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June 1, 2022
PGL File: 0079-01.49

Montrose Industries Ltd.
100 – 3031 Viking Way
Richmond, BC
V6V 1W1

RE: PERFORMANCE VERIFICATION PLAN – SITE ID: 2404
8011 ZYLMANS WAY (BUILDING 1), RICHMOND, BC

This document is meant to satisfy the reporting requirements for Type 2 risk controls as outlined in BC Contaminated Sites Regulation (CSR) *Administrative Guidance 14.* Specifically, this document outlines the Performance Verification Plan for implementing the engineered risk management measures described below.

REQUIRED ENGINEERED RISK CONTROLS

The following engineered risk controls are required at the site:

- A Vapour Management System (VMS) operating below the building slab must continue to operate as designed.

Ensuring no vapour intrusion using a vapour management system is an engineering risk control as defined by BC Ministry of Environment and Climate Change Strategy (ENV) Guidance[1] and makes the Site Type 2. Maintaining the risk control is necessary to meet risk-based standards under current and future uses. Type 2 sites require a PVP.

ACTION REQUIRED TO IMPLEMENT ENGINEERED RISK CONTROLS

The following measures are required to implement engineered risk controls:

- Mandatory communication with the site owner/operator to ensure the continual operation of the VMS. Operation and maintenance of the VMS must adhere to the specifications in PGL Environmental Consultants' (PGL's) Operation and Maintenance Plan, June 2022 (attached).

Records of these performance verification actions must be maintained by the responsible person to be submitted to the BC Ministry of Environment and Climate Change Strategy, if requested.

The persons responsible for the site must notify the Director promptly if performance verification actions indicate that any required institutional controls are not being met.

[1]https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-remediation/remediation-planning/remediation-plan-aip/performance-verification-plans

The following information must be submitted to the Director with the notification, or as soon as practicable thereafter:

1. The time period over which engineered controls did not meet the requirements;
2. The nature of the excursions;
3. The temporary or permanent corrective measures implemented or to be implemented;
4. An implementation schedule; and
5. Supporting documentation.

RATIONALE FOR SELECTING PERFORMANCE VERIFICATION PLAN ELEMENTS

Concentrations of volatile organic compounds in vapour exceeding the current CSR Schedule 3.3 Standards were identified in PGL's Confirmation of Remediation report dated June 2022.

STATEMENT OF LIMITATIONS AND CONDITIONS FOR REPORT

Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to PGL by the Client, communications between PGL and the Client, and any other reports, proposals or documents prepared by PGL for the Client relative to the specific site described herein, all of which together constitute the Report.

In order to properly understand the suggestions, recommendations and opinions expressed herein, reference must be made to the whole of the Report. **PGL is not responsible for use by any part of portions of the Report without reference to the whole report.**

Basis of Report

The Report has been prepared for the specific site and purposes that are set out in the contract between PGL and the Client. The findings, recommendations, suggestions, or opinions expressed in the Report are only applicable to the site and purposes in relation to which the Report is expressly provided, and then only to the extent that there has been no material alteration to or variation from the information provided or available to PGL.

Use of the Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report or any portion thereof without PGL's written consent, and such use shall be on terms and conditions as PGL may expressly approve. Ownership in and copyright for the contents of the Report belong to PGL. Any use which a third party makes of the Report, is the sole responsibility of such third party. **PGL accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report.**

PGL ENVIRONMENTAL CONSULTANTS
Per:

Katie Scott, B.Sc., R.P.Bio.
Environmental Consultant

Duncan Macdonald, B.Sc., P.Eng., CSAP
Vice President

KES/DGM/mtl
\\pgl-van-file1\Project Files\000-099\079 - Ecowaste Industries Ltd\01-49_Client Docs\T4a - COR\Appendix 11 Vapour System Perf Verif Plan\l-0079-01-31-T3-SSV_PVP-v1.docx

Attached: Operation and Maintenance Plan – Active VMS – Site ID: 2404
8011 Zylmans Way (Building 1), Richmond, BC, PGL, June 2022

PGL ENVIRONMENTAL CONSULTANTS
1500 - 1185 West Georgia Street
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June 1, 2022
PGL File: 0079-01.49

