

Site Environmental Plan

Note: Due to security concerns, some information in this chapter has been removed.

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Attachment(s):

- Annual Review of the Environmental Plan
- EMS Matrix
- Facility Release/Discharge History
- Overview of Major US Environmental Laws
- Overview of US Regulatory Requirements for Air Separation Plant Operations
- Overview of US Regulatory Requirements for All Facilities
- Overview of US Regulatory Requirements for Cylinder Operations
- Site Environmental Monitoring Results Log
- Storm Water Discharge Impact Assessment
- Storm Water Pollution/Spill Prevention Control and Countermeasures Evaluation
- Summary of Energy Use
- Summary of Environmental Monitoring Requirements
- Summary of Environmental Permits
- Summary of Environmental Permits/Approvals
- Summary of Environmental Regulatory Requirements
- Summary of Hazardous Waste
- Summary of Noise Measurements
- Summary of Ozone Depleting Substances and Equipment
- US Environmental Regulations Inventory

Overview

What is the Site Environmental Plan?

The Site Environmental Plan facilitates compliance with numerous environmental regulatory planning requirements. For US sites, this includes but is not limited to Hazardous Waste Management Plans, Waste Minimization/Pollution Prevention Plans, Storm Water Pollution Prevention Plans, and Spill Prevention Control and Countermeasure Plans.

The Environmental Plan, including forms and attachments, is a principal Environmental Management System (EMS) document to facilitate registration of the facility to ISO 14001-Environmental Management Systems. Other EMS documents include BOC/Group Integrated Management System Standard (IMSS) chapters, local work instructions or IMSS chapters covering environmental management/operational control, and the Computerized Maintenance Management Software (CMMS).

The Environmental Plan includes the site organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the site environmental policy.

Site environmental performance improvements are expected to occur continually through implementation and periodic review/revision of the Environmental Plan. At a minimum, the Environmental Plan will be reviewed annually and revised appropriately. An Annual Safety, Health, Environment, and Quality Action Plan (SHEQ Plan) includes environmental programs to facilitate achievement of site environmental objectives and targets.

Purpose and Scope

Purpose

The Environmental Plan is prepared to systematically identify and implement techniques and strategies to properly manage environmental aspects, and to comply with regulatory requirements while minimizing hazardous material use, waste generation, and releases to all environmental media. The Environmental Plan is the principal document to support the site's EMS.

The Environmental Plan also supports coordination of site environmental requirements/practices related to the BOC Group/Gases Integrated Management System and Standards (IMSS), the American Chemistry Council Responsible Care® Pollution Management System and environmentally related elements.

The primary goals of the Environmental Plan are to:

- coordinate environmental management activities to continually improve site environmental compliance with BOC internal and external standards
- improve overall environmental performance continually
- identify, evaluate, and apply pollution prevention/waste minimization methodologies to improve plant efficiency, minimize site environmental impacts, risks, liabilities and costs while improving the company "bottom line"
- improve the site's overall environmental culture
- allow BOC to manage and fulfil applicable federal, state and local environmental regulatory compliance requirements. These requirements are associated with:
 - air quality (U.S. Clean Air Act and any related state and local requirements)
 - water quality (U.S. Clean Water Act and any related state and local requirements)
 - emergency planning and Community Right-to-Know Act (SARA Title 3 and any related state and local requirements)
 - waste management and underground storage tanks (U.S. Resource Conservation and Recovery Act and any related state and local requirements)
 - pollution prevention (U.S. Pollution Prevention Act and any related state and local requirements),
 - emergency response and spill contingency planning
 - additional state and local requirements.

The Environmental Plan incorporates, when applicable, planning requirements associated with:

- hazardous waste management plans
- Storm Water Pollution Prevention (SWPP) and Spill Prevention Control and Countermeasures (SPCC) Plans.
- pollution prevention/waste minimization plans
- groundwater pollution prevention plans.

Scope

This is a site document.

Site Environmental Information

Environmental Policy and Rules

SHEQ policy A copy of BOC's SHEQ Policy is posted on site, and is also available in the chapter [VVP-01-06 : SHEQ Policy](#). The SHEQ Policy will be available to all stakeholders upon request.

Site environmental rules For a detailed description of the site environmental rules, see the chapter [IMS-26-02 : Safe Work Rules for Site](#).

Environmental Aspects

What is an Environmental Aspect? Environmental Aspects are defined as, “An element of an organization/facility’s activities, products or services that can interact with the environment”. In general, environmental aspects would include but not be limited to air emissions, wastewater discharges, wastes, spills/leaks, noise, chemical storage, and resource/energy use.

Environmental Aspect Review Spreadsheet BOC has established and maintains procedures in the chapter [IMS-21-03 : Environmental Aspect/Impact Review](#) to identify the controllable environmental aspects of its activities, products or services, in order to determine those that have or can have significant impacts on the environment.

