COVER PAGE AND DECLARATION

	Master of Business Administration (M.B.A.)
Specialisation:	Finance
Affiliated Center:	CEO Business School
Module Code & Module Title:	MGT550 : MANAGING OPERATIONS
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Student ID:	EIU2020501
Word Count:	3793
Date of Submission:	26-02-2023

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1 Introduction

In today's competitive business landscape, companies are always looking for ways to streamline their operations, reduce costs, and improve efficiency. For manufacturers like the Big Green Tractor, these goals can be achieved through the implementation of a well-planned and effective operational industrial streamline procedural guide. Such a guide can help the company optimize their manufacturing processes, minimize defects, and create a greener production process, while maintaining their commitment to producing high-quality agricultural equipment.

This assignment aims to create an operational industrial streamline procedural guide that will help the Big Green Tractor from start to finish with their productions. The guide will include recommendations for more cost-efficient manufacturing processes, a thorough plan to minimize defects throughout the manufacturing process, and the use of 21st century tools to create a greener process. By implementing the recommendations in this guide, the Big Green Tractor can improve their manufacturing processes, reduce costs, and minimize their environmental impact, while maintaining their commitment to producing high-quality agricultural equipment. As a socially responsible company, the Big Green Tractor is committed to minimizing their environmental impact and promoting sustainability in their operations. This assignment aims to develop a socially responsible operational guide for the Big Green Tractor for their pollutants. The guide will include industrial standards on the disposal of chemical waste and green alternatives to traditional manufacturing processes. By implementing these guidelines, the Big Green Tractor can reduce their environmental impact and promote sustainable development, while maintaining their commitment to producing high-quality agricultural equipment.

2 Industrial streamline procedural guide

This section tends to provide a systematic and organized approach to manufacturing processes, with the goal of improving efficiency, reducing costs, minimizing defects, and creating a more sustainable and socially responsible operation (Johnson, 2018). The guide outlines the steps to be taken from start to finish in the production process, including identifying areas for improvement, researching and recommending best practices and technologies, and implementing changes to the process. The guide serves as a reference tool for all employees involved in the manufacturing process, ensuring that everyone is following the same procedures and working towards the same

goals (Smith, 2020). Ultimately, the purpose of an industrial streamline procedural guide is to help companies improve their operations, create better products, and stay competitive in their respective industries.

This guide is designed to help Big Green Tractor streamline its production process, reduce errors, and increase efficiency (World Business Council for Sustainable Development, 2019). The guide outlines the step-by-step process for producing tractors, from start to finish. The guide is intended to be used by all employees involved in the production process, from the production manager to the assembly line workers.

Planning and Preparation:

- This step involves planning and preparing for production. It includes:
- Identifying the types and quantities of tractors to be produced.
- Scheduling production activities based on the identified types and quantities of tractors.
- Ensuring that all necessary raw materials and components are available.
- Ensuring that all equipment and tools are in good working condition.
- Setting up workstations and assembly lines.

Assembly:

- This step involves assembling the different components of the tractors. It includes:
- Using assembly drawings and diagrams to guide the assembly process.
- Following assembly instructions carefully to ensure that all components are assembled correctly.
- Performing quality checks at various stages of the assembly process to ensure that the components are assembled correctly and meet the required standards.
- Ensuring that all assembly tools and equipment are used correctly and maintained in good working condition.
- Ensuring that all safety procedures are followed during the assembly process.

Testing:

- This step involves testing the assembled tractors to ensure that they meet the required standards. It includes:
- Performing functional tests to ensure that all components are working correctly.
- Performing performance tests to ensure that the tractors meet the required performance standards.
- Performing quality checks to ensure that the tractors meet the required quality standards.
- Performing safety tests to ensure that the tractors are safe to operate.

Finishing and Packaging:

- This step involves finishing the tractors and packaging them for shipping. It includes:
- Applying any required finishing touches to the tractors, such as painting or polishing.
- Inspecting the tractors to ensure that they meet the required standards.
- Packaging the tractors securely to ensure that they are not damaged during shipping.
- Labeling the packages with the required information, such as the type and quantity of tractor

2.1 Recommendations

Here are some recommendations for cost-efficient manufacturing processes that can help the big green tractor:

- Lean Manufacturing: Lean manufacturing is a cost-efficient process that eliminates waste and improves efficiency (Ahmad, 2021). It involves identifying and eliminating non-value-added activities, optimizing production flow, and continuously improving the manufacturing process. By adopting lean manufacturing principles, the big green tractor can reduce costs, improve quality, and increase throughput.
- Automation: Automation can help reduce labor costs, improve quality, and increase production output (Berg, 2021). By automating repetitive and manual tasks, the big green tractor can reduce errors and improve overall efficiency. Automation can also help to

increase production flexibility and reduce lead times, which can help the company respond to changing customer demand.

