall so report in such recommendations.*
- (3) *.....*
- (4) *This section shall not be construed so as to prohibit a local authority from granting or entrusting to a building control officer any powers, duties or activities not connected with this Act or to prohibit any building control officer, with the approval of a local authority, from delegating to an officer under his control any power, duty or function granted or entrusted to building control officers in terms of this Act.*

7. *Approval by local authorities in respect of erection of buildings.*

- (1) *If a local authority, having considered a recommendation referred to in section 6 (1) (a)—*
 - (a) *is satisfied that the application in question complies with the requirements of this Act and any other applicable law, it shall grant its approval in respect thereof;*
 - (b)
 - (i) *is not so satisfied; or*
 - (ii) *is satisfied that the building to which the application in question relates—*

- (aa) *is to be erected in such manner or will be of such nature or appearance that—*
 - (aaa) *the area in which it is to be erected will probably or in fact be disfigured thereby;*
 - (bbb) *it will probably or in fact be unsightly or objectionable;*
 - (ccc) *it will probably or in fact derogate from the value of adjoining or neighbouring properties;*
- (bb) *will probably or in fact be dangerous to life or property, such local authority shall refuse to grant its approval in respect thereof and give written reasons for such refusal:*

Provided that the local authority shall grant or refuse, as the case may be, its approval in respect of any application where the architectural area of the building to which the application relates is less than 500, within a period of 30 days after receipt of the application and, where the architectural area of such building is 500 m² or larger, within a period of 60 days after receipt of the application.

- (2) *.....*
- (3) *When a local authority has granted its approval in accordance with subsection (1) (a) in respect of any application, such approval shall be endorsed on at least one of the copies of the plans, specifications and other documents in question returned to the applicant.*
- (4) *Any approval granted by a local authority in accordance with subsection (1) (a) in respect of any application shall lapse after the expiry of a period of 12 months as from the date on which it was granted unless the erection of the building in question is commenced or proceeded with within the said period or unless such local authority extended the said period at the request in writing of the applicant concerned.*
- (5) *Any application in respect of which a local authority refused in accordance with subsection (1) (b) to grant its approval, may, notwithstanding the provisions of section 22, at no additional cost and subject to the provisions of subsection (1) be submitted anew to the local authority within a period not exceeding one year from the date of such refusal—*
 - (a) (i) *if the plans, specifications and other documents have been amended in respect of any aspect thereof which gave cause for the refusal; and*
 - (ii) *if the plans, specifications and other documents in their*

amended form do not substantially differ from the plans, specifications or other documents which were originally submitted; or

- (b) where an application is submitted under section 18.*
- (6) The provisions of this section shall not be construed so as to prohibit a local authority, before granting or refusing its approval in accordance with subsection (1) in respect of an application, from granting at the written request of the applicant and on such conditions as the local authority may think fit, provisional authorization to an applicant to commence or proceed with the erection of a building to which such application relates.*
- (7) (a) An application which is substantially the same as an application referred to in this Act and which before the date of commencement of this Act has been lodged with a local authority for its consideration and in respect of which such local authority on that date has not yet granted or refused its approval, shall be considered by such local authority as if this Act had not been passed.*
- (c) Approval granted by a local authority before the date of commencement of this Act in respect of an application substantially the same as an application referred to in this Act, shall be deemed to have been granted in terms of this section if the erection of the building in question has not been commenced with before the said date."*

i. National Building Regulations in terms of the National Building Regulations and Standards Act 103 of 1977 (GNR2378 GG12780 of 12 October 1990 (as amended)

i. Regulation F6: Control of Dust and Noise

- (1) The owner of any land on which excavation work is in progress or on which any building is being erected or demolished must take precautions in the working area and on surrounding roads and footways to limit to reasonable level the amount of dust arising from the work or surroundings thereof.*
- (2) (a) no person may, during the specified periods, carry on any activity or use or permit the use in a course of any building, demolition or excavation work, any machine, machinery, engine, apparatus, tool or contrivance, in whatever manner it may be propelled, which in the opinion of the local authority may unreasonably disturb or interfere with the amenity of the neighbourhood.*

5.11.2. Regulation F8: Waste material on site

- (1) *Where in the opinion of the local authority, excessive rubble, rubbish, other debris or combustible waste material is allowed to accumulate on sight before or during building operations, it may, by notice, order the owner of the site to have it removed within the period specified in the notice.*