The Site Environmental Aspects Review spreadsheet identifies Environmental Aspects/Impacts related to facility activities and evaluates the significance of those Environmental Aspects/Impacts. For the current spreadsheet, see the chapter [IMS-21-04 : Environmental Aspect/Impact Review for Site](#). The site will ensure that the aspects related to these significant impacts are considered in setting environmental objectives.

Good environmental management practices The chapter [IMS-22-11 : Environmental Risk Control Strategies and Good Operating Practice](#) provides Good Environmental Management Practices (GEMPs), which are techniques and measures to be considered to minimize waste and environmental impacts from facility activities. These GEMPs should be referred to when evaluating pollution prevention opportunities.

Potential Environmental Improvement Projects Any potential Environmental Improvement Projects (EIP) are identified in the last column of the second section of the Site Environmental Aspects Review Spreadsheet. Once it has been decided that further management efforts are necessary, Environmental Management Programs (EMPs) with objectives and targets are prepared. Refer to the site SHEQ Plan.

Management of environmental objectives and targets The site will establish and maintain documented environmental objectives and targets at each relevant function and level within the organization. When establishing and reviewing our objectives, we will consider legal and other requirements, significant environmental aspects, technological options and our financial, operational and business requirements, and the views of interested parties. The objectives and targets will be consistent with BOC's SHEQ Policy, including the commitment to pollution prevention.

All significant environmental aspects are managed either through process controls, equipment, monitoring, procedures, or Environmental Management Programs (EMPs). See [Site Environmental Improvement Actions \(Page 19\)](#) for further information.

Management of Change The Management of Change procedures in the chapter *IMS-04-16 : Engineering Management of Change (MOC) for North America* will be used to identify new/modified environmental aspects from new projects or plant modifications. New/changed environmental aspects will be evaluated through the Site Environmental Aspects Review Spreadsheet to identify whether new regulations apply, whether they are significant, and whether new environmental management programs are needed.

Environmental Regulatory Status

Overview The site has established and maintains a procedure to identify and have access to legal, and other requirements to which we subscribe, that are applicable to the environmental aspects of our activities, products, or services.

IMS-22-04 through 22-09 provide interpretations and summaries of many of the environmental requirements that apply to BOC activities. Environmental Affairs will issue bulletins (generally through email) and memorandums to sites on important regulatory issues and updates, as appropriate. Chapter links are provided as follows:

- *IMS-22-04 : Environmental Regulatory Compliance*
- *IMS-22-05 : Environmental Permitting*
- *IMS-22-06 : Air Quality Regulatory Compliance*
- *IMS-22-07 : Water Quality Regulatory Compliance*
- *IMS-22-08 : Waste Regulatory Compliance*
- *IMS-22-09 : SARA Title 3 Regulatory Compliance*

The following attachments provide a summary of the US environmental regulatory requirements that may apply to the site:

- *US Environmental Regulations Inventory (see attachment in IMS-22-04-USA)*
- *Overview of Major US Environmental Laws (see attachment in IMS-22-04-USA)*
- *Overview of US Regulatory Requirements for Air Separation Plant Operations (see attachment in IMS-22-04-USA)*
- *Overview of US Regulatory Requirements for All Facilities (see attachment in IMS-22-04-USA)*
- *Overview of US Regulatory Requirements for Cylinder Operations (see attachment in IMS-22-04-USA)*

Other environmental requirements that apply to the site include BOC Group/North America IMS requirements. BOC has also committed itself to the American Chemistry Council (ACC) Responsible Care initiative, which has environmental requirements that apply to BOC manufacturing sites. This plan was established to comply with most of the BOC and Responsible Care requirements. For more information on Responsible Care, see *BOC Group Environmental Requirements (Page 14)*.

Summary of Environmental Permits/Approvals

Environmental Permits/Approvals A summary of the facility’s current environmental permit, approval, or registration status is included in the [Summary of Environmental Permits \(see attachment\)](#). Examples include waste water, storm water, and air permits/approvals, UST registrations, hazardous waste ID numbers, local approvals, etc. The Environmental Coordinator is responsible for ensuring that applicable permits/approvals are obtained for the site as well as appropriately monitoring and maintaining the site in accordance with federal, state and local requirements, and BOC's policies and procedures.

Appropriate regulatory requirements will be evaluated (state and local environmental codes), and/or Environmental Affairs will be contacted if help is needed to determine whether an activity requires a permit/approval.

Ozone Depleting Substances (ODSs)

ODS equipment The site does not use [Ozone Depleting Substances \(ODSs\)](#) as process refrigerants.