- 3D Printing: 3D printing is a cost-efficient manufacturing process that can produce complex parts and components quickly and with minimal waste. By adopting 3D printing technology, the big green tractor can reduce manufacturing costs, shorten lead times, and improve product quality. 3D printing can also facilitate product customization and help to reduce the need for expensive tooling and molds.
- Renewable Energy: The big green tractor can reduce its energy costs by adopting renewable energy sources such as solar, wind, or geothermal (Greenpeace, 2021). By using renewable energy, the company can reduce its reliance on traditional fossil fuels, reduce greenhouse gas emissions, and improve its overall sustainability.
- Supplier Collaboration: Collaboration with suppliers can help to reduce manufacturing costs. By working closely with suppliers, the big green tractor can identify opportunities to reduce material costs, optimize logistics, and improve quality (Choprha, 2019). Supplier collaboration can also help to reduce lead times and improve product availability, which can improve customer satisfaction.

By adopting these cost-efficient manufacturing processes, the big green tractor can improve its overall profitability and sustainability. These recommendations can help the company to reduce costs, improve quality, and respond more quickly to changing customer demands.

2.2 Plan to minimize defects throughout the manufacturing process

Here is a Plan to Minimize Defects Throughout the Manufacturing Process

Set Quality Standards:

- Define and set quality standards for the manufacturing process.
- Establish criteria that define what constitutes an acceptable and unacceptable product (Hu, 2021).
- Ensure that these standards are communicated effectively to all employees.

Train Employees:

- Provide comprehensive training for all employees on the quality standards, as well as the procedures and equipment used in the manufacturing process.
- Train employees on identifying defects and how to address them in a timely manner (Kuo, 2020).
- Conduct regular training sessions to keep employees up-to-date on any changes to the manufacturing process.

Use Quality Control Tools:

- Implement quality control tools such as Statistical Process Control (SPC), Failure Mode and Effects Analysis (FMEA), and Root Cause Analysis (RCA) to identify and address potential defects in the manufacturing process (Hu, 2021).
- Use these tools to identify defects at various stages of the manufacturing process.

Monitor Key Performance Indicators:

- Track key performance indicators (KPIs) to measure the effectiveness of the manufacturing process.
- Monitor KPIs such as defect rates, cycle times, and yield rates to ensure that the manufacturing process is meeting quality standards (Li, 2021).

Implement Continuous Improvement:

- Encourage a culture of continuous improvement by regularly reviewing the manufacturing process and identifying areas for improvement.
- Collect feedback from employees and customers to identify any potential areas of improvement
  (Li, 2021).
- Implement changes to the manufacturing process that will improve quality and reduce defects.

Conduct Regular Audits:

- Conduct regular audits of the manufacturing process to identify any potential defects.

- These audits should be conducted by an independent team and should include a review of process documentation, product inspection, and employee training records (Hu, 2021).
- Use the results of these audits to identify opportunities for improvement.

Collaborate with Suppliers:

- Work with suppliers to ensure that the materials and components used in the manufacturing process meet quality standards.
- Collaborate with suppliers to identify and address any potential defects in the materials or components used in the manufacturing process (Kuo, 2020).

Use Data Analysis:

- Collect and analyze data on the manufacturing process to identify trends and patterns that may indicate potential defects.
- Use data analysis to proactively address any potential defects before they become a problem (Ahmad, 2021).

2.3 Use of 21st century tools to create a greener process.

Here is an outline of how we can use 21st century tools to create a greener process:

- Use digital technologies for monitoring and control: In the 21st century, digital technologies have become an integral part of the industrial sector. Using sensors, data analytics, and artificial intelligence (AI) algorithms, it is now possible to monitor and control industrial processes with a high degree of precision (Mak, 2019). By optimizing the use of resources, reducing wastage, and minimizing emissions, digital technologies can help create a more efficient and greener process.
- Implement a circular economy: The concept of a circular economy involves designing products and processes in such a way that waste is minimized, and resources are reused or recycled. 21st century tools such as blockchain, IoT, and data analytics can help facilitate a circular economy by enabling real-time tracking and tracing of materials, creating more transparency and accountability, and facilitating the exchange of information and resources (Meuro, 2020).

