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ENVIRONMENTAL RISK ASSESSMENT

Environmental and sustainability solutions provided to
PLATER CHEMICALS GROUP LTD

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1.0 INTRODUCTION

The Environmental Risk Assessment has been produced in support on a substantial variation to the current permit to include changes to specific activities that have changed since the latest version of the Environmental Permit (EPR/AP3737GA) was issued in 2009. This document provides a full environmental risk assessment for the permit variation for the site.

This document has been produced in conjunction with the following documents:

- Non-Technical Summary
- Environmental Permit Management System
- Accident Management Plan
- Fugitive Emissions Management Plan

1.1 Reason for Application

Plater Chemicals is seeking a make a substantial variation to the current permit to include changes to specific activities that have changed since the latest version of the Environmental Permit (EPR/AP3737GA) was issued in 2009. These changes include the number of reaction vessels and therefore emission points, and the cessation of chromium based chemical production. There is also an existing gas fired boiler on site that now falls under the Medium Combustion Plant Directive that needs to be included in the permit variation.

The Environment Agency are aware of the changes and have requested that Plater Group vary the existing permit to bring it in line with current activities.

1.2 Assessment Process

The Guidance “Risk assessments for your environmental permit” produced by the Environment Agency and DEFRA gives a five-step process for assessing the site activity and the risk to local amenity to successful produce an Environmental Risk Assessment:

1. Identify and consider risks for your site, and the sources of the risks.
2. Identify the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from your site.
3. Identify the possible pathways from the sources of the risks to the receptors.
4. Assess risks relevant to your specific activity and check they’re acceptable and can be screened out.
5. State what you’ll do to control risks if they’re too high.

This risk assessment will identify the potential human and environmental impacts that could result from the activity of waste deposit for recovery. Risk assessments will be carried out for the following hazards:

- Odour;
- Fugitive emissions (including dust and pests);
- Noise;
- Fire;
- Surface Water Runoff; and,
- Groundwater Contamination.

Table 1 (below) presents the potential risks on site, the links between source, pathway and receptor and provides an assessment of the residual risk after the implementation of the proposed risk management strategy.

The Environment Agency's Develop a management system: environment permits guidance, states that an operator needs a plan for dealing with any incidents or events that could result in pollution or not being able to comply with a permit. The plan shall identify the likelihood of consequences of accidents and identifies the actions required to prevent accidents and mitigate any consequences including fires, vandalism and flooding amongst others. Assessment of potential accidents at the facility and the consequential effects on sensitive receptors have been accounted for in this document.