EPA Risk Management Plan (RMP)

RMP Based on a review of the thresholds for hazardous substances affected by the EPA Risk Management Program (RMP), the site does have a covered processes necessitating compliance with the RMP requirements. For more information on EPA RMP requirements, see the following chapters:

- [IMS-02-11 : PSM/RMP Overview](#)
- [IMS-02-12 : PSM/RMP Operating Procedures](#)
- [IMS-02-13 : PSM/RMP Applicability and Program Levels](#)

The covered process and associated chemicals are identified in the Risk Management Plan documentation and certification for the TCS Plant is held at a corporate level and can be obtained upon request.

PCBs

PCB removal No regulated PCBs are presently on this site.

Operational Control

Identifying operation control activities The site will identify operations and activities associated with the identified significant environmental aspects in line with the BOC policy, objectives and targets. BOC will plan these activities, including maintenance, to ensure that they are carried out under specified conditions by:

- establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets
- stipulating operating criteria in the procedures
- establishing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the site and communicating relevant procedures and requirements to suppliers and contractors.

Operational control procedures

The site has established the following operational control procedures to maintain and improve site environmental performance:

- ***GOP-07-01 : Special Materials Receipt, Inspection and Disposition***
- ***GOP-07-02 : Inspection and Maintenance of Drainage Controls***
- ***Material and Waste Management (Page 8)***
- ***IMS-32-04 : Contractor Safety Program in North America***
- ***IMS-28-09 : Hazard Communication Program for North America***
- ***IMS-12-01 : Planned General Inspections***
- ***Hazardous Waste Storage (in IMS-22-08)***
- Plant Operations and Maintenance IMSS Chapters:
 - [Plant Maintenance](#)
- ***IMS-09-02 : Maintenance, Mechanical Integrity and Condition Monitoring System for North America***
- ***IMS-04-16 : Engineering Management of Change (MOC) for North America***
- ***IMS-06-02 : Purchasing Requirements for North America***
- ***IMS-25-11 : Emergency Plan for Site***
- ***IMS-14-02 : Corrective and Preventive Action Process for North America***
- GE Water Treatment Operating Manual
- Machinery OEM Manuals

Material and Waste Management

Handling and storage

The site is implementing procedures and programs to ensure proper handling and storage of hazardous materials and hazardous/non-hazardous wastes. These procedures and programs are continually reviewed/monitored in order to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of materials/wastes to the air, soil, or surface water, which could threaten human health, the environment or the community. For further information, see the chapter ***IMS-22-08 : Waste Regulatory Compliance***

Hazardous waste descriptions and disposal

The waste treatment/disposal methods and contractor handling each hazardous waste stream for the site are identified in ***Summary of Hazardous Waste (see attachment)***.

Waste Generator Designations

Hazardous waste generator designation and storage limits

This site is a small quantity generator.

Small site generators may accumulate hazardous waste generated on-site for up to 180 days if the quantity of waste stored does not exceed 13,200 pounds at any one time. If the waste is to be transported more than 200 miles from the facility for disposal, a small quantity generator may store up to 13,200 pounds of hazardous waste on-site for up to 270 days.

Waste handling procedures Waste handling procedures for hazardous/industrial wastes are reviewed with site personnel responsible for handling these wastes through Chemical Hazard Awareness training and annual hazardous waste training programs. For more information, see the chapters *IMS-22-08 : Waste Regulatory Compliance* and *IMS-28-09 : Hazard Communication Program for North America*.

The following IMSS chapters provide additional information regarding the proper handling and disposal of wastes at this site:

- *IMS-23-01 : About Waste Management*
- *IMS-23-02 : Waste Minimization / Pollution Prevention Planning*
- *IMS-23-03 : Hazards Associated with Waste*
- *IMS-23-04 : Generation, Storage and Handling of Waste*
- *IMS-23-05 : Hazardous and Special Waste Transfer and Disposal*

Inspection of waste accumulation and storage areas Federal and state waste management regulations require that hazardous waste accumulation and satellite storage areas be inspected weekly for further information, see *Hazardous Waste Storage (in IMS-22-08)* in the chapter Waste Regulatory Compliance.

Waste Transportation and Disposal

Responsibility Under the “cradle to grave” philosophy of the Resource Conservation and Recovery Act (RCRA), the ultimate responsibility for hazardous waste disposal rests with the site as the generator. For this reason, it is important that the facility ensures that wastes are properly transported and properly recycled/treated/disposed. The site will ensure that a reputable waste carrier is used and that the recycling/treatment/disposal firm will recycle/treat/dispose of the waste in accordance with regulatory and BOC requirements.

Selection of transporter and treatment/disposal facility Hazardous waste transporter and treatment/disposal firms **must** be registered with the EPA and have an EPA ID number. However, this is not an assurance of reputability. See *Manifesting Hazardous Waste (in IMS-22-08)* for further information on waste transport and disposal.