Ecowaste Industries Ltd.
100 – 3031 Viking Way
Richmond, BC
V6V 1W1

RE: OPERATION AND MAINTENANCE PLAN – ACTIVE VMS – SITE ID: 2404
8011 ZYLMANS WAY (BUILDING 1), RICHMOND, BC

This document satisfies part of the reporting requirements for Type 2 risk controls outlined in BC Contaminated Sites Regulation (CSR) *Administrative Guidance 14.* Specifically, it outlines the Operation and Maintenance Plan for the active vapour management system (VMS) installed below 8011 Zylmans Way (Building 1) in Richmond, BC. Operation of the VMS is one of the risk controls outlined in PGL Environmental Consultants' (PGL's) June 2022 Performance Verification Plan for the site. Operation of the VMS is required to maintain the site's Risk-based Certificate of Compliance.

1.0 VAPOUR MANAGEMENT SYSTEM OBJECTIVES

The objective of the VMS is to manage risk from petroleum-hydrocarbon-related vapour concentrations that can potentially accumulate to concentrations exceeding CSR Schedule 3.3 Standards below the building slab. These parameters potentially exceed CSR Schedule 3.3 Standards.

2.0 VMS OPERATION

The system is designed as a sweep system with one section of piping allowing fresh air supply to the sub-slab gravel (supply), and another set of pipes acting to exhaust the sub-slab area (exhaust). The supply draws outdoor air in from grade and transfers it to the sub-grade piping to the pore space in clean rock backfill via perforations in the piping. The exhaust air is drawn from the pore space through the exhaust piping and is discharged to the surface. The exhaust air is discharged to the atmosphere in a location at least 10' away from any other building intakes or openings. The pipes have been fitted with clean-outs for maintenance work. Supply and exhaust piping are generally composed of 4"-diameter perforated polyvinyl chloride (PVC) laid out as per the attached drawings.

3.0 VMS MAINTENANCE

A comprehensive maintenance program must be in place for all aspects of the VMS. At a minimum, inspections should be made yearly:

- The pipe terminations should be inspected to ensure debris has not accumulated near the intake and exhaust air grills; and
- Flow air flow should be measured to ensure that the system maintains a minimum air flux of 130 L/s. The fans are designed to provide 260 L/s at 1990 Pa.

Records of VMS operation and maintenance must be maintained by the responsible persons (the building owner) or their agent. The records must be available for inspection by the BC Ministry of

Environment and Climate Change Strategy (ENV), if requested. The persons responsible for the site must notify the ENV promptly if the VMS does not operate as described. In this event, the following information must be submitted to the Director with the notification, or as soon as practicable thereafter:

- The time period over which the VMS did not operate as described;
- The nature of the problem;
- The temporary or permanent corrective measures implemented or to be implemented;
- An implementation schedule; and
- Supporting documentation.

STATEMENT OF LIMITATIONS AND CONDITIONS FOR REPORT

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PGL ENVIRONMENTAL CONSULTANTS
Per:

