A Development Study to Evaluate a Full-Face Mask for the Treatment of Obstructive Sleep Apnea

NCT03230877

DATE: 28 July 2017

[redacted]

Fisher & Paykel
HEALTHCARE

Clinical Investigation Plan

[redacted]

Hanie Yee Approval	Clinical Research Manager		

Table of Contents

1. Revision History

Revision	Author	Date	Description of change
A	[redacted]	28 July 2017	[redacted]

1.1. List of Abbreviations

[redacted]

[redacted]

[redacted]

2. Document Information

2.1. Purpose and Scope

The purpose of the trial is to evaluate the performance, comfort and ease of use of the New F&P Full face mask seal in the home environment.

2.2. Confidentiality Statement

This document contains confidential information belonging to Fisher & Paykel Healthcare and is provided for the sole purpose of enabling an evaluation of a possible collaboration with Fisher & Paykel Healthcare to undertake the proposed clinical research. This document must be maintained in a confidential manner at all times and any disclosure, distribution or reproduction of this document outside the intended purpose is prohibited.

[redacted]

2.4. Monitoring Arrangements

FPH will be conducting the study, and as such the persons listed above will be excluded from the group responsible for monitoring this study. A complete list of responsible staff will be provided under the delegation of authorities log. The study will be monitored once, at the time when all the results are available and a monitoring report will be generated and filed under the investigators' files. The

Principal Investigator will have access to all source documents needed to verify the entries to the Case Report Form (CRF) and other protocol related documents; provided that participant confidentiality is maintained in agreement with local regulations it will be the principal investigator's responsibility to inspect the CRF at regular intervals throughout the investigation, to verify the adherence to protocol and the completeness, consistency and accuracy of the data being entered on them.

The investigator's file will contain the protocol/amendments, financial disclosure form, CRFs and data clarification and query forms, Independent Review Board (IRB) approval with correspondence, informed consent, staff curriculum vitae and authorization forms, screening and enrolment logs, and other appropriate documents/correspondence as per International Conference on Harmonization (ICH) and Good Clinical Practice (GCP) and local regulations.

[redacted]

[redacted]

2.5. Data Management

Data obtained for this investigation will be stored in the controlled document system and electronically on secure servers, which are only accessible by Clinical Research staff and those persons identified on the delegation of authority. Any data which is not kept in this secure manner will be de-identified in accordance with HIPAA protocols. Data obtained for this investigation will be recorded in source documents and attached to the CRF for both the administration of the study and collection of participant data.

[redacted]

3. Investigator Information

3.1. Primary Investigator

Name: Dr. James Krainson

Address: 12600 SW 120 Street, Suite 116 & 117, Miami, FL, 33186, USA.

Email: JKrainson@ClinicaltrialsFLA.com

Phone: 305-255-2452

Professional Position: Medical Director

3.2. Coordinating Investigator

Name: David Marquez

Address: 12600 SW 120 Street, Suite 116 & 117, Miami, FL, 33186, USA.

Email: DMarquez@clinicaltrialsFLA.com

Phone: 305-255-7452

Professional Position: Site Director & Senior Clinical Research Coordinator

[redacted]

3.3. Institution

Name: Clinical Trials of Florida

Address: 12600 SW 120 Street, Suite 116 & 117, Miami, FL, 33186, USA.

[redacted]

[redacted]

Email: JKrainson@ClinicaltrialsFLA.com

Phone: 305-255-2452

Country of residence: United States of America

4. Sponsor Information

4.1. Primary Sponsor Details

Name of Business: Fisher & Paykel Healthcare Limited

Address: 15 Maurice Paykel Place, East Tamaki, Auckland, New Zealand.

Name of Sponsor contact person: Hanie Yee

Phone: +64 9 5740123 Ext 7909

Email: Hanie.Yee@fphcare.co.nz

Profession: Clinical Research Manager

Country of residence: New Zealand

4.2. Overseas Representative

Sponsor: Fisher & Paykel Healthcare Inc

Country of residence: United States

Name: Subbarao Potharaju

Address: 173 Technology Dr. Suite 100, Irvine, CA 92618

Email: Subbarao.Potharaju@fphcare.com

Phone: (800) 792-3912 Ext: 1406

Professional Position: Senior Product Manager, US Homecare

5. Device Information

5.1. Identification of the Medical Device

[redacted]

5.2. Device Risk Analysis and Management

Positive Airway Pressure (PAP) therapy via a nasal or oro-nasal mask is standard clinical practice for participants with OSA. The risks associated with this treatment are limited to the potential for slight discomfort associated with the use of a oro-nasal mask during sleep.

[redacted]

[redacted]

[redacted]

6. Justification for a Clinical Trial

6.1. Synopsis

This investigation is a prospective, randomized, non-blinded, cross-over study. The investigation is designed to evaluate the performance, comfort and ease of use of the F&P Full face mask Seal amongst OSA participants. The trial mask seal allocation will be randomized prior to the participant's first visit for the investigation. [redacted]

[redacted]

This study will be conducted in accordance with ICH/GCP guidelines. No deviation from the protocol will be implanted without prior review and approval of the sponsor except where it may be necessary to eliminate an immediate hazard to a research participant. In such case, the deviation will be reported to the sponsor as soon as possible. In this trial the sponsor and the investigator are the same company however the Sponsor will not be the investigator. To ensure roles are clearly defined and kept independent there will be a delegation of authority log to clearly define each individuals tasks.