Waste manifests All Hazardous Waste Shipping Manifests are signed by one of the site personnel who have received appropriate training in understanding the basic contents/concept of the Hazardous Waste Shipping Manifest. Completion of *IMS-22-08 : Waste Regulatory Compliance* meets the training requirements.

States may require that a specific format be used for those shipments ultimately disposed within their jurisdiction. BOC policy is to maintain these manifests for the entire life of the facility due to potential future needs for this information.

Storage Tanks, Bulk Deliveries

Underground Storage Tanks (USTs) This site does not have USTs.

Above Ground Storage Tanks (ASTs)	<p>This site does have ASTs. This site does have above ground or underground piping associated with the AST. This site does have loading/unloading connections of pipelines.</p> <p>ASTs and other related information are also identified on the Storm Water Pollution/Spill Prevention Control and Countermeasures Evaluation (see attachment). These tanks are inspected monthly for spills/leaks/corrosion etc. using the General Inspection Form. The on-site technicians are responsible for conducting and documenting required tank and line tightness tests every five (5) years. All of these tanks are protected from weather and are provided with secondary containment.</p> <p>Note: Further information on AST secondary containment, container construction, inspections and piping requirements can be found in the chapter IMS-22-07 : Water Quality Regulatory Compliance.</p>
Potential Spills	<p>If a spill were to occur during loading, unloading it would be contained through a berm and by use of spill cleanup materials</p> <p>Note: More information on management of USTs and ASTs can be found in the chapter IMS-22-12 : Environmental Control of Site Storage.</p>
Bulk chemical deliveries	<p>For further information regarding bulk chemical deliveries, see the chapter GOP-07-01 : Special Material Receipt, Inspection and Disposition</p>

Storm Water and Spill Prevention Control and Countermeasure (SPCC) Requirements

Storm water permitting requirements	<p>This facility is subject to storm water permitting requirements. For additional information on storm water permits, see the following chapters:</p> <ul style="list-style-type: none"> • IMS-22-05 : Environmental Permitting • IMS-22-07 : Water Quality Regulatory Compliance
SPCC Plan Applicability	<p>The quantities of oil stored on-site are identified in Storm Water Pollution/Spill Prevention Control and Countermeasures Evaluation (see attachment). The site is required to develop and implement a SPCC Plan. For further information, see the chapter Spill Prevention Control and Countermeasures (SPCC) Plan (in IMS-22-07).</p> <p>With proper handling and due to strict maintenance procedures, significant oil releases would be extremely rare. Equipment/controls are also in place to prevent or contain a release should a release occur.</p> <p>Note: The Site Emergency Plan details procedures to be followed if a significant release (greater than 25 gallons) of oil occurs.</p>
SPCC and SWPP plans	<p>The Environmental Plan, together with the IMS-25-11 : Emergency Plan for Site enable BOC facilities to comply with the SPCC and SWPP regulatory planning requirements.</p>

SPCC cross reference A cross-reference table, showing the page number or location of each item required in the 40 C.F.R. part 112 SPCC regulations, can be found in the **SPCC Cross Reference (in IMS-22-07)** section of the chapter Water Quality Regulatory Compliance.

Chemical storage areas For chemical storage areas (including oil containing equipment), ensure that drain valves are locked or otherwise protected.

Facility Drainage Pathways

Facility and wastewater drainage Stormwater from the 2 outfalls runs into an off-site common storm drain that drains into (sensitive material-removed).

Storm Water/SPCC Discharge Evaluations

Analysis of storage, handling and processing areas

The ***Storm Water Pollution/Spill Prevention Control and Countermeasures Evaluation (see attachment)*** analyzes all hazardous material and/or waste storage, handling/processing areas, oil-filled equipment, and soil erosion areas for their potential to impact storm water discharges or nearby water bodies. This table also describes the chemical type, maximum quantity, secondary containment type, capacity and controls, and equipment rate of flow if there is a release.

These areas have been evaluated to determine whether Good Environmental Management Practices (GEMP) are being implemented and whether a contamination threat to storm water/nearby water bodies exists.

Based on this assessment, any GEMP/Pollution Prevention measures to be incorporated to eliminate/minimize water quality impacts are identified. Areas listed on the Storm Water Pollution and Spill Prevention Control and Countermeasures Evaluation are cross-referenced to the Site Map.

The ***Storm Water Discharge Impact Assessment (see attachment)*** documents an evaluation of drainage pathways/outfalls to determine whether they are being impacted by storm water discharges. It identifies the contaminants that can be present, the potential source(s) of these contaminants, and potential corrective actions that should be taken to avoid storm water/hazardous material release impacts.

This table also identifies any allowable non-storm water discharges. Some discharges are allowed if they are not contaminated. These include discharges from the following:

- fire fighting activities
- fire hydrant flushings
- potable water
- uncontaminated air conditioner or compressor condensate
- irrigation drainage
- landscape watering
- pavement wash waters where no detergents are used and no spills have occurred
- routine external building washing
- foundation or footing drains not contaminated
- incidental windblown mist from cooling towers.

