

Appendix M

List of equipment which contains residual contamination

Residual Contamination - KA Plant

Contaminated equipment - bulk							
Area	Plant	Item No.	Equipment name	Location	Process material	Estimated quantity	Comments
1	KA	F-540	Organics Recovery Column	Central area of plant old ICI KA structure West side of plant.	Solids from boric process: boric acid, sodium hydroxide, polymeric cyclo compounds and trace chromium.	~50kgs	Estimate from decommissioning photo. May not be representative of other trays, (107), in column.
	KA	5021-237	Mother Liquor tank	West of 'Quad', ground floor below centrifuges. Long horizontal, cylindrical vessel.	Solids from boric process: boric acid, sodium hydroxide, polymeric cyclo compounds and trace chromium.	~200kgs	Estimate from visual inspection from top of vessel.
	KA	7100-F7100-10	North WWR Hotwell	Inside plant West of Mother liquor tank.	Solid tarry material containing organic acids, aka Cop Acid.	~50kgs	Estimate from small nozzle
	KA	7100-F7100-20	South WWR Hotwell	Inside plant West of Mother liquor tank.	Solid tarry material containing organic acids, aka Cop Acid.	~50kgs	Estimate from small nozzle
	KA	7100-E7050-00	Wash Water Storage	Centre of KA structure SW of 'Quad'.	Recycle internal 'pan'; has cyclo oligomer material, polymeric dark solid	~500kgs	Visual estimate. No access to base of vessel to determine quantity of any further residual material.
	KA	8500-F8500 & F8501	Nos, 1 & 2 Dycal storages	Tank area to NW of KA plant	Organic acid material, COP acid formerly known as Dycal 66	~2m3/stge	Calculated volume based on 4" heel in tanks
	KA	8500-F8520, E8550 & E8560	Nos 3, 4 & 5 Dycal 75 storages	Tank area to NW of KA plant	Non volatile residues from KA separation process, polymeric hydrocarbons	No.3 stge ~3m3. nos 4 & 5 stges ~5m3/stge	Calculated volume based on 4" heel in tanks
	KA	9300-F9380	No.4 General storage	Bunded tank in centre of old ICI section	General material from both boric and non-boric processes	~100kgs	Estimated quantity. Material will contain, traces of chromium, caustic soda, and bulk boric acid and polymeric cyclo compounds
	KA	5021-370, 371 & 372	Oil Wash settlers, 1, 2 & 3.	Central to KA plant E side.	Coffee grounds' dark tarry substance caked on settling trays and floor of vessel	~150kgs/vessel	Estimate from decommissioning photographs
	KA	5021- 373, 374 & 375	Oil Wash Mixers, 1, 2 & 3.	Adjacent to Oil Wash Settlers on 2nd flr	Coffee grounds' dark tarry substance caked on floor of vessel	~50kgs/vessel	Estimate from decommissioning photographs
	KA	9300-F9350-00, 9300-F9360-00 & 9300-F9370-00	1, 2 & 3 Used Oil Storages	Bunded tanks in centre of old ICI section	Residual oil on vessel base and 'boot', remaining from vent gas absorption section, contaminated with cyclohexane and cyclo compounds.	~200litres/tank	Estimate from decommissioning photographs
	KA	6100-E6030 - A, B, & C. 6100-E6040- A & B. 6100-E6060	Oil heaters and coolers associated with Vent gas absorption	Bunded area E side of KA plant .	Oil contaminated with cyclo compounds from vent gas absorptio. System has been drained but material will remain in interconnecting pipe work at low points.	~100litres/vessel	Estimate
Contaminated equipment - residue							
	KA	7100-7060-00	Wash Water Stage 2 Evaporator, aka No.1 Crystalliser	North East end of main KA structure	Small amount of residue on internal pan. Drainings from base pipe is a thick tarry substance, consisting of polymeric acidic cyclo material.	Unknown	No visual access to base.
	KA	5020-595	Mineral oil storage	NW side of old KA structure in bund	Residual mineral oil following tank draining.	~30ltrs	Estimate from decommissioning
	KA	5020-590A & 590B.	Chromate tanks, (2).	NW side of old KA structure in bund	Residual additive material containing chromate, dark deposit on floor and part of side walls.	~40ltrs	Estimate
	KA	4300-D3100-0B	Primary Cyane Stripper	Centre of E side of KA plant	Residual oligomers of cyclo compounds	Small	Packed sections in this column. Decommissioning photos shown staining not deposits.
	KA	4300-F3110-00	Primary Cyane Stripper Separator	Central section of KA plant	Solid deposits of polymeric material	~20kgs	Orange coloured deposits
	KA	9100-F9110-00	Caustic effluent tank	NE side of plant boundary	Residue on low areas in base of tank, solid 'coffee grounds' type material.	<25kgs	Small amount of material.
	KA		SDC Switchroom lighting control switches	E side of old office block, N6 road.	Mercury filled electrical switches		Switches removed to safe location until waste disposal arranged. Further checks of Site switchrooms to be completed.