6.2. Literature Review

Obstructive Sleep Apnea (OSA) is a common sleep breathing disorder effecting around 3-7% of men and 2-5% of women in the general population[1] and is characterized by periodic collapse of the upper airway during sleep. The standard treatment for obstructive sleep apnea is nasal continuous positive airway pressure (CPAP), which consists of pressurized air applied to the nose and/or mouth via an interface. Despite the effectiveness of CPAP in abolishing upper airway obstruction, acceptance of and adherence with therapy has been sub-optimal[2]. Reasons for the low compliance include nocturnal awakenings, incorrect therapeutic pressure and primarily discomfort due to mask poor interface fit. Poor interface fit can result in facial abrasion, leak causing fluctuations in therapeutic pressure and irritation of the eyes [3,4].

6.3. Preclinical Testing

[redacted]

[redacted]

[redacted]

[redacted]

6.4. Previous Clinical Experience

[redacted]

[redacted]

6.5. Justification for Administration

Participants will remain on their usual PAP pressure throughout the duration of the study. Qualitative data will be collected from participants through questionnaires to evaluate acceptability, comfort, overall experience and the ease of use of the mask. These measures require testing on human participants for this clinical trial. Quantitative data (efficacy data from CPAP download) will also be collected for the duration of the study to ensure the study mask provides effective treatment and performs as participants stand care.

7. Objectives of the Clinical Investigation

7.1. Hypothesis

[redacted]

7.2. Objectives

Primary objective:

- To evaluate the performance, comfort and ease of use of the F&P Full Face mask seal in a home environment in regards to the participants' view of overall comfort, experience and satisfaction.

7.3. Population

Approximately 40-45 participants will be recruited for the trial by CTF.

[redacted]

[redacted]

[redacted]

7.5. Essential Requirements of the Relevant Directive

Essential requirements are not applicable since this study is being conducted in the USA only.

8. Clinical Investigation Design

8.1. Type of Investigation

This investigation is a prospective, randomized, single-blinded, cross-over study. [redacted]

8.2. Controls

The Normal F&P mask seal (trial Seal B) will act as the control for this investigation. Data collected from this mask seal will be compared to the data gathered from the New F&P seal.

8.3. Bias

The two different F&P mask seals are blinded however they may be distinguishable, therefore there is a possibility that bias would occur. The order of the two masks issued to the participants will be randomized, limiting this bias.

[redacted]

[redacted]

8.4. End Points

8.4.1. Primary Outcomes

- The F&P mask seal is comfortable to use for the participant as measured by the custom questionnaires and recorded during the interviews.
- The mask is easy to use, accepted by the participant and provides adequate treatment for OSA during in-home use, measured via participant feedback and PAP data download (if applicable)

[redacted]

8.4.2. Secondary Outcomes

- Seal performance as measured by leak measurements/PAP data (if applicable).

8.5. Variables

[redacted]

[redacted]

[redacted]

8.6. Measurements

[redacted]

8.7. Equipment

[redacted]

8.8. Inclusion / Exclusion criteria

Inclusion Criteria:

- Adult (22+ years of age)
- Able to give informed consent
- AHI ≥5 on diagnostic night
- Either prescribed APAP, CPAP or Bi-level PAP for OSA
- Fluent in spoken and written English

[redacted]

Exclusion Criteria:

- Inability to give informed consent
- Participant intolerant to PAP
- Anatomical or physiological conditions making PAP therapy inappropriate
- Current diagnosis of respiratory disease or CO_2 retention
- Pregnant or may think they are pregnant.

8.9. Point of Enrolment

Participants will be recruited; who are prescribed either APAP, CPAP or Bi-level PAP for OSA at CTF. The principal investigator (or those identified in the delegation log) will ask the subjects whether they are interested to take part in the trial. The participants who meet the inclusion/exclusion criteria and provide informed consent will then be enrolled in to the trial. A recruitment script will be used when recruiting participants to the trial (Appendix A)

8.10. Participant Procedure

The study coordinator will ask the subjects whether they are interested to take part in the trial. Only eligible participants, that provide written informed consent, will be enrolled into the investigation.