Review your state general permit to determine if your site's non-storm water discharges are allowed. These drainage pathways/outfalls are cross-referenced on the Site Map.

Note: Projects/programs identified to prevent or minimize storm water impacts are documented in the SHEQ Annual Action Plan.

Secondary containment requirements

If secondary containment for oil-containing equipment is not available, or if secondary containment cannot contain 110% of the discharge, the site will use monthly inspections (see the chapter ***IMS-12-01 : Planned General Inspections*** for further information) and procedures in the Emergency Plan to prevent discharges.

To determine percentage capacity of secondary containment use Secondary Containment Calculations in the ***Storm Water Pollution/Spill Prevention Control and Countermeasures Evaluation (see attachment)*** for each containment area. For further information, see the chapter ***Spill Prevention Control and Countermeasure (SPCC) Plans (in IMS-22-07)***

For guidelines on secondary containment management see the chapter ***GOP-07-02 : Inspection and Maintenance of Drainage Controls***.

Discharge History

Summary of significant material releases

The *Facility Release/Discharge History (see attachment)* summarizes all significant releases of petroleum, hazardous materials or hazardous wastes that could have impacted storm water or adjacent water bodies for the past three years.

This list includes all discharges subject to the SWPP Plan, SPCC Plan, and SARA/CERCLA/state hazardous substance release reporting requirements.

Petroleum, hazardous material, or hazardous waste release reporting requirements are summarized in *Recordkeeping (Page 21)* and the chapter *IMS-22-09 : SARA Title 3 Regulatory Compliance*.

Discharge/Release Response

Emergencies

Emergency Preparedness and Response (Page 17) refers to plans and procedures for responding to a discharge/release of a hazardous material as well as other emergencies. Additional information on site emergency planning is available in the chapter *IMS-25-11 : Emergency Plan for Site*.

Storm Water Monitoring

Monitoring requirements

Monitoring requirements are generally included in a storm water permit to measure the effectiveness of the SWPP Plan and best management practices in minimizing/removing pollutants in storm water discharges.

Storm water visual observations of each site outfall are required on a quarterly or monthly basis and will be documented on the *Summary of Environmental Monitoring Requirements (see attachment)* or with a similar method.

Visual observations may also be required quarterly to ensure non-storm waters are not discharged. See *Analysis of storage, handling and processing areas* for more information on non-storm water discharges that may be allowed.

If storm water pollution is found or Good Environmental Management Practices (GEMPs) are found to be lacking, corrective actions will be documented following the procedures in the chapter *IMS-14-02 : Corrective and Preventive Action Process for North America*. Visual observations normally remain on site and are not submitted to the EPA, although some states may require results.

Visual examinations will be made of grab samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) when the runoff or snowmelt begins discharging. Observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution will be made. The examination will be conducted in a well-lit area. No analytical tests are required on these samples.

Storm water monitoring

In addition to visual monitoring, specific sampling and analysis of storm water samples **must** be performed as identified in *Summary of Environmental Monitoring Requirements (see attachment)*.

The state general permit or individual permit **must** be reviewed to determine the frequency and type of monitoring required. Some states may require different sampling or no sampling depending on the year of the permit.

Storm water discharge sampling

For further information, see *Storm Water Sampling (in IMS-22-07)* in the chapter Water Quality Regulatory Compliance.

BOC Group Environmental Requirements

BOC Environmental Requirements and MHRP

BOC sites will follow applicable IMS chapters (Global, Regional/National, Site) to comply with the BOC Group requirements as well as regulatory and other applicable requirements. The Environmental Plan facilitates implementation of most of BOC and Group requirements.

The BOC Group also has an internal Major Hazards Review Program (MHRP). This program was established to identify potential off-site risks associated with a major hazardous material release.

Licenses are issued by the company, which enables each site to store certain quantities of hazardous materials. License conditions may be incorporated to require further site specific release prevention or emergency measures. The license is posted on site.

Responsible Care As a member of the ACC, BOC is committed to the Responsible Care® initiative. This plan and IMS environmental chapters were developed to ensure compliance with the Responsible Care Codes.

Environmental Impact Assessment/Due Diligence

Documentation requirements

For smaller projects follow the BOC Management of Change procedures. For further information, see the chapter *IMS-04-16 : Engineering Management of Change (MOC) for North America*. Checklists have been prepared to facilitate an evaluation of whether appropriate safety and environmental issues are being properly addressed, and to ensure that new environmental aspects are identified and addressed.

For major projects procedures are provided in the chapter *IMS-21-05 : Environmental Due Diligence*.