5.11.3. Regulation F9: Cleaning of site

- (1) *The owner or person erecting or demolishing any building must remove any surplus material and matter arising from such erection or demolition from the site and any other land or public street or public place affected by such material or matter during or after the completion of the erection or demolition, failing which the local authority may, by written notice, order that the owner of the building have any such surplus material and the matter removed within a period specified in the notice.*

5.11.4. Regulation P4: Industrial Effluent

- (1) (a) *Where any person has obtained approval to discharge into any drain any liquid or solid matter, other than soil water or waste water, and where any additional drainage or other installations including storage, pre-treatment and metering installations are required by the local authority as a condition of such approval, such person shall submit any plans and other details of such installations required by the local authority.*

5.11.5. Regulation U1: Provision of storage areas

Any building, excluding a dwelling house, in which refuse is or will be generated, must be provided with an adequate storage area for refuse containers.

5.11.6. Regulation U2: Access to storage areas

The location of any storage area contemplated regulation U1 shall be such that access thereto from any street for the purposes of removing the refuse, is to the satisfaction of the local authority.

5.11.7. The Town Planning Ordinance No. 27 of 1949 (TPO)

TPO (assented to by the Governor-General-in-Council on 21 November 1950) and which commenced on 1st August 1951 provides for a framework within which to submit plans and/or schemes to the local councils.

Insofar as the Buckman Lab is intent on expanding its facilities, Buckman Lab may have to obtain the consent of the Town Planning Officer, if the land on which it intends to expand, is not appropriately zoned. If necessary, a rezoning or consent application may be required.

In this regard Section 67 provides as follows:

“67. Prohibition of certain works, uses, developments and subdivisions of land pending approval of scheme.

(1) No person in any area in respect of which a resolution to prepare a scheme shall have taken effect shall—

(a) erect a building or structure or alter or extend a building or structure; or

(b) develop or use any land, or use any building or structure for any purpose different from the purpose for which it was being developed or used, as the case may be, at the date when the resolution to prepare a scheme took effect; or

(c) use any building or structure erected after the date when the resolution to prepare a scheme took effect for a purpose different from the purpose for which it was erected; or

(d) in an area to which the provisions of Chapter III of this Ordinance do not apply, subdivide any land,

unless in any such cases he has first applied in writing to the local authority for authority to do so, and the said local authority has granted its written authority therefore, either with or without conditions: Provided—

(i) that any such authority which related to any erection, alteration or extension or to any development or use contemplated in paragraphs (a), (b) or (c) shall lapse and cease to be valid if such erection, alteration, extension, development or use is not substantially commenced within a period of 18 months from the date of notification of the granting of such authority; and

(ii) that any such authority and any authority conferred as contemplated in proviso (iii) which relates to any such use shall lapse and cease to be valid if such use is at any time discontinued for a continuous period longer than 18 months; and

(iii) that in any case where authority for any such erection, alteration, extension, development or use as aforesaid is conferred by order or decision of the appeals board under the provisions of section 73quat (5), as confirmed or altered on review by the Administrator under the provisions of

section 73sex, such authority shall lapse and cease to be valid if such erection, alteration, extension, development or use is not substantially commenced within 18 months from the date of notification of such order or decision of the appeals board, or, where an appeal lodged by a person who has objected in terms of section 67bis is subsequently withdrawn, within 18 months from the date of withdrawal of such appeal; and

- (iv) that where upon the granting of any such authority the approval of a building plan or other statutory approval is required in respect of the erection, alteration, extension, development or use before such erection, alteration, extension, development or use may be commenced, it shall be deemed to have substantially commenced for the purposes of provisos (i) and (iii) above on the date upon which valid application for such approval is lodged with the appropriate authority; provided further that the authority granted shall lapse and cease to be valid upon the expiry or lapse of any approval in terms of any other law and shall in any event lapse if the erection, alteration, extension, development or use concerned is not in fact commenced within a period of five years from the date of notification of the granting of such authority; and*
- (v) that the applicant shall have satisfied the local authority that he is the owner of the land concerned or, if he is not, that the application has been made with the knowledge and consent of the owner.*

(1A) The local authority shall come to a decision on applications lodged in terms of subsection (1) within a period of two months of the date of receipt of such application, or within such further period as may be agreed upon by the applicant and the said local authority. If within twenty-one days of the expiry of the said period of two months or such further period as may have been agreed upon, there is no decision, the applicant may deem the application to have been refused and may appeal to the appeals board as contemplated by section 73quat.