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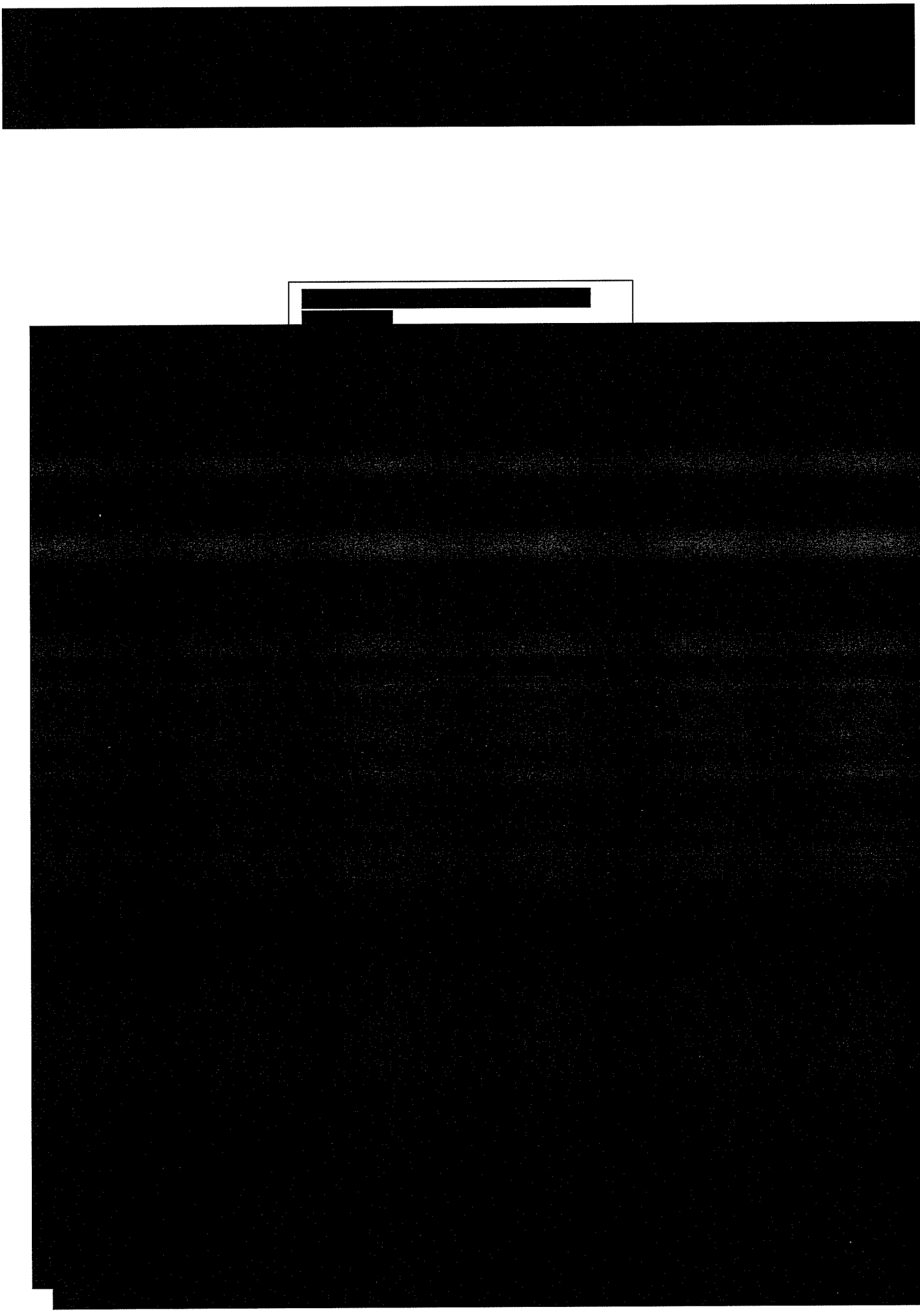