Soil/Ground water Remediation

Potential sources The site has identified potential sources of soil/groundwater contamination generated by process and non-process related activities on the Site Environmental Aspects Review Spreadsheet, available in the chapter *IMS-21-04 : Environmental Aspect/Impact Review for Site*.

Sources that could contribute to potential soil/ground water contamination through spills include the following:

- Oil from compressor leaks
- Ethylene glycol spills
- Water treatment chemicals
- Miscellaneous chemical spills (small quantities)
- Underground piping
- Storm water run-off
- Process discharges
- Sumps
- Building drains
- Material/waste storage containers and associated handling activities
- Substation transformers

When these pollution sources are involved with environmental aspects that are determined to be significant, further potential environmental improvement activities are evaluated on the Site Environmental Aspects Review Spreadsheet. Good Environmental Practices (GEMPs) are used to the extent practicable to eliminate or minimize these potential pollution sources. For further information on GEMPs, see the chapter *IMS-22-11 : Environmental Risk Control Strategies and Good Operating Practices*.

If any significant soil or groundwater contamination is suspected or known, investigations and/or cleanup will be managed by Environmental Affairs.

Noise

BOC policy It is the BOC policy that, at a minimum, each site will comply with noise limitations established by local, state or federal authorities. Noise producing activities including noise related to deliveries and transportation (surrounding neighborhood noise impacts) are considered.

Noise producing sources at the site include:

- Pumps
- Compressors/expanders
- Public address systems
- Loading and unloading activities
- Cooling tower fans
- Process disturbances

If perimeter noise fence line measurements were conducted at the site they are identified in *Summary of Noise Measurements (see attachment)*. The Summary includes the following:

- noise complaints within the past five years
- if reduction measures have been taken or will be taken

For further information on environmental noise, see the chapter *IMS-22-13 : Environmental Noise*.

Suppliers and Contractors

Accounting guidelines

It is important to consider identifiable significant environmental aspects and impacts associated with all purchases and services. Environmental aspects/impacts associated with purchased products and services are to be identified on the Site Environmental Aspects Review Spreadsheet and evaluated for their significance. For the spreadsheet, see the chapter [IMS-21-04 : Environmental Aspect/Impact Review for Site](#).

Whenever reasonably practicable, the site will strive to utilize purchased products and services having the lowest overall environmental impact. For example, information from a chemical MSDS or from the energy efficiency rating of equipment should be considered in this evaluation.

Environmental commitment of suppliers

It is also important to BOC that our suppliers of products and services (contractors) understand our environmental procedures and requirements and that they act in an environmentally responsible manner from both a social and a reliable supply perspective.

For suppliers this is principally accomplished through the chapter [IMS-06-02 : Purchasing Requirements for North America](#). The Supplier Evaluation and Selection process also evaluates critical suppliers from an environmental perspective.

For further information, see the following chapters:

- [IMS-32-04 : Contractor Safety Program in North America](#)
- [IMS-32-03 : Control of Agency or Temporary Workers or Casual Employees](#)

Energy

Environmental impact of energy use

Energy consumption directly and indirectly impacts the environment through the generation, transmission, and distribution of energy. All BOC sites are encouraged to consider the environmental impact of energy use as well as economic issues. The site has considered the amount of energy use on an annual basis and provided this information in the BOC Group Electronic Environmental Survey. For more information see, [Summary of Energy Use \(see attachment\)](#).

This site will evaluate the energy usage on-site and identify measures to be taken for energy conservation. This can be accomplished through a site energy audit. An Energy Audit Checklist is available in the [IMS-22-14 : Energy Conservation](#) chapter to help sites conduct a basic review of energy reduction opportunities at general facilities. Information on Optimizing Plant Performance can be found in the following chapters:

- [ASU-21-01 : Optimizing Plant Performance](#)
- [ASU-31-06 : Plant Optimization](#)

Emergency Preparedness and Response

Emergency plan development and maintenance The site will establish and maintain procedures to identify the potential for and response to accidents and emergency situations, and for preventing and mitigating the environmental impact that may be associated with them. The site will review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations. The site will also periodically test such procedures where practicable.

The site maintains emergency systems, plans, and resources appropriate for potential emergencies. Potential emergencies that may have an environmental impact will be considered and contingency plans developed.

These plans will also comply with regulatory requirements of the EPA, OSHA, as well as the SPCC Contingency planning requirements and other applicable Federal, State, and Local agencies. For this site's Emergency Plan, see the *IMS-25-11 : Emergency Plan for Site*.

Emergency drills Drills on the Site Emergency Plan are conducted according to the procedures in the chapter *IMS-25-15 : Emergency Drills*.

Hazardous material releases All reportable releases or discharges of petroleum product, hazardous materials or hazardous wastes will be reported to the appropriate federal, state and/or local environmental agencies. Document release notifications using the BOC Spill/Release Reporting Form or state required form. For the form, see *Accident and Incident Notification (in IMS-24-05)* in the chapter Accident/Incident Investigation and Reporting in North America.