(2) Where there has been any interruption in the development or use of any land or the use of any building or structure after the date when the resolution to prepare a scheme took effect for a continuous period exceeding eighteen months, or where any building or structure erected after such date is not used for the purpose for which it was erected within eighteen months after its completion, it shall not be lawful to recommence such development or use or commence such use, as the case may be, without the authority of the local authority applied for and granted in the manner prescribed in sub-section (1).

- (3) (a) *Unless empowered or ordered so to do by an order or decision of the appeals board, under the provisions of sub-section (5) of section 73quat, as confirmed or altered on review by the Administrator under the provisions of section 73sex, the local authority shall not grant its authority if the proposed building or structure, development, use or subdivision is in conflict with any duly adopted provision of its scheme in course of preparation.*
- (b) *Any grant of authority in conflict with the provisions of paragraph (a) shall be null and void.*
- (4) *The local authority may refuse to grant authority for any building or structure, development, use or subdivision which would in its opinion interfere with the amenities of the neighbourhood, or it may make the grant of its authority subject to such specified terms and conditions as it may deem proper.*
- (5) *If any building, alteration, addition or other work for which the authority of a local authority is required, is in progress, or if any land is being developed or used or any building or structure is being used for a purpose which requires the said authority, or if the subdivision of land requiring such authority is taking place and the required authority has in none of these cases been obtained, then the local authority may issue an order prohibiting the construction, alteration, addition or other work, and may prohibit the authorised development or use to which the land or unauthorised development or use to which the land or unauthorised use to which the building or structure is being put, or may prohibit further work upon such subdivision: Provided that after such an order has been made it shall be competent for the local authority to consider an application for the grant of its authority for the said construction, alteration, addition or other work or for the said development or use of the land or use of the building or structure or for such subdivision, and such application shall be made and disposed of in the same way as an application made before any construction, alteration, addition or other work or development or use had commenced.*
- (6) *.....*
- (7) (a) *Any application for the approval of a building plan or, in an area to which the provisions of Chapter III of this Ordinance do not apply, a subdivision of land may be considered under the provisions of this section or of any other law and if any such application is refused, the applicant shall be advised of the provisions aforesaid under which the application was considered and refused.*
- (b) *Any person who is aggrieved by the refusal of any such application aforesaid considered under the provisions of this section shall have a right of appeal in terms of and subject to the provisions of section 67ter, but any person so aggrieved in respect*

of any such application considered under the provisions of any other law as aforesaid shall have no such right of appeal in terms of section 67ter.

- (8) *No compensation shall be payable in respect of the exercise by a local authority or joint committee of its powers under this section.*

67bis. Special consent applications and applications conflicting with scheme.

- (1) *A local authority shall not come to a decision on any application made to it in terms of section 67—*

(a) *if the application or portion thereof relates to the erection or use of a building or development or use of land which, under any provision of the scheme in course of preparation, requires its special consent; or*

(b) *relating to the erection or use of any building or structure or the development, use or subdivision of any land if such application is in conflict with any duly adopted provision of its scheme in course of preparation,*

until the applicant has satisfied it that he has complied with the requirements set out in subsections (2) and (3).

- (2) *Every applicant referred to in subsection (1) shall publish at his own expense once in a newspaper circulating in the area or areas of the local authority or authorities concerned, a notice which shall set forth concisely the particulars of his application and call upon any objectors thereto to lodge their written objections at the office of the local authority concerned and by registered or certified post or by hand with the applicant, by a fixed date which shall be not earlier than twenty-one days from the date of publication of such notice, and shall further state where the particulars, plans and other documents relating to the application may be inspected.*

- (3) *Every applicant referred to in subsection (1) shall, at his own expense, serve a notice containing the same information as the notice referred to in subsection (2) upon such persons as the local authority may indicate and display it on the site or in close proximity thereto, in such place and in such manner as the local authority may direct.*

- (3A) *Every application lodged under section 67 which relates to—*

(a) the erection or use of a building, or

(b) the development or use of land,

in respect of which the special consent of the local authority concerned is required under any provision of its scheme in the course of preparation, shall be accompanied by payment of a fee—