Katie Scott, B.Sc., R.P.Bio
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Keith H. Gagné, B.A.Sc., P.Eng.
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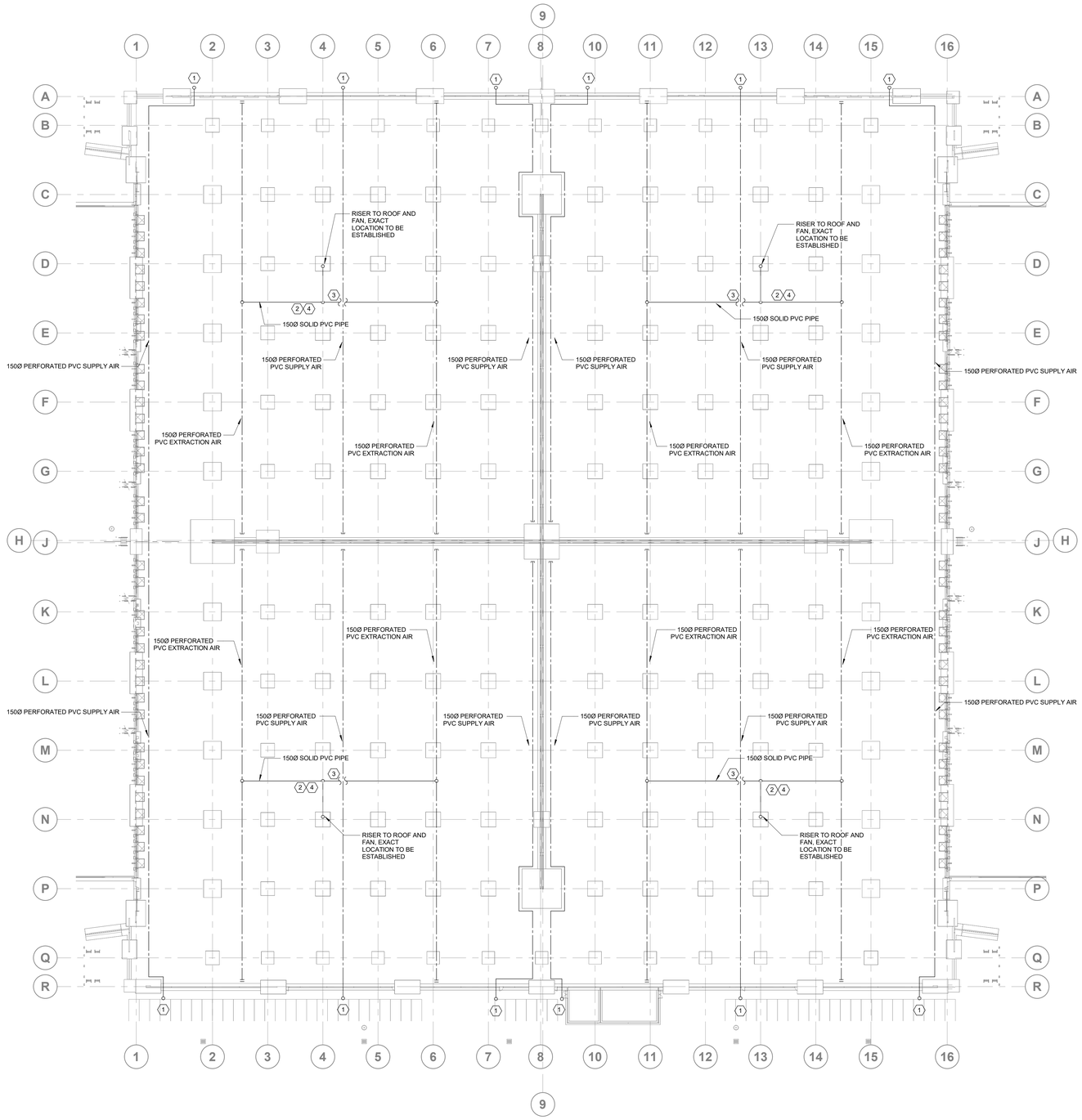
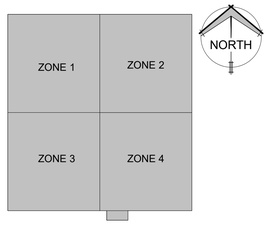
KES/KHG/mtl
X:\000-099\079 - Ecowaste Industries Ltd\01-49_Client Docs\T4a - COR\Appendix 10 Vapour System Op and Maint Plan\I-0079-01-49-T3_SSV_OM_Plan-v1.docx

Attachments: Vapour Management System Drawing



1 PLUMBING - FOUNDATION METHANE
SCALE: 1 : 500

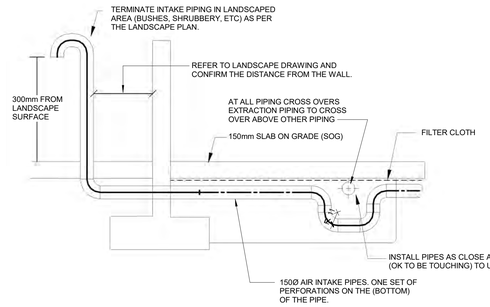


KEY PLAN

VAPOUR SYSTEM NOTES:

1. THE SYSTEM WILL BE CONSTRUCTED OF STANDARD BLANK AND PERFORATED 150mmØ DIAMETER PVC PIPE. PIPES ARE SET IN 20mm (3/4") CRUSH SUB-SLAB MATERIAL. PIPES IN PERFORATED SECTIONS ARE ORIENTED WITH ONE SET OF PERFORATIONS ON THE INVERT(BOTTOM) OF THE PIPE.
2. BLANK SECTIONS ARE SLOPED TO DRAIN. CLEANOUTS ARE PROVIDED ON EACH RUN.
3. SUPPLY PIPES TERMINATE OUTSIDE THE BUILDING. SUPPLY AIR TERMINATE IN A GOOSE-NECK WHERE IT EXITS THE BUILDING. EXTRACTION AIR IS TERMINATED LEAST 10' FROM BUILDING AIR INTAKES OR OPENINGS.
4. THE INLET/OUTLET ARRANGEMENT SHOWN ON THIS DRAWING IS FOR ILLUSTRATION PURPOSES. OTHER ARRANGEMENTS COULD BE ACCOMMODATED. DIFFERENT PIPE MATERIALS CAN BE USED ABOVE THE SLAB IF DESIRED.
5. PROVISIONS SHOULD BE MADE TO ATTACH AND POWER A FAN(S) OR BLOWER(S) IN-LINE WITH THE EXTRACTION AIR PIPING COORDINATE WITH ELECTRICAL.

NOTE: IF SUB-SLAB SETTLEMENT IS PREDICTED PIPING SHOULD BE ATTACHED TO THE SLAB WITH HANGERS.



2 - EXTRACTION & INTAKE PIPING DETAIL
SCALE:NTS

KEYED NOTES:

1. REFER DETAIL 1. COORDINATE LOCATION WITH LANDSCAPE.
2. 150Ø VENTED TO ROOF C/W FAN TERMINATION.
3. OFFSET SUPPLY AIR PIPE DOWN IN ORDER TO CLEAR EXTRACTION PIPE, ONCE CLEARED OFFSET UP TO ORIGINAL ELEVATION SEE DETAIL 2
4. 4 RISERS AND 4 FANS (ONE PER METHANE EXTRACTION SECTION).

METHANE GAS EXTRACTION - FOUNDATION PLAN

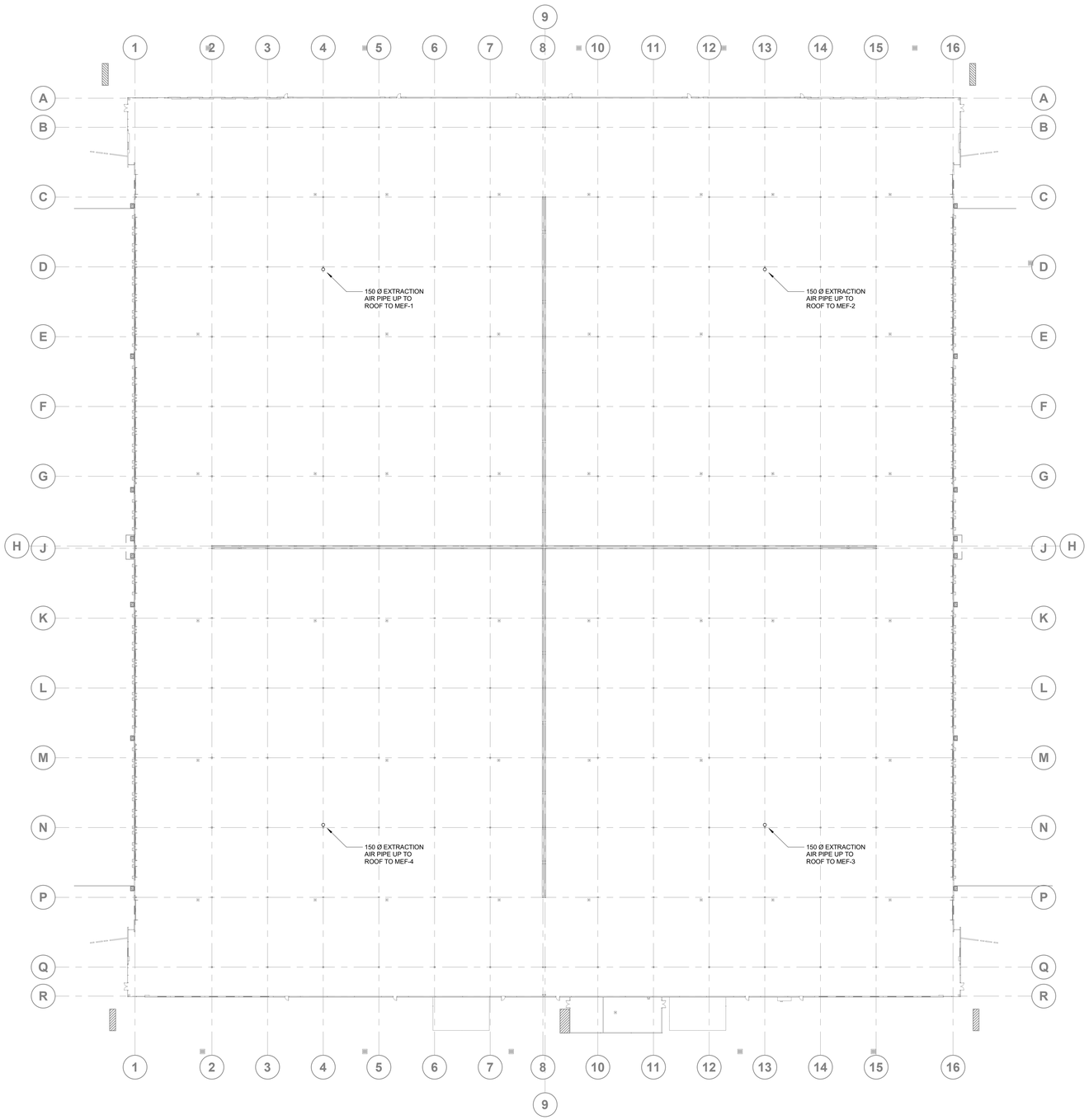
Richmond Key 1095, Building 1, Richmond, BC