Note: Reportable Releases are discussed in the chapter *IMS-22-09 : SARA Title 3 Regulatory Compliance*.

Training and Communications

Training

Employee training All existing and new site employees receive appropriate environmental training to ensure that they are aware of their responsibilities and applicable site policies, rules, and procedures to protect the environment and community. Determination of which individuals receive environmental training is based on their specific job responsibilities. For further information see the chapter *IMS-18-08 : Training Process for North America*

Environmental orientation awareness training	<p>Site employees receive environmental awareness orientation training through <i>The Environment and You</i>, which focuses on the following information:</p> <ul style="list-style-type: none"> • BOC and site environmental policies and procedures, and employee responsibilities • site environmental plan implementation • conformance with environmental regulations • significant environmental aspects • general environmental awareness including consequences for improper environmental management • spill response and reporting • chemical and waste management • GEMPs • pollution prevention general techniques and advantages/benefits <p>Environmental awareness orientation training will be provided to all new employees within 90 days of hire. For further information, see the chapter IMS-22-02 : Environmental Management System (EMS) for North America.</p>
Other environmental training	<p>Other environmental training includes:</p> <ul style="list-style-type: none"> • Chemical hazard awareness training, see the chapter IMS-28-09 : Hazard Communication Program for North America • Handling hazardous waste and chemicals receive training ,see the chapter IMS-22-08 : Waste Regulatory Compliance • Pollution prevention training (storm water and SPCC), see the chapter IMS-22-07 : Water Quality Regulatory Compliance. • General/housekeeping inspections training, see the chapter IMS-12-01 : Planned General Inspections • Site emergency plan training, see the chapter IMS-25-11 : Emergency Plan for Site
Training records	<p>Records of employee training completion are maintained by the facility in Traccess. Copies of other training records are also maintained, as appropriate.</p>

Communication

Communication policies	<p>The site will establish and maintain procedures with regard to its environmental aspects and environmental management system for:</p> <ul style="list-style-type: none"> • internal communication between the site’s various levels and functions • receiving, documenting, and responding to relevant communication from external interested parties. The site will consider processes for external communication on its significant environmental aspects and record its decision. <p>Communication involves an ongoing dialogue with these stakeholders to provide information and responses to inquiries relating to our environmental/safety/health/emergency response programs and performance and to provide an opportunity for stakeholder feedback/input. This is accomplished through the chapter IMS-29-08 : Community Outreach and External Communication, which includes a process to document and manage stakeholder complaints and/or inquiries. Each BOC facility is expected to conduct employee and community awareness efforts appropriate for the site size, activities, and significant environmental aspects.</p>
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Monitoring and Measurement

Overview	<p>The site will establish and maintain documented procedures to monitor and measure on a regular basis the key characteristics of our operations and activities that can have a significant impact on the environment. This will include the recording of information to track performance, relevant operational controls and conformance with our objectives and targets.</p> <p>At a minimum, monitoring will be conducted to meet regulatory requirements and to measure ongoing performance with respect to significant environmental aspects. For further information, see the "Monitoring and Maintenance" column of the Site Environmental Aspects Review Spreadsheet, available in the chapter <i>IMS-21-04 : Environmental Aspect/Impact Review for Site</i>. The <i>Site Environmental Monitoring Results Log (see attachment in IMS-22-05-USA)</i> provides a method of documenting the monitoring and evaluations that have been/will be conducted at this site.</p>
Monitoring Equipment	<p>Monitoring equipment will be calibrated and maintained and records of this process will be retained according to procedures in the chapter <i>IMS-11-03 : Inspection, Measuring and Test Equipment (IMTE) Calibration</i>.</p>
Internal Audit Program	<p>BOC will establish and maintain programs and procedures for periodic environmental management system audits to be carried out, in order to provide information on the results of audits to management. For further information, see the chapter <i>IMS-17-15 : Audit Program Requirements for North America</i>.</p>
Planned General Inspections	<p>Site personnel are periodically required to perform site inspections. For further information, see the chapter <i>IMS-12-01 : Planned General Inspections</i>.</p>
Weekly Hazardous Waste Inspections	<p>If hazardous waste is generated and stored on-site, the storage areas must be inspected at least weekly. For further information, see <i>Hazardous Waste Storage (in IMS-22-08)</i> in the chapter Waste Regulatory Compliance.</p>