- (i) *fixed by such local authority by by-law, or*
 - (ii) *where no such fee is so fixed, the fee generally or specially fixed by the Administrator.*
- (4) (a) *Subject to the provisions of subsection (5), the local authority shall take into consideration all written objections lodged with it before the date fixed in the notice and shall come to a decision upon the application, as published, within a period of two months of the receipt of the application or the appearance of the advertisement, whichever is the later, or within such further period agreed on by the local authority or its duly authorised representative and the applicant, and upon failure to agree on such further period, the application shall be deemed to have been refused at the expiry of the said period of two months.*
- (b) *Any such decision shall be notified within fourteen days thereafter to the applicant and the person (if any) from whom objections were received in terms of this section, by registered post: Provided that, if joint objections are lodged, the documents setting out such objections shall state the address to which such decision shall be sent and if they do not do so the notice shall be sent to the address of the first signatory.*
- (5) *If after the publication of the notice referred to in section 47bis (1), but before the adoption of the provisions as part of the scheme in course of preparation in terms of section 47bis (4) (a), application for its authority is made to a local authority in terms of section 67, and the grant of such authority will conflict with the provisions as published in terms of section 47bis (1), then the local authority may defer making a decision upon the application until it has decided in terms of section 47bis (4) (a), aforesaid, whether to adopt the proposals with or without modifications as part of the scheme in course of preparation, or not, and any person who is aggrieved by such deferment shall have a right of appeal to the appeals board.*
- (6) *Nothing contained in this section shall be construed as conferring upon any local authority the right to make any application to itself in terms of subsection (1) hereof in respect of any land owned by itself or in its possession: Provided that there shall always be a right to consider an application in respect of such land.*
- (7) *Except as provided for in terms of section 46 (1) (bA), a local authority shall not approve any application made to it in terms of section 67 if such application is in conflict with any duly adopted provision of its scheme in course of preparation.”*

j. General Environmental Laws :

i. Ground Pollution

Ground pollution will include all forms of damage caused typically as a result from contaminated soil. One has to consider resultant courses, i.e. a neighbour whose ground has as a result of the contamination on Buckman Lab's soil been diminished in value.

In this regard Buckman Lab will have to consider the possibility and extent to which any chemicals (due from a resultant overflow or otherwise) might seep into the ground and be conveyed by percolating water or rain in the direction of neighbour's properties.

ii. Noise Pollution :

The crucial questions in this regard are whether:

- (a) the industry/business/activity of Buckman Lab causes noise;
- (b) and in the event of (a) being answered in the affirmative, whether such noise constitutes or qualifies as noise which is harmful to well-being.

The test is as follows: *"an acceptable level of noise is one which a reasonable period can be expected to tolerate in the particular circumstances."*

Schedule 5 of the Constitution specifically includes "noise pollution" in its Part B.

Factors which a court will take into account in determining the "lawfulness" of the noise activity (and ultimately as such determine its normality and reasonableness) would include:

- (a) nature, extent and audibility of the noise produced;
- (b) mental state of the "doer";
- (c) type of noise;
- (d) degree of persistence;
- (e) locality involved;
- (f) times when noise is heard;
- (g) economic value of the actions;
- (h) necessity of the inconvenience;
- (i) severity of the inconvenience.

The determination of policy under the environment Conservation Act, Act 73 of 1989 (ECA) is wide enough to include "noise pollution".

More importantly, the ECA specifically provides that the Minister may make regulations regarding noise, vibration and shock, the relevant section providing:

“The Minister may make regulations with regard to the control of noise, vibration and shock, concerning:

- (a) the definition of noise, vibration and shock;*
- (b) the prevention, reduction or elimination of noise, vibration and shock;*
- (c) the levels of noise, vibration and shock which shall not be exceeded, either in general or by specified apparatus or machinery or in specified instances or places;*
- (d) the type of measuring instrument which can be used for the determination of the levels of noise, vibration and shock and the utilisation and calibration thereof;*
- (e) the powers of provincial administrations and local authorities to control noise, vibration and shock, and*
- (f) any other matter which he may deem necessary or expedient in connection with the effective control and combating of noise, vibration and shock.”*

Acting in accordance with this empowering provision, the Minister has made noise control regulations which initially applied to those local authorities which adopted them.

The regulations adopt a number of technical terms which are relevant to the question of standards discussed above. These include:

- **ambient sound level** which means the reading on an integrating impulse sound level meter taken at a measuring point in the absence of any alleged disturbing noise at the end of a total period of at least 10 minutes, after such meter had been put into operation;
- **disturbing noise** which means a noise level which exceeds the zone sound level or, if no zone sound level has been designated a noise level which exceeds the ambient sound level at the same measuring point by 7dBA or more;
- **dBA** which means the value in decibels, determined using a frequency weighing network A, and derived from a complicated logarithmic mathematical formula;
- **noise level** which means the reading on an integrating impulse sound level meter taken at a measuring point in the presence of any alleged disturbing noise at the end of a total period of at least 10 minutes after which meter had been put into operation and if the alleged disturbing noise has a discernible pitch, to which 5 dBA has been added;
- **noise index** which means a number expressed in dBA as defined in SABS 01117-1974, titled “Code of Practice for the termination and limitation of disturbance around an aerodrome due to noise from aeroplanes”, published under Government Notice No. 151 of 1 February 1985; and

- **noise nuisance** which means any sound which disturbs or impairs or may disturb or impair the convenience or peace of any person.