RICHMOND INDUSTRIAL CENTRE

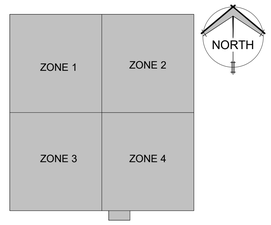
PGL ENVIRONMENTAL CONSULTANTS

File No.:	Dwg No.:	FIGURE
-	-	MG1
Date: 2021-06-10	Drawn by: -	

ORIGINAL IN COLOUR



1 METHANE EXTRACTION - L-1
SCALE: 1 : 500



KEY PLAN

METHANE GAS EXTRACTION - L-1 PLAN

Richmond Key 1095, Building 1, Richmond, BC

RICHMOND INDUSTRIAL CENTRE

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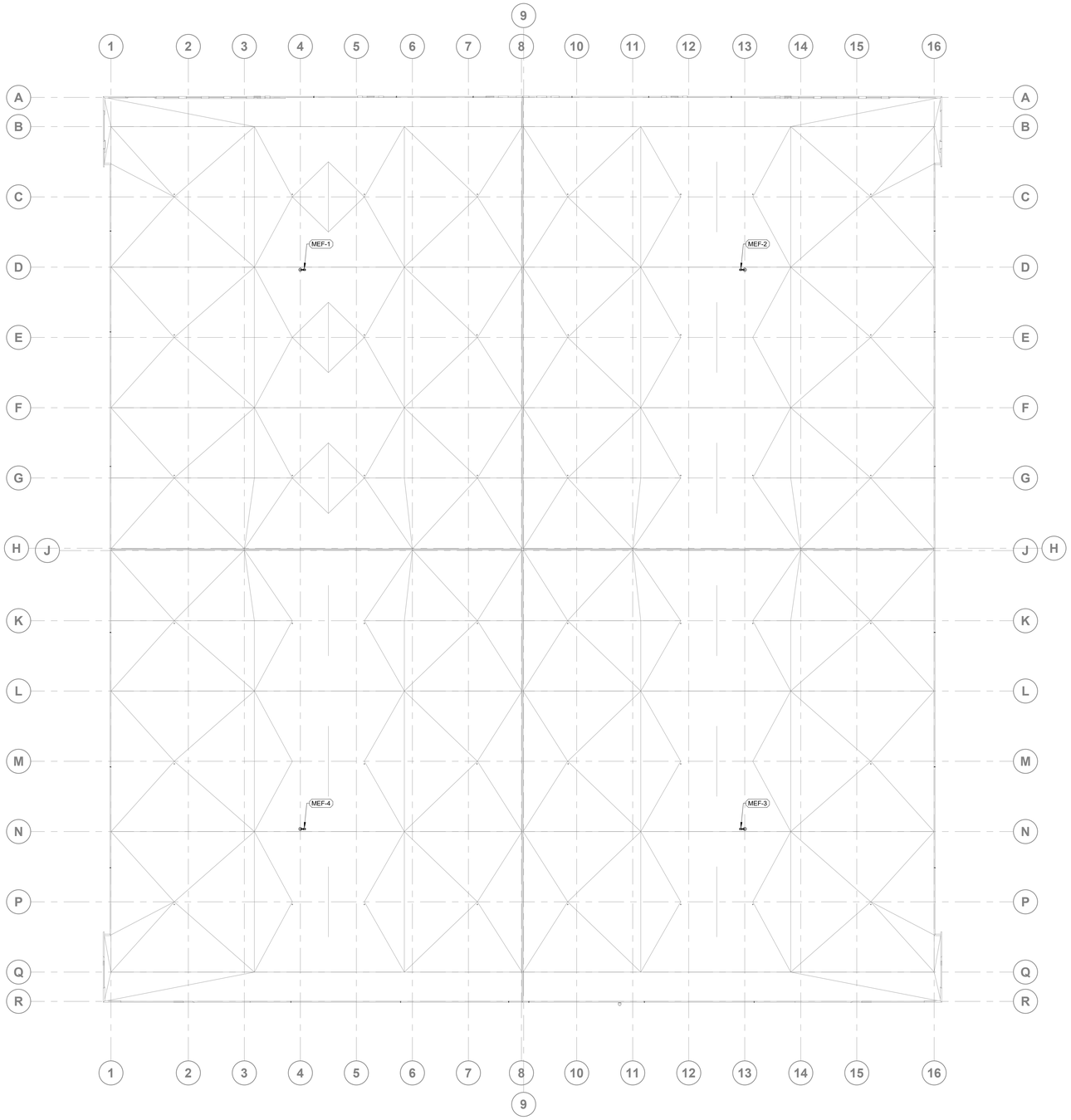
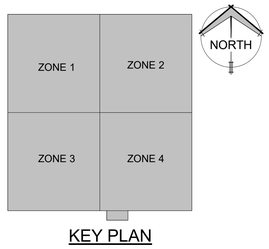
File No.:	Dwg No.:	FIGURE
-	-	MG2
Date: 2021-06-10	Drawn by: -	

ORIGINAL IN COLOUR



1 METHANE EXTRACTION ROOF PLAN
SCALE: 1 : 500



KEY PLAN

VAPOUR SYSTEM NOTES:

1. FANS MUST BE INSTALLED ON THE SLAB AND CONNECTED TEMPORARILY TO THE METHANE SYSTEM. FANS TO BE DISCONNECTED AND REINSTALLED ON THE ROOF WHEN READY. METHANE MUST NOT BE DISCHARGED TO ENCLOSED AREA.