Residual Contamination - Acids I

Contaminated equipment - bulk							
Area	Plant	Item No.	Equipment name	Location	Process material	Estimated quantity	Comments
3	Acids 1		Dryer hopper, aka 'bunker'	Drying and Handling building above 2nd floor	Adipic acid powder deposits on discharge chutes	~100kgs	No access to clean out. Quantity estimated.
Contaminated equipment - residue							
3	Acids 1		Nos 1 & 2 Chalk Slurry bays	West side of Acids 1 plant adjacent to neutralisation pits.	Chalk / doloflour. Chalk is calcium carbonate, doloflour is calcium magnesium carbonate, both used for neutralisation of acidic effluent.	Residue only	This material has not been used since ~1998.
3	Acids 1		No.2 Salt Blend Tank	1st Floor top of tank	Mercury filled thermocouple	Small	Thermocouple identified by red tag
3	Acids 2		Scrubber liquor ringmain	Ground floor 5 metres above ground	Mercury filled capillary tubing	Small	Pressure pad removed to stores 24-05-2010, red tagged.

Residual Contamination - Nitric Plant

Contaminated equipment - residue							
Area	Plant	Item No.	Equipment name	Location	Process material	Estimated quantity	Comments
4	Nitric acid	5052 / 104	Ammonia Gas holder	Centre of plant area	Rusty / Sludge deposit	150kgs	Bulk of material has been removed. Small amount remains against side walls in annular space.
4	Nitric acid		Recovery heat exchangers	Removed from plant and on road side near Absorption unit.	Potential for residual nitric acid and/or ammonium nitrate to be trapped in plugged tubes	Small	There is potential for release of nitrous fume if trapped nitric acid is heated and for explosion if ammonium nitrate is heated. Note: all heat exchangers have potential to have residual product trapped in plugged tubes.

Residual Contamination - Polymer Plant

Contaminated equipment - residue							
Area	Plant	Item No.	Equipment name	Location	Process material	Estimated quantity	Comments
6	Nylon Polymer		Nos 3 & 4 Thermex heater stacks and convection sections	Thermex plant N side	Deposits on walls of chromium VI	Unknown	Fuel from KA plant, NVRs, contained chromium prior to non-boric operation
6	Nylon Polymer		Nos 1,2,3 & 4 heaters, radiant section tube hangers	Thermex plant N side	RCF insulation	~20kgs	
6	Nylon Polymer		Thermex vent and vapour lines	Thermex plant N side	Thermex - diphenyl salt	Unknown	Line work has been steamed out.
6	Nylon Polymer		Caprolactum duct		Caprolactum baked on walls of duct	~20kgs	
6	Nylon Polymer		Water treatment Alum tank	South of Polymer plant	Alum, (aluminium sulphate)	~25kgs	Redundant plant section. Small 1m Id x 1m Ht tank on platform. Pipework associated with this system fouled with alum.

Residual Contamination - Acids II

Contaminated equipment - bulk							
Area	Plant	Item No.	Equipment name	Location	Process material	Estimated quantity	Comments
9	Acids 2	5031-2322	Salt Prefiter tank	Salt Section adjacent to N3 road	Filter medium, Celite, some carbon and residual nylon salt	~1m3	Non hazardous material, solid deposit across base of tank. Estimate based on even layer at 25mm.
	Acids 3		Small Adipic acid adjustment tank	1st floor Salt Aqueous section	Unknown material possibly insulation cement type, insoluble in hot water	<25kgs	Non - hazardous material
	Acids 4	5031-7025 - Burner unit. 5031-7030 - Abatement unit. 5031-7090 - Economiser. 5031-7095 - Steam generator. 5031-7110 - mixing section	COGA unit	South side of N40 road	Refractory brick and ceramic fibre	Several tonnes	Material has been heated above 800°C and removal is subject to Asbestos removal procedures. The Abatement unit has a mix of refractory brick and ceramic fibre at temperatures from 1300 to 950C. The steam generators, (3 evaporators) and the economiser has temperature range of 950 to 150C.
	Acids 5	5031/503	Cooler Condenser	Absorption section	Refractory brickwork in base section	~2tes	Material has been subject to temperatures of <250C

Residual Contamination - Cooling Towers

Contaminated equipment - bulk							
Area	Plant	Item No.	Equipment name	Location	Process material	Estimated quantity	Comments
12	Cooling Tower		No.2 Cooling Tower	West side of site near boundary	Tower packing is internal and plastic with tannalised wood support framework. The wood may contain residual arsenic and chromium		
13	Cooling Tower		No.3 Cooling Tower	South side of site near boundary	Tower packing is external and tannalised wood may contain residual arsenic and chromium	Total packed volume ~11000m3	Note: the packed volume is area of packing not quantity of wood.