A further general regulation prohibits “disturbing noise” produced by or caused by any person, machine, device or apparatus.

Buckman Lab should take note to consider the Regulations promulgated in Government Notice R154 in Government Gazette No. 13717 dated 10th January 1992.

Furthermore, Buckman Lab in specific has to consider the noise pollution during the construction phase and impose measures that will serve to minimise same.

7. Description of Environmental Issues & Potential Impacts, including cumulative impacts identified :

The potential impacts that have been identified which could arise from the bulk storage tanks, process plant, drum storage and/ or the activities on this plant are:

- Vapour cloud fire (flash fire)
- Pool fire (burning of large puddles)
- Jet fire (pressurized gas or liquid escaping from a hole)
- Boiling Liquid Expanding Vapour Explosion (BLEVE) (an explosive release of expanding vapour and boiling liquid following a catastrophic failure of the pressurized vessel holding a liquefied gas or vapour on liquid)
- Vapour cloud explosion (a more violent flash fire)
- Toxic vapour release with no fire
- A combination of the above

Further, the issues and concerns identified in the public participation process will be filtered. These will all be assessed in the EIA phase.

8. Methodology of Assessing Impacts :

The methodology of assessing the impacts (for the EIA phase) is guided by the EIA regulations and any guidelines as well as the specialists’ knowledge.

The Plan of Study describes the methodology for assessing the impacts in the second phase.

Most importantly however, the scoping phase is used to inform the planning & design of the project. Rather than following a methodology that assesses impacts post facto, the mitigation measures are incorporated into the design prior to submission.

9. Description of the public participation process :

The Public Participation process for the scoping phase was conducted in order to provide I&AP's with an opportunity to raise their issues and concerns regarding the proposed development at a conceptual level for the main purpose to introducing the project to interested & affected parties (I & AP's) and the authorities.

a) Invitation to Public Meeting

- **Advertising**

The adverts inviting all I&AP's and relevant stakeholders were placed in the following local newspapers:

Name of Newspaper	Date of Publication	Language
1. Ilanga	16 – 18 June 2008	IsiZulu
2. Mercury	17 June 2008	English
3. Highway Mail	20 June 2008	English

The copies of the Adverts and Site Notices are attached as Appendix 5

- **Notice to I&AP's**

Written notices were sent to all I&AP's to inform them of the date and venue of the public meeting.

- **Site Notices**

Site notices were displayed in and around the main access points of the proposed site including Hammarsdale community. Please refer to Appendix 5 for the copies of Site Notices and Advertisements.

b) Public Meeting

The public Meeting for the E.I.A. phase was convened as follows:

Date: 2 July 2008

Time: 17h00 for Site Visit, 17h30 for Public Meeting

Venue: Buckman Laboratories

Physical Address: 1 Buckman Boulevard, Hammarsdale

An updated I&AP's list is attached as Appendix 5. The minutes of the Public Meeting (2 July 2008) is attached as Appendix 5.

The issues and concerns raised by I & AP's are captured and responded to in Table 5.

Table 5 : Issues and Concerns Response Table

No.	Issues/ Concerns	By Whom	Source & Date	Response
1.	Noise during the construction phase.	Zenzeleni Ma- Africa (NGO)	Questionnaire distributed during the Public Participation Process.	No excessive noise besides normal construction, building and fitting of equipment. Engineering equipment will be pre-fabricated and then connected. There is no blasting etc that will take place; therefore the noise will be minimal
2.	Air Pollution during the operational phase	Zenzeleni Ma- Africa (NGO)	Questionnaire distributed during the Public Participation Process.	The vessels will be connected through a pipe to a scrubber unit containing water, which would remove any impurities from the gas being released into the atmosphere.
3.	Waste Control during the operational phase	Zenzeleni Ma- Africa (NGO)	Questionnaire distributed during the Public Participation Process.	The current procedure for waste management is applicable. The new facility will see a reduction in the waste generation due to modern technology.