- Use renewable energy sources: With the advent of solar, wind, and other renewable energy sources, it is now possible to power industrial processes without relying on fossil fuels. 21st century tools such as energy storage systems, smart grids, and microgrids can help integrate renewable energy sources into the industrial sector, making it possible to create a greener process (Greenpeace, 2020).
- Collaborate with stakeholders: The challenges of creating a greener process are complex, and no single entity can solve them alone. By collaborating with stakeholders such as suppliers, customers, and communities, it is possible to identify opportunities for reducing waste, increasing efficiency, and creating a more sustainable process. 21st century tools such as social media, online collaboration platforms, and video conferencing can facilitate such collaborations, making it easier to work together towards a common goal (Mishra, 2021). By using these 21st century tools, it is possible to create a greener process that is more efficient, sustainable, and environmentally friendly.

By following this operational industrial streamline procedural guide, Big Green Tractor can produce tractors more efficiently, reduce errors, and improve the overall quality of its products. It is important for all employees involved in the production process to follow the guide carefully to ensure that the production process runs smoothly and effectively.

3 Socially responsible operational guide

In this section a socially responsible operational guide for the Big Green Tractor for managing their pollutants, including industrial standards on disposal of chemical waste and green alternatives to traditional manufacturing processes are presented:

- Identify pollutants: The first step in managing pollutants is to identify the sources of pollution (Environmental Protection Agency, 2017). The Big Green Tractor should conduct a thorough analysis of their manufacturing processes to identify any pollutants that are being released into the environment.
- Set targets: Once the pollutants have been identified, the Big Green Tractor should set targets for reducing or eliminating them (Ahmad, 2020). These targets should be specific,

measurable, and achievable, and should be regularly reviewed to ensure that progress is being made.

- Implement pollution prevention measures: The Big Green Tractor should implement pollution prevention measures to reduce the amount of pollutants released into the environment. This can include process changes, equipment upgrades, or the use of cleaner technologies (Environmental Protection Agency, 2021). By preventing pollution at the source, the company can reduce their environmental impact.
- Disposal of chemical waste: The Big Green Tractor should follow industrial standards on the disposal of chemical waste (Karim, 2021). This can include storing and handling chemicals safely, disposing of waste in compliance with local regulations, and monitoring the disposal process to ensure it is being carried out correctly.
- Green alternatives to traditional manufacturing processes: The Big Green Tractor should explore green alternatives to traditional manufacturing processes. This can include using renewable energy sources such as solar or wind power, implementing closed-loop manufacturing processes to minimize waste, and adopting eco-friendly materials and products (Global Reporting Initiative, 2021). By using green alternatives, the company can reduce their environmental impact and promote sustainable development.
- Continuous improvement: The Big Green Tractor should continuously review and improve their pollution management practices (Berg, 2021). This can involve regular environmental audits, employee training, and engagement with stakeholders. The company should also stay up-to-date with emerging environmental technologies and best practices.
- Community engagement: The Big Green Tractor should engage with the local community to promote transparency and build trust (Choprha, 2021). This can involve regular communication, community outreach, and involvement in local environmental initiatives. By engaging with the community, the company can demonstrate their commitment to social responsibility.

By following this socially responsible operational guide, the Big Green Tractor can effectively manage their pollutants and minimize their environmental impact. The company can also improve their reputation, build trust with stakeholders, and promote sustainable development.

3.1.1 Industrial Standards of Chemical Disposal

Proper disposal of chemical waste is crucial to prevent environmental contamination and protect public health. Here are some additional details on the disposal of chemical waste that the Big Green Tractor should consider:

- Storage: Chemical waste should be stored in a secure and designated area that is separate from other materials (International Organization for Standardization, 2018). The storage area should be well-ventilated and protected from fire, weather, and unauthorized access.

- Handling: Chemical waste should be handled with care to prevent spills, leaks, or other accidents. Employees should receive training on safe handling procedures, and appropriate personal protective equipment (PPE) should be provided.

- Labeling: All chemical waste containers should be clearly labeled with the contents, hazard warnings, and date of accumulation. This helps ensure that the waste is handled and disposed of appropriately.

- Transportation: Chemical waste should be transported using appropriate containers and labeling, and in compliance with local regulations (United States Environmental Protection Agency, 2019). The Big Green Tractor should work with licensed waste disposal companies to ensure that the waste is properly transported and disposed of.