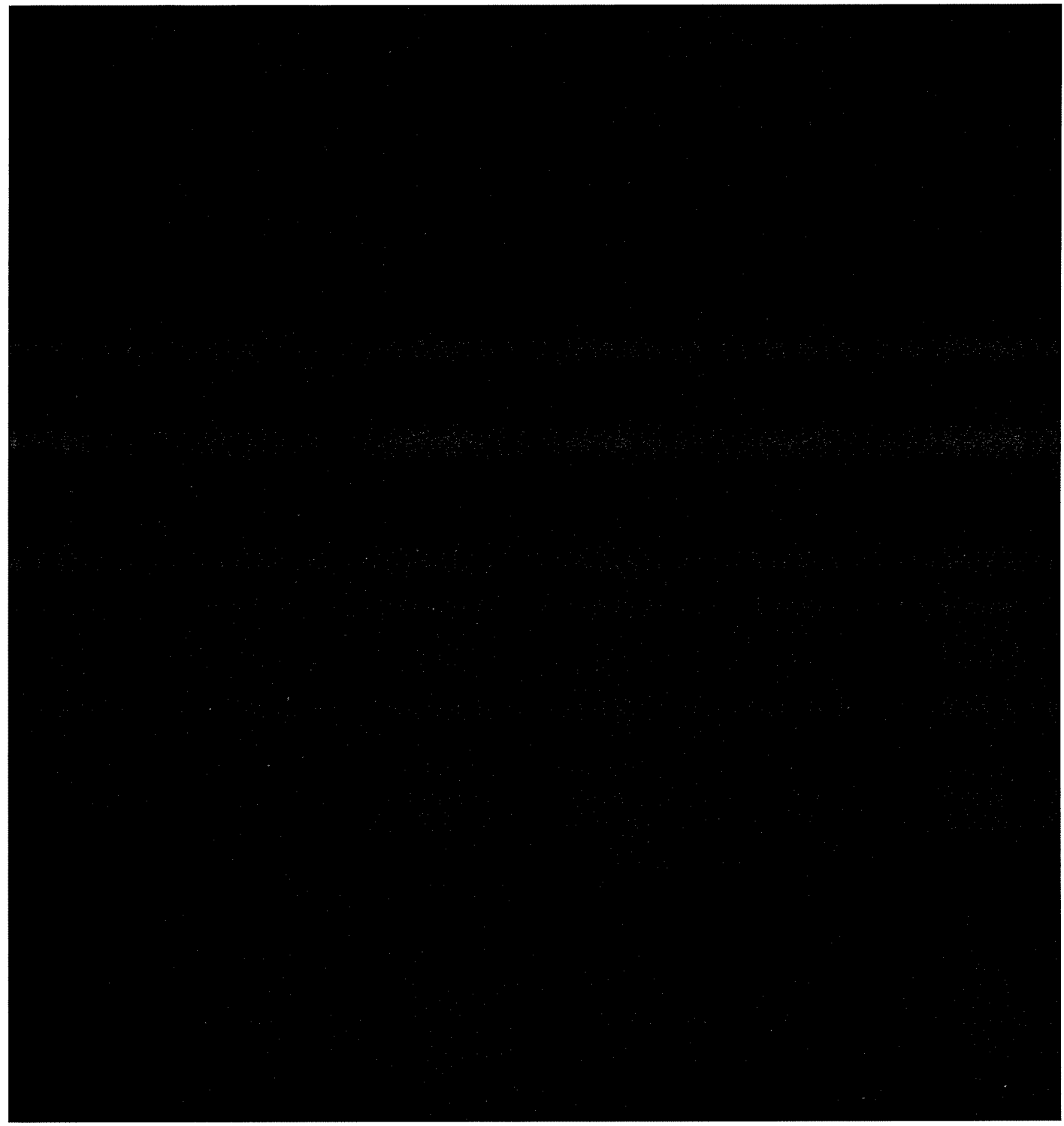

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8.11. Withdrawal Criteria

Participants will be informed that they have the right to withdraw from the study at any time, without prejudice to their medical care, and are not obliged to state their reasons. The participants is informed that they can revert back to their usual therapy during the clinical investigation if they have reason to do so. Additionally the investigator may withdraw a participant at any time for the following reasons:

- Protocol Violation
- Safety concerns
- Serious illness
- Adverse event

The reason for participant discontinuation in the study is to be recorded in the CRF and source document.

8.12. Number of Trial Subjects

A minimum number of 40-45 F&P full face mask users for OSA therapy will be recruited into this trial.

8.13. Follow up Plan

Participants will receive standard care from their health care provider throughout and following the study.

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[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

STATISTICAL CONSIDERATIONS

9.5. Description of the Statistical Design

Since the trial is to inform product development, no statistical design is required.

9.6. Sample Size

A minimum of 30 participants will be utilised for each investigation. According to the FDA guidance on Human Factors Engineering, a sample size of 30 will allow a mean of 99% of usability problems to be identified (minimum of 97%)[7]. This is deemed to be appropriate for this investigation as the product is

[redacted]

in feasibility, and the intent is to assess the usability of the user interface to determine further design iterations.

9.7. Pass/Fail Criteria

[redacted]

9.8. Statistical Termination

No interim analysis will be conducted as statistical outcomes will not change the conduct of the study.

9.9. Statistical Procedure Deviations

Statistical procedure deviations will be reported to the principal investigator and the sponsor. Deviations from the original statistical plan will be explained in the final study report.

9.10. Selection Criteria

All participants who consent, and are fitted with a mask that they attempt to sleep on will be included in the analysis. Please see section 8.10 for information on participant flow throughout the trial.

9.11. Statistical Data Management

Fisher and Paykel Healthcare may consult an external statistician to assist with the analysis of the data.

10. Adverse Events and Termination

An Adverse Event (AE) is any adverse change from the participant's baseline condition, i.e., any unfavorable and unintended sign or symptom or disease that occurs during the course of the study, whether or not considered related to the PAP treatment. All clinically significant AEs occurring during the study that were not present prior to the commencement of PAP treatment, will be recorded in the CRF and source document and followed by the Investigator until resolution or stabilization occurs in accordance with GCP.

Serious AE's are considered to be AE's that result in any of the following outcomes, regardless of their relationship to the PAP treatment:

- Death
- A life-threatening AE
- In-patient hospitalization or prolongation of existing hospitalization
- A persistent or significant disability/incapacity
- A congenital abnormality/birth defect

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

10.3. Reporting Adverse Events

Any serious AE, due to any cause, that occurs during the study period, must be reported immediately (within the next business day) by telephone to the sponsor. In addition to the initial telephone report, a Serious Adverse Event form must be completed and sent via facsimile to the sponsor. All serious AE's must also be recorded on the AE page of the CRF. Additionally, all serious AE's must be reported to the Independent Review Board (IRB) as per the IRB's requirements.

10.4. Early Termination

The study may be discontinued at any time on the advice of the responsible investigator on the basis of new information regarding safety or efficacy. Additionally, the study may be terminated if progress

is unsatisfactory. The following documentation is required if the appropriate party terminates a clinical trial.

10.5. Investigator

If the investigator terminates or suspends a trial without prior agreement of the sponsor, the investigator should inform the institution, where required by the applicable regulatory requirements and the investigator/institution should promptly inform the sponsor and the IRB, and should provide the sponsor and the IRB a detailed written explanation of the termination or suspension.

10.6. Sponsor

If the sponsor terminates or suspends a trial, the investigator should promptly inform the institution, where required by the applicable regulatory requirements, and the investigator/institution should promptly inform the IRB and provide the IRB a detailed written explanation of the termination or suspension.

10.7. Institutional Review Board (IRB) or Independent Ethics Committee (IEC)

If the IRB terminates or suspends its approval/favourable opinion of a trial the investigator should inform the institution, where required by the applicable regulatory requirements, and the investigator/institution should promptly notify the sponsor and provide the sponsor with a detailed written explanation of the termination or suspension.