2.0 ENVIRONMENTAL RISK ASSESSMENT

P = Probability C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Airborne dust particulates.	Deposition from air.	Human - nearby businesses, residential properties and school.	Low	Low	Low	Little potential for frequent and long-term exposure for local ecosystems or people working (apart from licence holder/operator and employees), living and studying close to the site.	• Most inputs are liquid, so the production of dust will be minimal. • All solid material processed indoors. • Mechanical dust filters serve the manufacturing process. The filters have the lowest mesh size of 1 micron. • Agreements are in place with suppliers ensuring that delivery tankers will be free from dirt on arrival to site. Vehicles that do not adhere to this agreement will be turned away from site.	Low risk
Cooling tower emissions	Deposition from air.	Human - nearby businesses, residential properties and school.	Low	Low	Low	Emissions from cooling tower only contains water vapour. Potential amenity issues only.	• Cooling towers only provide cooling water to the processes on site. No emissions from it other than water vapour. • Plant will be serviced in line with manufacturers recommendations.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Airborne particulates generated during processing and by the movement of vehicles onsite.	Inhalation, ingestion and deposition from air.	Human - nearby businesses, residential properties and school.	Low	Low	Low	Little potential for frequent and long-term exposure for local ecosystems or people working (apart from licence holder/operator and employees), living and studying close to the site.	• Most inputs are liquid so the production of dust will be minimal. • All solid inputs processed indoors. • Mechanical dust filters serve the manufacturing process. The filters have the lowest mesh size of 1 micron. • Agreements are in place with suppliers ensuring that delivery tankers will be free from dirt on arrival to site. Vehicles that do not adhere to this agreement will be turned away from site.	Low risk
Airborne particulate generated during movement of product onsite.	Inhalation, ingestion and deposition from air	Human - nearby businesses, residential properties and school.	Low	Low	Low	Little potential for frequent and long term exposure for local ecosystems or people working (apart from licence holder/operator and employees), living and studying close to the site.	• Most liquids are transferred around site in sealed pipes or IBC's. • Finished product removed from site in tanks, IBCs, or bottles. • The site will be kept clean as part of the daily cleaning rota.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Odour from deliveries.	Aerial dispersal.	Human - nearby businesses, residential properties and school.	Med	Med	Med	Potential for frequent and long term exposure for people working (apart from licence holder/operator and employees), living and studying close to the site.	• Most material arrives on site in sealed tankers. • Vehicle maintenance schedule to ensure no faults with tanker or associated pipework and therefore no unwanted releases of liquid. • All liquid pumped into sealed holding tanks via sealed pipes. • Tank and pipe maintenance schedule to ensure no faults and therefore no unwanted release of liquid. • Carbon filters and scrubbers in place on certain tanks.	Low risk
Odour from production.	Aerial dispersal.	Human - nearby businesses, residential properties and school.	Med	Med	Med	Potential for frequent and long term exposure for people working (apart from licence holder/operator and employees), living and studying close to the site.	• All liquid is pumped from storage tanks to manufacturing area via sealed pipes. • Main manufacturing area is indoors. • Tank and pipe maintenance schedule to ensure no faults and therefore no unwanted release of liquid. • Production equipment maintenance schedule. • Carbon filters and scrubbers in place on certain tanks.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Noise from machinery.	Air transport.	Human - nearby businesses, residential properties and school.	Med	Low	Med	Neighbouring businesses are often sensitive to noise and likely to complain.	• Machinery maintenance schedule. • Machinery housed within buildings. • Most of machinery is fixed and cannot move around site. • Fugitive Releases Management Plan.	Low risk
Engine noise from transport vehicle and reverse warning.	Air transport	Human - nearby businesses, residential properties and school.	Med	Low	Med	Due to the proximity of the residential area south of the site they may be sensitive to noise coming from the site.	• Vehicles turn off engine when not in use. • Vehicle maintenance schedule. • Fugitive Releases Management Plan	Low risk
Vibrations from machinery.	Air and land transport	Human - nearby businesses, residential properties and school	Med	Low	Med	Neighbouring business and residents often sensitive to noise and likely to complain.	• Machinery maintenance schedule. • Machinery housed within buildings. • Most of machinery is fixed and cannot move around site. • Fugitive Releases Management Plan	Low risk
Vibrations from transport vehicles.	Air and land transport	Human - nearby businesses, residential properties and school	Med	Low	Med	Neighbouring business and residents often sensitive to noise and likely to complain.	• Vehicle maintenance schedule. • Vehicle movements do not occur during weekends. • Vehicles turn off engine when not in use. • Fugitive Releases Management Plan	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Fugitive releases of litter.	Air transport.	Human - nearby businesses, residential properties and school	Low	Med	Med	Local residents/schools/ businesses sensitive to litter and likely to complain.	• All material arrives on site in sealed containers. • All liquid pumped from vehicles into sealed storage tanks. • Only a small amount of material delivered in packaging. • Daily inspection of site and removal of litter. • Fugitive Releases Management Plan.	Low risk
Fugitive releases of waste, litter and mud on local roads.	Vehicles entering and leaving site.	Human - nearby businesses, residential properties school, and other road users.	Low	Low	Low	Local residents / businesses often sensitive to mud on roads and likely to complain.	• Daily inspection of site roads for debris • Hire of a sweeper as required. • Fugitive Releases Management Plan.	Low risk
Scavenging birds and animals.	Air transport and over land	Human - nearby businesses, residential properties and school	Low	Med	Med	Scavenging birds and vermin attracted to site and affecting neighbouring businesses, residencies or ecosystems.	• All liquids arrive on site in sealed containers. • All liquid pumped from vehicles into sealed storage tanks. • Fugitive Releases Management Plan. • Daily inspection of site and removal of litter.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• Control of pests through a BPCA approved pest control contractor. • Bait stations and pest management plan.	