- Disposal: The disposal of chemical waste should comply with local regulations and standards. This may involve treating the waste to neutralize the hazardous properties or disposing of it in an approved landfill or incinerator (European Commission, 2018). The Big Green Tractor should keep records of all waste disposal activities, including the type and quantity of waste, disposal method, and the name of the waste disposal company.

By following these guidelines for the disposal of chemical waste, the Big Green Tractor can minimize their environmental impact and ensure compliance with local regulations. The company

should also stay up-to-date with emerging best practices for chemical waste management and continuously review and improve their waste disposal procedures.

3.1.2 Green alternatives to traditional manufacturing processes

- Renewable energy: Using renewable energy sources such as solar, wind, or geothermal power can significantly reduce the carbon footprint of manufacturing processes (Nair, 2019). The Big Green Tractor should explore the use of renewable energy sources to power their facilities, and consider investing in renewable energy projects to support local communities and promote sustainability.

- Closed-loop manufacturing: Closed-loop manufacturing processes aim to minimize waste by reusing or recycling materials and products. This can involve using recycled materials in production, implementing closed-loop water systems, or designing products for easy disassembly and recycling (Paulraj, 2020). The Big Green Tractor should explore closed-loop manufacturing processes to reduce waste and conserve resources.

- Eco-friendly materials: The Big Green Tractor should consider using eco-friendly materials such as bioplastics, recycled materials, or sustainably sourced materials (Qu, 2020). This can help reduce the environmental impact of manufacturing processes and promote sustainability.

- Lean manufacturing: Lean manufacturing is a methodology that aims to eliminate waste and improve efficiency in manufacturing processes (Hu, 2021). By reducing waste and increasing efficiency, the Big Green Tractor can minimize their environmental impact and improve their bottom line.

- Green chemistry: Green chemistry is an approach to chemistry that aims to design chemical products and processes that are safe for human health and the environment (Sarkis, 2011).

The Big Green Tractor should explore the use of green chemistry principles to develop new products and manufacturing processes that are eco-friendly and sustainable.

By adopting these green alternatives to traditional manufacturing processes, the Big Green Tractor can reduce their environmental impact and promote sustainable development. The company should also stay up-to-date with emerging green technologies and best practices, and continuously review and improve their manufacturing processes to minimize their environmental impact.

4 Conclusion

In conclusion, the operational industrial streamline procedural guide presented in this report is designed to provide the Big Green Tractor with a systematic and organized approach to manufacturing processes. The guide covers a range of recommendations, including cost-efficient manufacturing processes, defect minimization, and the use of 21st century tools to create a greener process.

By implementing the recommendations outlined in this guide, the Big Green Tractor can achieve their goals of social responsibility and environmental sustainability, while remaining competitive in the agricultural equipment industry. The cost-efficient manufacturing processes recommended in this guide can help the company reduce production costs, while still maintaining the high standards of quality that their customers expect. Additionally, the guide's recommendations for defect minimization will help the company avoid costly mistakes, improving their overall efficiency and productivity. Finally, the use of 21st century tools to create a greener process will help the company minimize their environmental impact, reducing waste and improving sustainability.

Additionally, the socially responsible operational guide presented in this report is a critical tool for the Big Green Tractor as they work to minimize their environmental impact and prioritize social responsibility. The guide includes recommendations for the disposal of chemical waste, as well as green alternatives to traditional manufacturing processes, ensuring that the company is doing its part to protect the environment and the communities they serve.

Moreover, by implementing the recommendations outlined in this guide, the Big Green Tractor can achieve their goals of social responsibility and environmental sustainability, while remaining

competitive in the agricultural equipment industry. The guide's recommendations for the responsible disposal of chemical waste will help the company avoid environmental harm, while also ensuring compliance with relevant regulations. The green alternatives to traditional manufacturing processes recommended in the guide will help the company minimize their environmental impact, while still maintaining high standards of quality and efficiency. We believe that the adoption of this socially responsible guide will not only benefit the Big Green Tractor, but will also set an example for other companies in the industry to follow. By prioritizing social responsibility and environmental sustainability, the company can lead the way towards a more sustainable and socially responsible future for the agricultural equipment industry.

In conclusion, we recommend that the Big Green Tractor implement the recommendations outlined in this socially responsible operational guide, and we are confident that the company will see significant improvements in their operations as a result. Furthermore, we recommend that the Big Green Tractor implement the recommendations outlined in this operational industrial streamline procedural guide, and we are confident that the company will see significant improvements in their operations as a result.

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