FAN SCHEDULE

TAG	SERVICE	TYPE	AIRFLOW (L/S)	E.S.P (Pa)	FAN (RPM)	SOUND LEVEL (SONES)	ELECTRICAL		MAKE	MODEL NUMBER	WEIGHT (KG)	OPTIONS	QTY
							WATTS	V/PH/HZ					
MEF-1 TO 4	METHANE EXTRACTION EXHAUST	ROOF	260	1990	5000	50	1120	208/3/60	GREENHECK	IP-5-2-A1	85	1 TO 6	4

ACCEPTABLE EQUAL: LOREN COOK NOTES:

1) 24-7 OPERATION
2) SPARK A CONSTRUCTION WITH EXPLOSION PROOF MOTOR
3) C/W ISOLATION BASE, FACTORY MOUNTED, ISOLATOR-RUBBER MOUNT, 0.25"
4) ENERGY EFFICIENT MOTOR - MEETS NEMA TABLE 12-11
5) MOTOR WITH CSA APPROVAL
6) MOTOR WITH CLASS F OR GREATER INSULATION

METHANE GAS EXTRACTION - ROOF PLAN

Richmond Key 1095, Building 1, Richmond, BC

RICHMOND INDUSTRIAL CENTRE

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File No.:	Dwg No.:	FIGURE
-	-	MG3
Date: 2021-06-10	Drawn by: -	

ORIGINAL IN COLOUR