Pests e.g. flies.	Air transport and over land.	Human - nearby businesses, residential properties and school.	Med	Med	Med	Insect pests e.g. fruit flies attracted to site can multiply rapidly affecting neighbouring businesses, residencies, schools and ecosystems.	• Fugitive Releases Management Plan details process for dealing with source. • Control measures include insectocutors, within the production areas, door control and regular cleaning schedules. • Control of pests through a BPCA approved pest control contractor. • Good housekeeping.	Low risk
Smoke from a fire.	Air transport.	Human - nearby businesses, residential properties and school	Med	Med	Med	Local residents / businesses often sensitive to odour and likely to complain. Fires can be deliberate or accidental.	• Licensed activities do not permit burning of material (excluding gas in the boiler). • Accident Management Plan detail consequences and control of fires. • Monitoring of any material piles. • Housekeeping controls. • Complaints procedure and investigation. • Fugitive Releases Management Plan.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Spillage of liquid outside.	Surface runoff.	Surface Water. Local water courses and habitats.	Med	Med	Med	Presence of large amounts of chemicals such as Acetic Acid 79%, Potassium Acetate 50%, and Ammonia 33.5% on site.	• All material stored on an impermeable surface. • Chemicals such as Ammonia 33.5% is immediately diluted for storage. • All tanks on site have secondary containment via a concrete bund. • Liquid will enter drainage system via a sump. From here it will flow through an effluent treatment plant before discharging to the sewer under consent. • Operators trained in use of spill kits. • COSHH assessments for hazardous materials. • Accident management plan and emergency procedures outline a methodology for loss of liquid.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Spillage of liquid inside.	Surface runoff.	Effluent discharge. Local water courses and habitats.	Med	Med	Med	Presence of large amounts of chemicals in various stages of production inside production buildings.	• All material stored on an impermeable surface. • Liquid will enter drainage system via a sump. From here it will flow through an effluent treatment plant before discharging to the sewer under consent. • Operators trained in use of spill kits. • COSHH assessments for hazardous materials. • Accident management plan and emergency procedures outline a methodology for loss of liquid.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Tank failure outside.	Surface runoff.	Effluent discharge. Surface Water. Local water courses and habitats.	Med	Med	Med	Presence of large amounts of chemicals such as Acetic Acid 79%, Potassium Acetate 50%, and Ammonia 33.5% on site.	• All material stored on an impermeable surface. • All tanks have secondary containment via a concrete bund. • Tank farms are bounded by drains which also flow into the effluent part of the drainage network. • Liquid will enter drainage system via a sump. From here it will flow through an effluent treatment plant before discharging to the sewer under consent. • Largest tank capacity is 54,000 litres and effluent drainage system has a capacity of 200,000 litres. • Tank and pipe maintenance schedule. • COSHH assessments for hazardous materials. • Accident management plan and emergency procedures outline a methodology for loss of liquid.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Tank failure inside.	Surface runoff.	Effluent discharge. Local water courses and habitats.	Med	Med	Med	Presence of large amounts of chemicals in various stages of production inside production buildings.	• All material stored on an impermeable surface. • Tanks are bunded by drains which flow into the effluent part of the drainage network. • Liquid will enter drainage system via a sump. From here it will flow through an effluent treatment plant before discharging to the sewer under consent. • Largest tank capacity is 54,000 litres and effluent drainage system has a capacity of 200,000 litres. • Tank and pipe maintenance schedule. • COSHH assessments for hazardous materials. • Accident management plan and emergency procedures outline a methodology for loss of liquid.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
General - Spillage of liquid.	Surface runoff.	Effluent discharge. Local water courses and habitats.	Med	Med	Med	Presence of large amounts of chemicals in various stages of production.	• All liquid that is spilled passes through the effluent drainage system designed to meet discharge consent limits. • Solids settle in the tanks and are removed.	Low risk
Flood Risk.	Local rivers	All	Med	Med	Med	Flood risk map for planning shows the site to be within Flood Zone 3 and at a medium risk of flooding from rivers.	• No raw materials are stored along the South boundary. • No buildings are located along the South boundary. • Local containment with sumps and pumps that transfer effluent offsite. • Option to discharge water to effluent storage tanks. • Effluent plant and transfer pumps are routinely serviced. • Flood Risk Assessment and Crisis Management Manual in place.	Low Risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Fire on site leading to run off from polluted fire fighting waters.	Direct and indirect run off.	Effluent discharge. Local water courses and habitats.	Med	High	Med	Fires can be deliberate or accidental.	• Impermeable surface. • Topography and sub-layers beneath site are such that the chance of contamination of local waterways is very low. • Drains which flow into the effluent part of the drainage network located around site. • Liquid will enter drainage system via a sump. From here it will flow through an effluent treatment plant before discharging to the sewer under consent. • Tank and pipe maintenance schedule. • Operators trained in use of spill kits. • Accident management plan and emergency procedures outline a methodology for loss of liquid.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Water consumption.	Use of potable water. Site office	Groundwater Atmosphere (CO_2 release from water treatment)	Med	Med	Med	Production process based on dilution so significant amount of potable water used.	• Weekly monitoring of water usage per tonne of production. • Projects in place to reduce usage.	Low risk
Energy consumption.	Energy from National Grid	Atmosphere	Low	Low	Low	Contribution towards anthropogenically accelerated climate change.	• Most energy used in production process supplied by on-site boiler. • Weekly monitoring of gas usage per tonne of production. • Projects in place to reduce usage.	Low risk