11. Publication Policy

This study is intended for internal use on the development of the product. However the results of this study may be used for marketing purposes or in regulatory documentation to support the clinical efficacy of the devices.

12. Approval

All the required signatories for the approval of this document (Clinical Investigation Plan) are listed on the front page of this document with their relevant positions. Signing the below approval indicates that the primary investigator (PI) agrees to this version of CIP.

Primary Investigator Approval:

PI Name: _____

PI Signature: _____

Date (dd/mmm/yyyy): _____

[redacted]

13. References

1. Al Lawati N et al. Epidemiology, Risk Factors, and Consequences of Obstructive Sleep Apnea and Short Sleep Duration. Prog Cardiovasc Dis 2009; 51(4): 285-93.
2. Dungan G et al. Randomized Crossover Trial of the Effect of a Novel Method of Pressure Control (SensAwake) in Automatic Continuous Positive Airway Pressure Therapy to Treat Sleep Disordered Breathing. Journal of Clinical Sleep Medicine 2011; 7(3): 261-267.
3. Weaver T, Grunstein T (2008) Adherence to continuous positive airway pressure: the challenge to effective treatment. Proc Am Thorac Soc 15(5):173–178
4. Wolkove N, Baltzan M, Kamel H, Dabrusin R, Palayew M (2008) Long-term compliance with continuous positive airway pressure in patients with obstructive sleep apnea. Can Respir J 15(7):365–369
5. Prosise, G.L et al. Oral-nasal continuous positive airway pressure as a treatment for obstructive sleep apnea. Chest 1994; 106(1):180-186.
6. Massie CA and Hart RW. Clinical Outcomes related to Interface type in patients with Obstructive Sleep Apnea/Hypopnea Syndrome who are using Continuous Positive Airway Pressure. Chest 2003; 123:1112-1118.
7. Guidance for Industry and FDA Staff document. Applying Human Factors and Usability Engineering to Medical Devices. February 3,2016.

14. Appendix A: [redacted]

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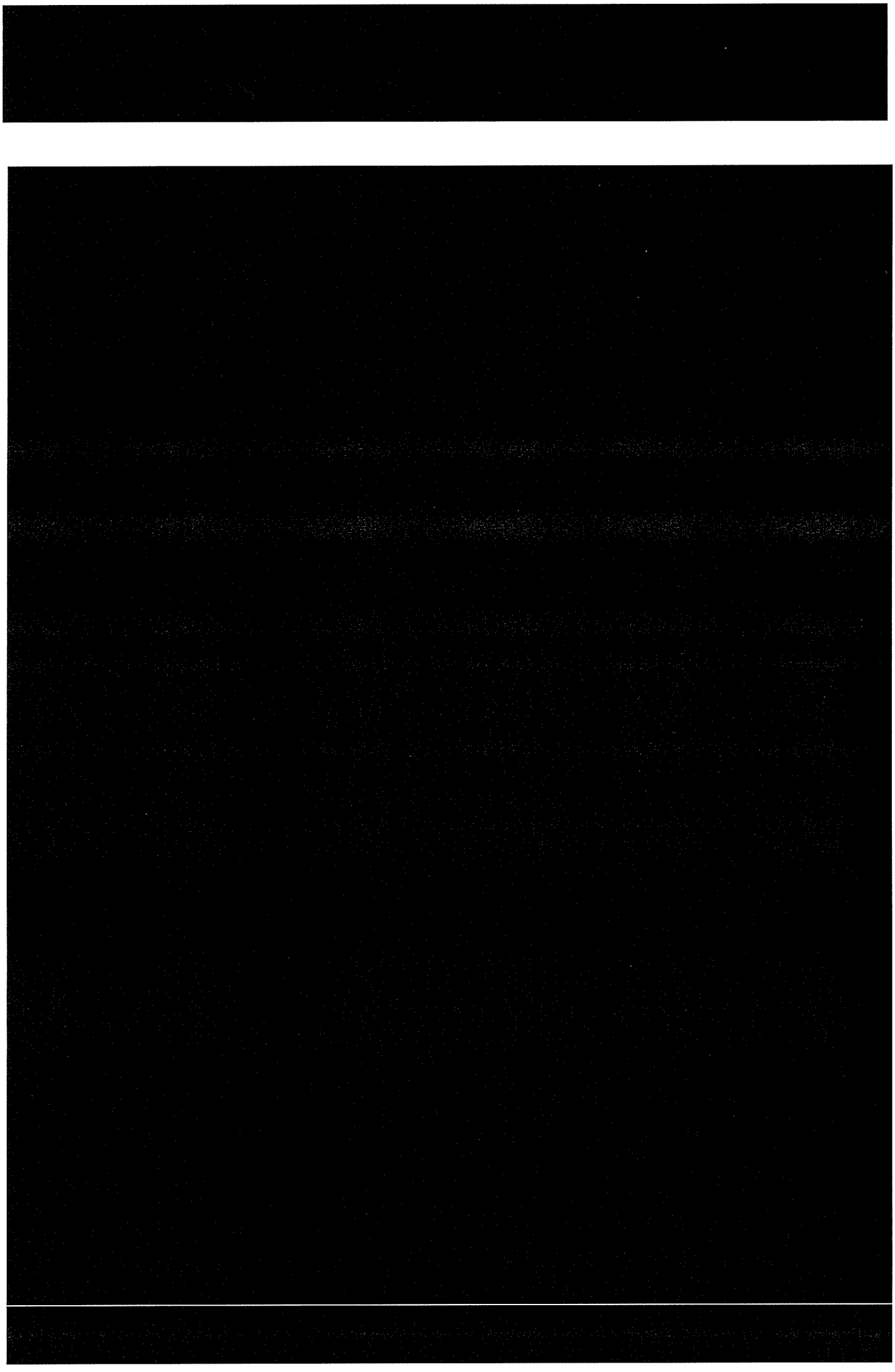