No.	Issues/ Concerns	By Whom	Source & Date	Response
4.	Health and Safety during the operational phase	Zenzeleni Ma- Africa (NGO)	Questionnaire distributed during the Public Participation Process.	Buckman is a SABS ISO 18001 (Health & safety) certified company; the new facility will fall under the same requirements.
5.	Will pollution emanating from the operation of the facility cause any harm to the ozone layer. whether	Mrs. Connie Shabalala	2 July 2008 Public Meeting	No harm to the atmosphere, as it will be connected to a scrubber system
6.	Are there any mitigating measures in place to control pollution during the operation of the Buckman facility?	Mrs. Connie Shabalala	2 July 2008 Public Meeting	<p>Yes. The vessels will be connected through a pipe to a scrubber unit containing water which would remove any impurities from the gas being released into the air</p> <p>The current plant set-up is fully contained thereby ensuring spills do not leave the site and the solid waste is controlled and disposed of by a registered waste company</p>
7.	The BID had stated that there would be 6(six) new vessels when there were in fact 3 (three) in terms of the presentation at the meeting.	Miss. Sindi Mbatha	2 July 2008 Public Meeting	The building facility has been designed to house 6 process vessels. Since the EIA is valid for 2 years for completion, it will not be able to get all 6 vessels installed during this

No.	Issues/ Concerns	By Whom	Source & Date	Response
				period. The final decision is to have 3 vessels.
8.	Will the Buckman laboratories project benefit the community in terms of job creation or empowering community members of the community?	Miss. Sindi Mbatha	2 July 2008 Public Meeting	The company is currently offering learnerships, 16 (sixteen) of which are taking place at the moment. There are also bursaries offered by the company and preference is given to children from the local community
9.	The community would be unable to comment on the project as they were not familiar with chemicals used or what effects they had.	Miss. Sindi Mbatha	2 July 2008 Public Meeting	Buckman Laboratories conducts risk assessments of chemicals prior to use to ensure the safety of our people and the public and to prevent adverse effects on the environment. The end products that are manufactured is safe for use such as for potable water treatment, used in manufacture of issue and paperboard etc.
10	What mitigation measures would be in place to ensure that there would be no hazards during the expansion, would there be any impact on the sewer line.	Mr. Lucky Mkhize eThekweni Health	2 July 2008 Public Meeting	The sewer system will not be impacted on as the plant is completely self-contained and not connected to a sewer system

No.	Issues/ Concerns	By Whom	Source & Date	Response
11.	How can information from Buckman Laboratories are made easily accessible to the surrounding community.	Miss. Sindi Mbatha	2 July 2008 Public Meeting	Names of all people present at the meeting are recorded on the attendance registers and added to the I & AP list. Information about the project is thereafter distributed to all I&AP's
12.	Could the expansion of the facility result in any potential risk to the welfare of the Buckman staff.	Mr. Alex Mkhize	2 July 2008 Public Meeting	The safety of staff & the surrounding community is a high priority. There are mitigating controls in place to ensure the safety of both
13.	How will the community get access to information regarding social projects by Buckman?	Miss. Sindi Mbatha	2 July 2008 Public Meeting	Details regarding community projects can be obtained from Mr. Muzi Tshabalala of Buckman Laboratories
14	What are the inputs into the manufacturing process and the exact volumes of quantities?	I&AP		Refer to inputs
15	Provide a non-technical description of the manufacturing process	I&AP		Blends: materials are charged into the vessel and mixed with or without temperature. The individual materials will remain in the pure form

No.	Issues/ Concerns	By Whom	Source & Date	Response
				<p>Reactions: chemicals are charged and missed with temperature and/or pressure to form a new chemical</p> <p>All processes are conducted under controlled conditions with or without automation to prevent any possibility of incidents. There are safety interlocks and double checks in place to ensure that the manufacturing process is conducted in a controlled manner. The entire area is contained so that no spills can enter any waterways.</p>
16	What are the outputs and the volumes	I&AP		Refer to Outputs summary
17	Is the information available on through-put rates i.e. volumes per hour/ day/ weeks/ months?	I&AP		Refer to Outputs summary
18	What are the emissions; waste and by-products and the actual volumes	I&AP		<p>Due to handling bulk bags, there will be a reduction in solid waste disposal.</p> <p>Batches of the same family will be manufactured after each other, thereby</p>