2.1 Boiler Plants and Associated Activity

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Odour & visible plumes - inadequate combustion or poor plume dispersion.	Aerial dispersion.	Human - nearby businesses, residential properties and school	Med	Med	Med	Med – Incomplete combustion or poor plume dispersion may result in odorous, brown smoke released from stacks.	• There is one boiler on site. The boiler has a thermal input capacity of 5.3MWth. The boiler is natural gas fuelled only. • Control system which automatically runs the burning process through setting upper and lower temperature of boiler water, controlling primary and secondary air fans, dosing screw, hydraulics etc. • Regular maintenance and stack emissions monitoring.	Low risk

Emissions – Air pollutants.	Aerial dispersion.	Local sensitive receptors.	Med	Med	Med	Results from combustion of gas. Inefficient combustion causes risk of elevated emissions.	• The boilers and stacks are operated in line with a written maintenance schedule in accordance with the manufacturer's instructions. The boiler is serviced annually by a trained service engineer. • Staff operating and maintaining the boilers receive appropriate training and instructions from the boiler manufacturers. • Staff shall be aware of how to identify and mitigate elevated or abnormal pollution emissions. • The boilers shall be operated using appropriately sourced fuels with a recognised fuel quality standard. • Good quality feedwater to ensure impurities do not lead to sediment or corrosion, thereby reducing boiler efficiency. • The boiler stack heights shall be sufficient to prevent emissions influencing ground-level air pollution concentrations.	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Emissions from boiler - particulate matter (PM10).	Aerial dispersion	Human - nearby businesses, residential properties and school.	Low	Med	Low	Boiler will run on natural gas only.	• The fuel contains only trace amounts of solids. • Optimum ratio of temperature, air and turbulence in boiler operations. • Control system which automatically runs the burning process through setting upper and lower temperature of boiler water, controlling primary and secondary air fans, dosing screw, hydraulics etc • The boiler stack height shall be sufficient to prevent emissions influencing ground-level air pollution concentrations.	Low risk
Emissions from boiler – NO_x.	Aerial dispersion	Human - nearby businesses, residential properties and school.	Med	Med	Med	Boiler has an emission limit value of 200mg/Nm^3 based on MCPD limits.	• Optimum ratio of temperature, air and turbulence in boiler operations, remotely automated by boiler. • Control system which automatically runs the burning process through setting upper and lower temperature of boiler water, controlling primary and secondary air fans, dosing screw, hydraulics etc. • The boiler stack height shall be sufficient to prevent emissions	Low risk