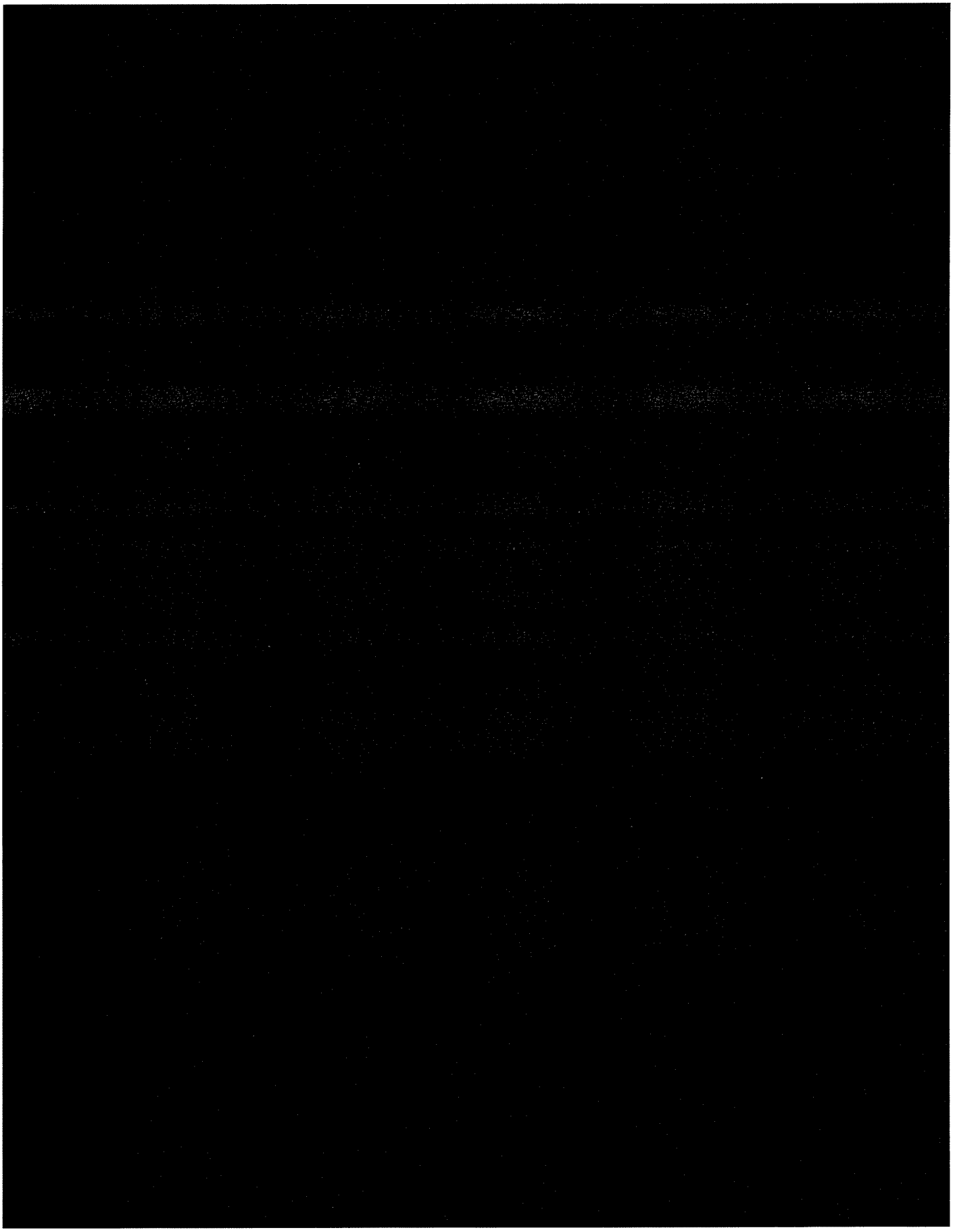

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