No.	Issues/ Concerns	By Whom	Source & Date	Response
				<p>eliminating the need for regular washing of the vessel, thereby reducing waste. The new volumes will generate approximately 250 tons per annum. The solid waste generation will approximately 5 tons per annum.</p> <p>No atmospheric emissions are expected as the vessels will be connected to a scrubber system.</p>
19	What are the potential impacts/ risks that is generally associated with these plants and the products they handle	I&AP		<p>The potential impacts/risks are, air pollution, ground pollution, water pollution, human chemical exposure, fire, explosion, injuries, and resource usage. Note all the above have mitigating controls in place to prevent negative impacts i.e. Scrubber units for prevention of air pollution, the plant is fully contained to prevent ground and water pollution, the personnel wear full personal protective equipment to prevent chemical exposure</p>

No.	Issues/ Concerns	By Whom	Source & Date	Response
				<p>and well the vessel is connected to the scrubber. A structured training programme is in place and automated processes and double checks systems to prevent injuries. Cleaner production and waste minimization techniques will be employed to conserve our natural resource.</p>
20	<p>Explain the cradle-to-grave process of the product i.e.</p> <p>a. where does the “raw material” come from – its source (volumes)</p> <p>b. how and where is it transported via to the plant (volumes)</p>	I&AP		<p>Raw materials are sourced locally and imported. The volumes for the plant expansion will be 8416 tons per annum or 700 tons per month. Including the safety stock will result in about 1000 tons of material per month.</p> <p>Imported materials are received at the Durban harbour and transported by road to the Hammarsdale facility. Materials are also transported by road from local suppliers around the country. The volume is as per above.</p>

No.	Issues/ Concerns	By Whom	Source & Date	Response
	<p>c. Is it stored and for how long and volumes?</p> <p>d. how is it manufactured and capacity of each process vessel</p> <p>e. what waste/ emissions and by products are produced – and volumes at any particular point in time</p>			<p>Yes it will be stored, average storage period is 30 days due to raw materials being imported and shipping lead times.</p> <p>3 x 25 000 litres process vessels that will include liquid/liquid blends that require temperature and no temperature, Powder/liquid blends that require temperature and no temperature, reactions that involve temperature and pressure.</p> <p>Liquid effluent is estimated to be about 250 tons per annum. However, with increased batch sizes, latest technology cleaning mechanisms and manufacturing by generics will see a reduction in the volumes. Solid waste is estimated to be about 5 tons per annum, however, a reduction will be possible as bulk bags will be used instead</p>

No.	Issues/ Concerns	By Whom	Source & Date	Response
	<p>f. how where does the waste/ emissions and by-products disposed</p> <p>g. Where does the manufactur ed product go to and volumes?</p>			<p>of 25 kg bags. The by-products that obtained from the processes are reused.</p> <p>Via approved waste disposal companies that are audited on an annual basis</p> <p>To the Pulp & Paper, process and potable water treatment industry. The volume to these industries will be approximately 22000 tons per annum.</p>

10. LISTS OF PERSONS, ORGANISATIONS AND ORGANS OF STATE REGISTERED AS I&APS

Refer to Appendix 5. The I & AP list is updated as parties are identified.

11. Plan of Study of the EIA :

a. The proposed approach to the environmental impact assessment:

From the scoping process, it is apparent that the development will not have any major impact on the environment that cannot be mitigated.

This is due to the fact that this is an existing plant and the existing chemicals and process and the proposed inputs, process and outputs are not new, but mere increase in volumes.

This finding was based on the approach where an EIA is used to inform the planning and the design of the proposal.

Hence, where the scoping had unidentified issues of potential significant impact, the design team was informed and amendments for improvement and mitigation were incorporated immediately, which is the concept included in this ESR.

b. Description of the tasks that will be undertaken as part of the environmental impact assessment process including the identified specialist reports

From the study and the comments received from I & AP's the identified environmental issues and the approach to addressing this is indicated below:

Issue	To be addressed by :
Risk Assessment Study	Risk Assessment Specialist
Further Public Participation Report	EIA Consultant
Consultation with the Authorities to assess acceptance of the scoping document and the proposed activity	EIA Consultant
Ongoing engagement with the professional team and design team and engineers	Specialist & EIA Consultant

Accordingly, one specialist report is required that will assess the risk of the existing input chemicals; the process involved and the output products.

c. Risk Assessment

• Purpose :

- To determine the risk/hazard presented by the installation.
- To enable management to comply with the legal requirements framed under the Major Hazard Installation Regulations.
- To enable management plan to be established should an incident occur.
- To determine magnitude of such incident (worst case and alternative case scenario)

Scope of Work:

- To identify any specific risk which may arise or could arise out or from the major hazardous installation?

- To identify the probability and nature of a possible incident.
- To identify mitigation measures to prevent, minimize or contain the effect of such an event.
- To enable emergency and crisis management programs to be developed. It includes a risk management program for potential off-set consequences.