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							influencing ground-level air pollution concentrations.	
Emissions from boiler – Sulphur compounds.	Aerial dispersion	Human - nearby businesses, residential properties and school.	Low	Med	Low	Natural gas has low sulphur content.	• Optimum temperature and oxygen conditions to ensure complete combustion, remotely automated by boiler. • Control system which automatically runs the burning process through setting upper and lower temperature of boiler water, controlling primary and secondary air fans, dosing screw, hydraulics etc • The boiler stack height shall be sufficient to prevent emissions influencing ground-level air pollution concentrations.	Low risk
Noise from boiler.	Aerial dispersion.	Human - nearby businesses, residential properties and school.	Low	Med	Low	Boilers generate very low levels of noise.	• Regular maintenance of plant and associated equipment. • Boiler is housed internally providing noise attenuation.	Low risk

2.2 Carbon Filters and Associated Activity

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Emissions – Air pollutants	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	Each acetic acid storage vessel is connected to a carbon filter through which acetic acid vapours are filtered prior to being released to air. Activated carbon is highly porous, which gives it a large surface area for adsorbing acetic acid vapours from the effluent. The carbon filter effectively controls the	• A maintenance schedule has been produced in accordance with the manufacturer's instructions. • The carbon filters are regularly inspected for signs of damage, such as cracks, clumping, or degradation of the carbon material. • Staff operating and maintaining the carbon filters shall receive appropriate training and instructions. • Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. • The air quality released by the carbon filters shall be	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
						air quality at the point of release.	monitored on a continuous basis through Draeger tubes installed downstream of the carbon filters. Visual checks are undertaken daily to check whether a colour change within the tube has occurred. The colour change is read against a scale on the tube to quantify concentration levels. If the concentrations levels increase, this indicates that the carbon filter requires changing	
Emissions from Plant – acetic acid vapours	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	Each acetic acid storage vessel is connected to a carbon filter through which acetic acid vapours are filtered prior to being released to air.	• A maintenance schedule has been produced in accordance with the manufacturer's instructions. • The carbon filters are regularly inspected for signs of damage, such as cracks, clumping, or degradation of the carbon material.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
						Activated carbon is highly porous, which gives it a large surface area for adsorbing acetic acid vapours from the effluent. The carbon filter effectively controls the air quality at the point of release.	• Staff operating and maintaining the carbon filters shall receive appropriate training and instructions. • Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. • The air quality released by the carbon filters shall be monitored on a continuous basis through Draeger tubes installed downstream of the carbon filters. Visual checks are undertaken daily to check whether a colour change within the tube has occurred. The colour change is read against a scale on the tube to quantify concentration levels. If the concentrations levels increase, this indicates that the carbon filter requires changing	

2.3 Sodium Hydroxide and Associated Activity

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Emissions – Air pollutants	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	The hydrochloric acid storage vessel is connected to a sodium hydroxide scrubber, which effectively reduces the levels of hydrogen chloride being released to the atmosphere. When sodium hydroxide reacts with hydrochloric acid, they undergo a neutralisation reaction.	• A maintenance schedule has been produced in accordance with the manufacturer's instructions. • The sodium hydroxide scrubber components such as the piping, seals, tanks and spray nozzles shall be regularly inspected for signs of damage, such as corrosion, leaks, and clogs within the spray nozzle that may reduce scrubbing efficiency and efficacy. • The sodium hydroxide scrubber shall also be regularly checked for build-up of solids	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							and salts that may precipitate in the scrubber. ● Staff operating and maintaining the sodium hydroxide scrubbers shall receive appropriate training and instructions. ● Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. ● The scrubber solution pH level shall be monitored continuously and is alarmed if the pH level reduces below the critical limit for pH.	
Emissions from Plant – hydrogen chloride	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	Each hydrochloric acid storage vessel is connected to a sodium hydroxide scrubber, which effectively reduces the levels of hydrogen chloride	● A maintenance schedule has been produced in accordance with the manufacturer's instructions. ● The sodium hydroxide scrubber components such as the piping, seals, tanks and	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
						being released to the atmosphere. When sodium hydroxide reacts with hydrochloric acid, they undergo a neutralisation reaction.	spray nozzles shall be regularly inspected for signs of damage, such as corrosion, leaks, and clogs within the spray nozzle that may reduce scrubbing efficiency and efficacy. ● The sodium hydroxide scrubber shall also be regularly checked for build-up of solids and salts that may precipitate in the scrubber. ● Staff operating and maintaining the sodium hydroxide scrubbers shall receive appropriate training and instructions. ● Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. ● The scrubber solution pH level shall be monitored continuously and is alarmed if	

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							the pH level reduces below the critical limit for pH. ● Emission limit value for hydrogen chloride is in place for the scrubber.	