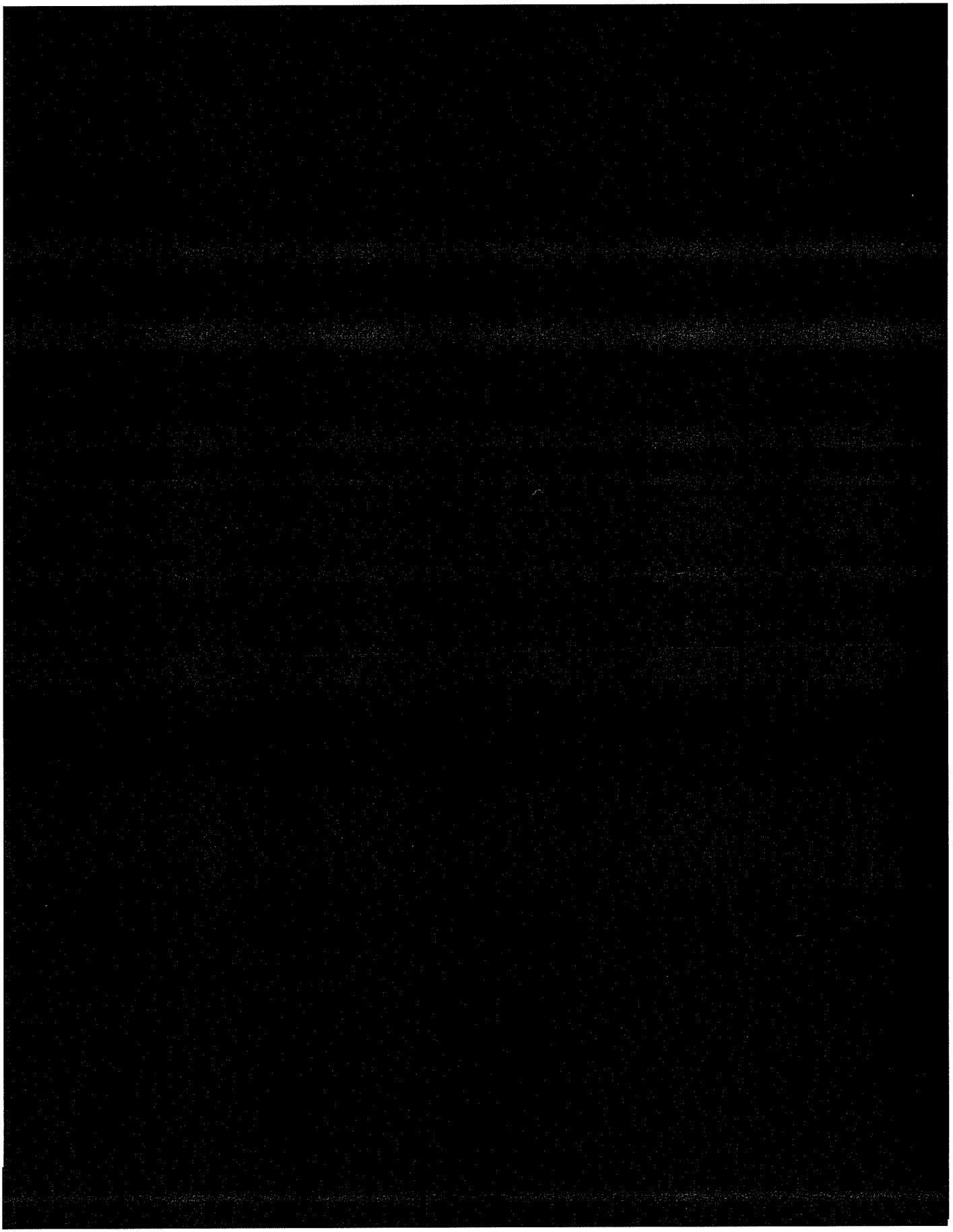
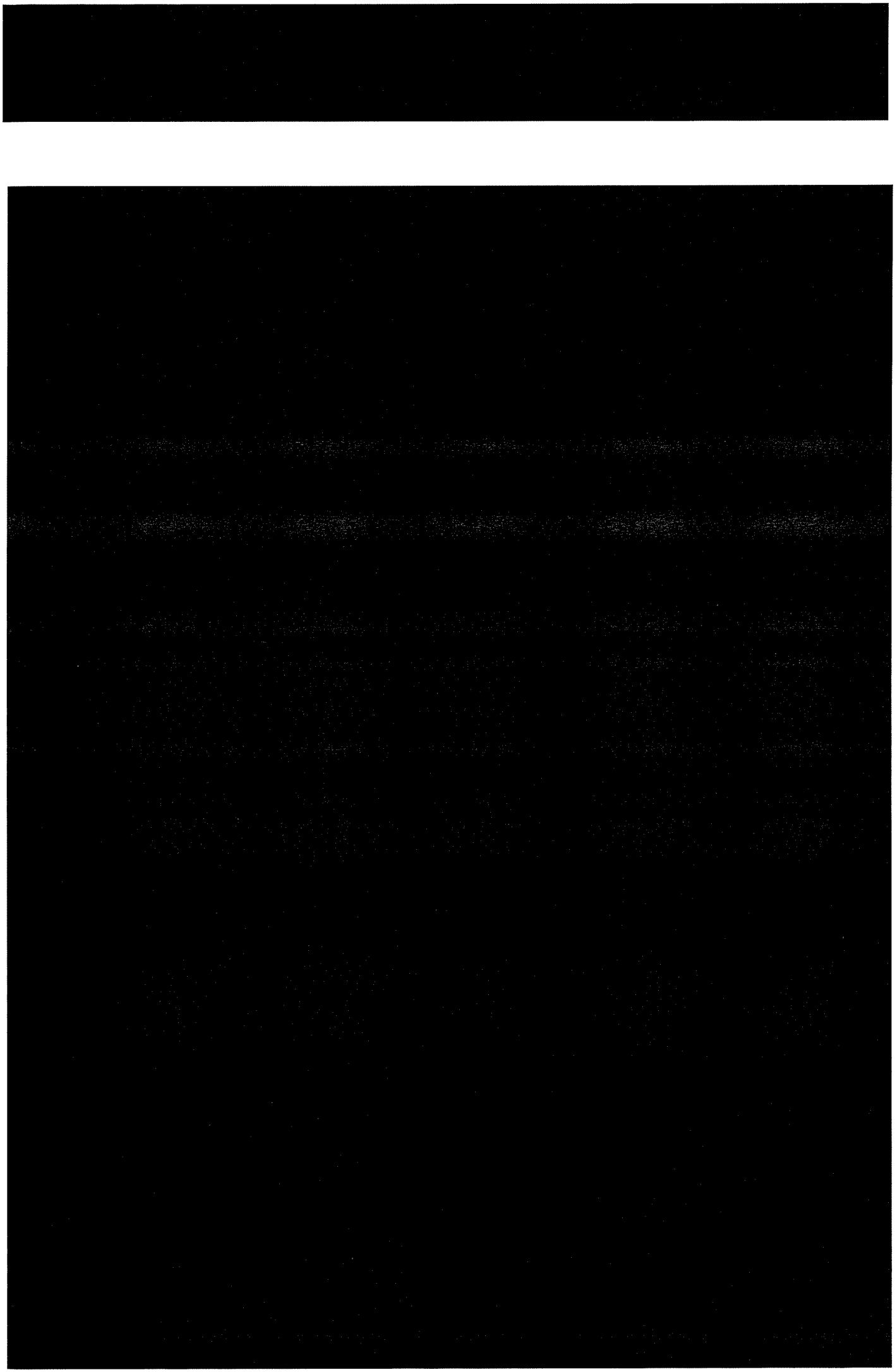
15. Appendix B: [redacted]