Site Environmental Improvement Actions

Corrective and Preventive Actions	<p>The site will implement and record any changes in the documented procedures resulting from corrective and preventive actions. The chapter <i>IMS-14-02 : Corrective and Preventive Action Process for North America</i> provides the procedures for Corrective and Preventive Actions.</p> <p>Preventive actions to avoid potential non-conformance issues are discussed throughout this plan but are principally identified in <i>Operational Control (Page 7)</i>. In particular, they can involve inventory control procedures, equipment and process controls, training, operational procedures, monitoring and maintenance, and other measures. The chapter <i>IMS-22-11 : Environmental Risk Control Strategies and Good Operating Practices</i> also provides potential preventive actions that can be used.</p>
SHEQ Action Plan	<p>The SHEQ Action Plan includes an annual summary of planned site environmental improvement programs to be conducted at the site and will be updated on an annual basis at a minimum. See the chapter <i>IMS-01-09 : Planning and Performance Process for Continual Improvement</i> for more information on the SHEQ Action Plan.</p>

Management Review The management review will address the possible need for changes to policy, objectives, and other elements of the EMS in light of audit results, facility changes, and the commitment to continual improvement. This management review is integrated with other management systems, such as Quality and Safety, and is conducted according to the chapter *IMS-01-07 : Management Review Process for North America*.

Environmental Management System Documentation

Documentation maintenance The chapter Environmental Management System (EMS) for North America provides an *EMS Matrix (see attachment in IMS-22-02-GAM)* identifying where BOC core EMS elements can be found to meet the ISO 14001 EMS standard.

Document Control Document control procedures are provided in the *IMS-05-01 : Document and Data Control* chapter.

Environmental Plan Maintenance and Review

Environmental plan review A comprehensive review of this SWPP/SPCC plan and its implementation, as well as the overall site environmental plan **must** be conducted annually. The plan review criteria includes:

- confirmation of the accuracy of potential pollution sources
- evaluation of the effectiveness
- assessment of compliance with the terms and conditions of the storm water permit.
- determination if more effective control technology exists for SPCC requirements
- A facility inspection including:
 - material handling areas, storage areas, and other potential sources of pollution will be visually inspected
 - review the adequacy of potential pollutant sources and pollution prevention measures and controls identified,(such as spill kits)

Documenting plan reviews The annual review of the environmental plan is documented using the *Annual Review of the Environmental Plan (see attachment in IMS-22-02-GAM)* in the chapter Environmental Management System (EMS) for North America.

It summarizes the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken.

Note: The Annual Review of Environmental Plan meets the requirements of the storm water annual review and SWPPP certification statement, and SPCC five year review requirements.

Environmental Plan maintenance and review

This review can be conducted:

- during SHEQ committee meetings
- during integrated management review meetings
- whenever a change occurs that would affect the Environmental Plan
- at other appropriate times.

SPCC Certification

A professional engineer **must** certify that the SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and with the requirements of the SPCC rule. This is done initially and when technical changes are made to the site.

The original copy of the certification will be kept in the Environmental files at BOC - Murray Hill.

Changes to the SPCC plan

The plan must be updated whenever there is a change that may affect the potential for discharge of oil including :

- facility design or construction,
- operation
- maintenance

Also, if the change is technical in nature, a Professional Engineer must certify the amendment.

Examples of technical changes include changes to:

- Equipment
- secondary containment
- drainage changes
- an increase or decrease in oil volume.

Examples of non-technical changes are:

- changes to the contact list
- more stringent requirements for storm water discharges to comply with NPDES rules
- phone numbers
- product changes if the new product is compatible with conditions in the existing tank and secondary containment,
- any other changes, which do not affect the potential to discharge oil.

Recordkeeping

Identification, maintenance, and disposition of records

All environmental records will be retained according to the guidelines outlined in the chapter **IMS-16-06 : Generation, Use and Maintenance of Records for North America**. Unless specified otherwise, EMS records **must** be maintained for a minimum of 3 years.

- Other records** Other records that may be required to effectively implement the site EMS may include:
- AST release control and inspection records
 - Refrigerant losses, such as ODSs, ammonia, etc.
 - Chemical inventories
 - Electricity, fuel and water use
 - Contractor/supplier environmental information and certifications/licenses
 - Inspection and calibration records
 - Audit records
 - Corrective and preventive action records
 - SHEQ Committee meeting minutes
 - Management review records

Forms and Attachments

- Forms** The following forms are available in this chapter:
- *Facility Release/Discharge History (see attachment)*
 - *Summary of Environmental Monitoring Requirements (see attachment)*
 - *Storm Water Discharge Impact Assessment (see attachment)*
 - *Storm Water Pollution/Spill Prevention Control and Countermeasures Evaluation (see attachment)*
 - *Summary of Energy Use (see attachment)*
 - *Summary of Environmental Permits/Approvals (see attachment)*
 - *Summary of Environmental Regulatory Requirements (see attachment)*
 - *Summary of Hazardous Waste (see attachment)*
 - *Summary of Noise Measurements (see attachment)*
 - *Summary of Ozone Depleting Substances and Equipment (see attachment)*