2.4 Sulphuric Acid Scrubber and Associated Activity

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Emissions – Air pollutants	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	Ammonia storage vessel is connected to a sulphuric acid scrubber, which effectively reduces the levels of ammonia gas being released to the atmosphere.	● A maintenance schedule has been produced in accordance with the manufacturer's instructions. ● The sulphuric acid scrubber components such as the piping, seals, tanks and spray nozzles shall be regularly	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
						Acidic solutions are used to remove alkaline components, e.g. ammonia. The dosing of the acid is done by means of pH regulation.[1]	inspected for signs of damage, such as corrosion, leaks, and clogs within the spray nozzle that may reduce scrubbing efficiency and efficacy. ● The sulphuric acid scrubber shall also be regularly checked for build-up of solids and salts that may precipitate in the scrubber. ● Staff operating and maintaining the sulphuric acid scrubber shall receive appropriate training and instructions. ● Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. ● The scrubber solution pH level shall be monitored	

[1] Best Available Techniques (BAT) Reference Document for Common Waste Gas Management and Treatment Systems in the Chemical Sector., Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control)

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							continuously and is alarmed if the pH level increases above the critical limit for pH.	

2.5 Bag Filter and Associated Activity

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Emissions – Air pollutants	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	Bag filter is deployed on Site to capture dust through the processing of catalytic converter material at the calciner plant. Fabric filters, often referred to as bag filters, are constructed	• A maintenance schedule has been produced in accordance with the manufacturer's instructions. • The bag filter components such as the exterior of the baghouse, ductwork, and seals shall be regularly inspected for signs of damage, leaks, or dust	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
						from porous woven or felted fabric through which gases are passed to remove dust (including PM10 and PM2.5). Removal efficiencies for dust typically range from 95 % to more than 99.9 %.	buildup, which may indicate worn or damaged filter bags or seals. The condition of the bag shall be regularly checked for wear, tears, abrasion, or holes. • Staff operating and maintaining the bag filter shall receive appropriate training and instructions. • Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. • Air flow is monitored continuously to measure the difference in pressure on either side of a dust filter. A high-pressure drop often indicates that a filter is clogged or inefficient and would highlight to the Site manager that the bag filter requires replacing.	

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Emissions from Plant - dust	Aerial dispersion	Staff, local Site users, Public and nearby sites.	Med	Med	Med	Bag filter is deployed on Site to capture dust through the processing of catalytic converter material at the calciner plant. Fabric filters, often referred to as bag filters, are constructed from porous woven or felted fabric through which gases are passed to remove dust (including PM10 and PM2.5). Removal efficiencies for dust typically range from 95 % to more than 99.9 %.	• A maintenance schedule has been produced in accordance with the manufacturer's instructions. • The bag filter components such as the exterior of the baghouse, ductwork, and seals shall be regularly inspected for signs of damage, leaks, or dust buildup, which may indicate worn or damaged filter bags or seals. The condition of the bag shall be regularly checked for wear, tears, abrasion, or holes. • Staff operating and maintaining the bag filters shall receive appropriate training and instructions. • Staff shall be aware of how to identify and mitigate elevated or abnormal emissions. • Air flow is monitored continuously to measure the	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							difference in pressure on either side of a dust filter. A high-pressure drop often indicates that a filter is clogged or inefficient and would highlight to the Site manager that the bag filter requires replacing.	

3.0 ENVIRONMENTAL MANAGEMENT

3.1 Emergency Contacts

Emergency Services	999
Local Police	0345 123 3333
Environmental Agency Hotline	0800 807 060
Health and Safety Executive	0845 345 0055
Local Authority	0345 129 8075

3.2 Emergency Site Contacts

	Operational hours	Out of Hours
Plater Chemicals	Name: Site office Contact No.: 01457860006	Name: Richard Sykes Contact No.: 07967658325