Methodology:

- Compliance to national legislation, norms and guidelines
- Use of field work; site visits; interviews, risk calculations and interaction with the EIA team and professional team
- International best practice and norms

d. The stages at which the competent authority will be consulted;

The DAEA as the competent authority will be consulted on submission of the draft EIR and requested to comment thereon before submission of the final EIR for its consideration. The submission of the draft EIR will be considered as a request for consultation with the DAEA.

This will prevent the delays to date in the scoping process. The DAEA is governed by the regulations to guide the EIA process during and not after the fact.

Also, the DAEA will be expected to be present at the public meeting so that the evaluating officer appreciates the project from inception.

It is recorded that this was not the case in the scoping phase and it must be rectified to prevent further delays in a project that has been found to have no fatal flaw and minimal (if any) impact on the environment.

e. Description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity

Through the public participation process during scoping, issues and concerns raised by stakeholders and the authorities assisted in identifying possible impacts that need to be addressed within the EIA phase.

In addition, potential impacts will be identified through:

- Communications with relevant authorities and the applicant;
- Site inspections and field observations;

- The results of specialists' investigations and feedback from the professional team. Specialists will be appointed to assist in identifying potential impacts as well as appropriate mitigation and management measures; and,
- Professional experience in the field of environmental impact assessment and the judgement of the EIA consultants.

The status quo situation will be considered as a baseline which will also be assessed.

It is further recorded that the "feasible and reasonable" alternatives has been described and assessed in the scoping phases. Due to the plant undergoing a mere expansion, a detailed assessment of the alternatives will not be undertaken in the EIA phase.

f. Construction Phase

A Construction Environmental Management Plan (CEMP) will identify the issues likely to impact on the environment during construction and mitigation measures will be put in place to address these.

g. Operational Phase

It is critical to address the 'cradle to grave' processes of the project; from construction through to the management of the development post construction, including the management of wastes etc.

These will be addressed in detail within the EIR report where the associated impacts will be assessed and mitigation measures recommended.

h. Methodology of determining the significance of potential environmental impacts

Once potential impacts have been identified, further investigation is required to understand the impact.

Predictions are based on simple conceptual models of how natural processes function. Criteria that will be used to describe the nature of impacts include:

- Cumulative impacts (where applicable)
- Nature of the impact
- The extent & duration of the impact;
- Probability of the impact occurring
- The degree to which the impact can be reversed
- The degree to which the impact may cause irreplaceable loss of resources
- The degree to which the impact can be mitigated.

i. Evaluation of Impacts Identified

Once the impacts have been predicted and described, the significance of the impacts will be assessed.

Significance can be described in terms of:

- Carrying capacity of the receiving environment
- Adaptability of the receiving environment;
- Ability to mitigate against possible negative impacts;
- Legal requirements
- Affordability

h. Particulars of the public participation process that will be conducted during the environmental impact assessment process

Public participation is an essential component of the EIA. Stakeholders have, to date, been given the opportunity to:

- Identify issues and concerns
- Comment on the documents produced

The process is an open process as new issues may arise as a result of new information provided by stakeholders that were previously not known to the assessors.

The public participation process will be undertaken with stakeholders throughout the EIA utilising the following mechanisms:

- Public Advertisements through the mainstream and community newspapers, and notices sent to key identified individuals registered on the stakeholder database;
- Focus group meetings and public meetings where necessary
- Continual updates via fax/e-mail/and post to ensure all stakeholders are kept informed of the process.

Issues and concerns gathered from this process will be incorporated into an 'Issues Trail' which will form part of the EIR.

The issues and concerns raised to date will be addressed and where possible measures will be put in place to prevent/minimise identified negative impacts.

The authorities and other I & AP's will be afforded the opportunity to comment on the draft EIR to enable them to establish whether their issues and concerns have been addressed in a fair and transparent manner.

10.10. PROGRAMME FOR EIA:

NO.	ACTIVITY	TIMEFRAME	RESPONSIBILITY
1	Undertake Specialist Studies	1-31 August 2008	Specialists
2	Undertake Public Participation, including public meeting and/or focus group meetings where necessary	15 August-12 September 2008	EIA Consultant
4	Lodge Draft EIR	15 September 2008	EAP
5	Public, authority and DAEA review, including public meetings & focus group meetings if necessary	30 October 2008	Registered I & AP's; authorities & DAEA
7.	Submit final EIR to DAEA for consideration	3 November 2008	EAP