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16. Appendix C: [redacted]

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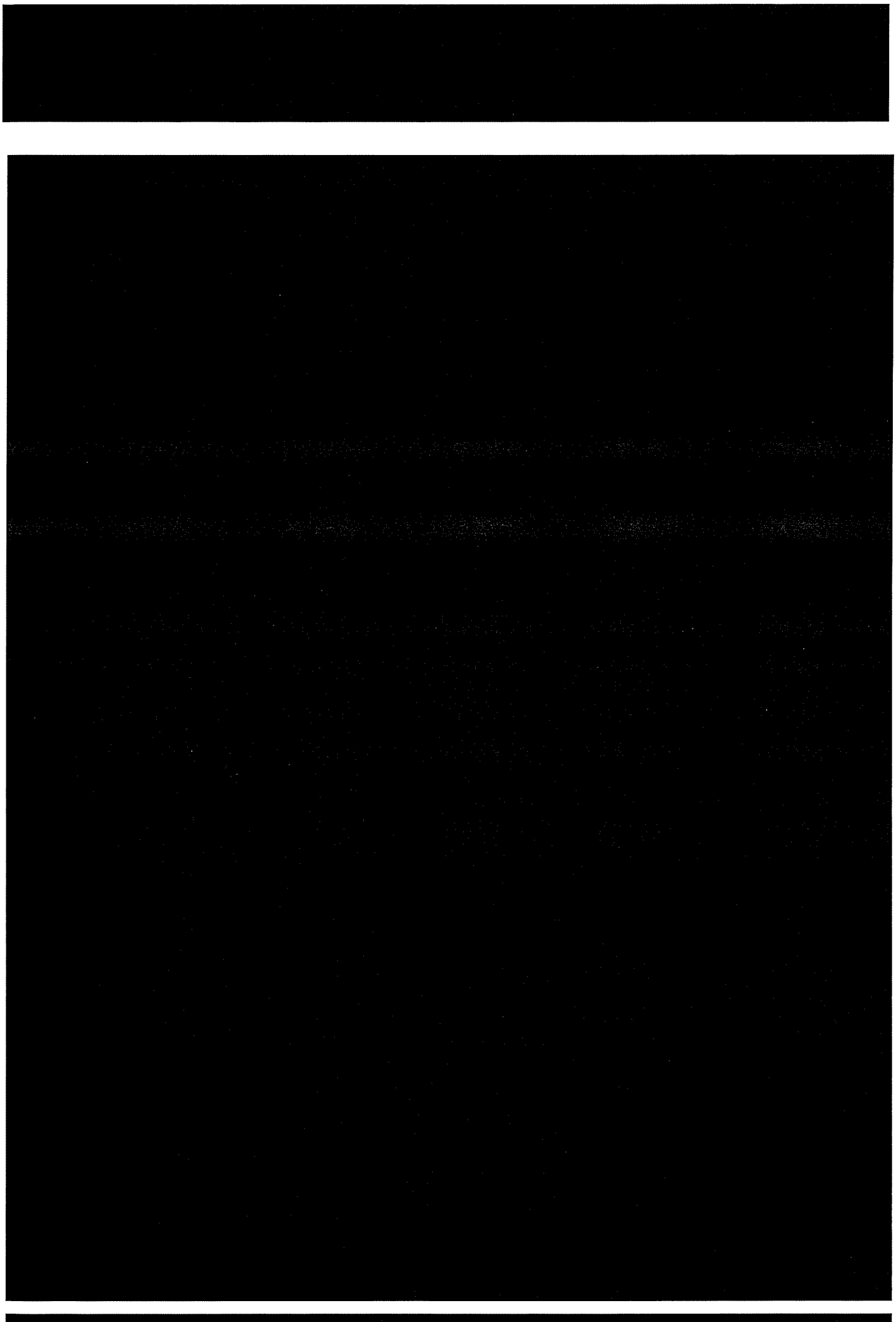

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17. Appendix D: [redacted]