

**APPENDIX F.2**  
**METHANE REPORT**

July 21, 2017  
Job # J3449

To: **Amazon Properties, LLC**  
**9440 S. Santa Monica Blvd., Suite 700**  
**Beverly Hills, CA - 90210**

**Attn: Mr. Michael Soroudi**



621 Via Alondra  
Suite 610  
Camarillo, California 93012

TEL: 805.987.5356  
FAX: 805.987.3968

[methanespecialists.com](http://methanespecialists.com)

Subj: **Site Methane Investigation Report for:**

**8-story mixed use project, with 3 subterranean parking levels**  
**1100 E. 5th Street,**  
**Los Angeles, CA – 90013**

Methane Specialists is pleased to submit this report with the results of our subsurface methane investigation for the project mentioned above. The purpose of the investigation was to measure subsurface soil gas concentrations and pressures of methane at the subject site to determine site-specific methane mitigation requirements prescribed by the City of Los Angeles Department of Building and Safety (Division 71 of the Los Angeles Building Code). This investigation was conducted in accordance with our proposal dated July 19, 2017.

### **Project Information**

The Project Site is on an approximately 54,000 square-foot parcel (1.24 acre), in the City of Los Angeles. The Project proposes the construction of a new “**8-story mixed use project**” to be built with “**3 subterranean parking levels.**” Refusal was *met* in boring down to a minimum of approximately 32 feet, below surface grade, (bsg), at *deep* probesets DP-1, DP-2, and DP-3. *Actual* ground water was not *met* while drilling down to below a depth of at least 32 feet, bsg, at all three deep probe locations. A geotechnical report provided that the groundwater level was not met down to a depth of 50 feet below surface level. Therefore, the *historical* groundwater level is taken to be approximately greater than 50 feet, bsg. This would be approximately greater than 20 feet, below where an impermeable membrane *could* be required to be installed under the lowest parking level.

The site is within an area which the City of Los Angeles designates as a *Methane Zone* (Source: *ZIMAS Parcel Profile Report (enclosed)*).

## City of Los Angeles Methane Requirements

Requirements for control of methane intrusion in the City of Los Angeles are specified in Division 71 of Article 1, Chapter IX of the Los Angeles Municipal Code (“Division 71”). Since the project is within the *Methane Zone*, the Los Angeles Department of Building and Safety (LADBS) has the authority to withhold permits for construction unless detailed plans for adequate protection against methane intrusion are submitted, if testing leads to methane mitigation being required.

The level of methane protection required depends upon the “design methane concentration,” which is defined in Division 71 as “the highest concentration of methane gas found during site testing.” Site testing is required to determine the design concentration, unless the developer accepts the most stringent methane mitigation requirements (“Level V”). If site testing is performed (e.g., to document that a lower level of mitigation is justified), then it must follow a protocol published by the Department of Building and Safety, “Site Testing Standards for Methane” (P/BC 2002-101, November 30, 2004).

P/BC 2002-101 prescribes a three-step process for methane evaluation:

- (1) Scheduling site testing either before or 30 days after any site grading;
- (2) Conducting shallow soil gas tests (not less than 4 feet, bsg); and
- (3) Installing and using multiple-depth gas probe sets where the highest concentrations of soil gases are expected to be found

For the first step, site testing was scheduled for July 20, and 21, 2017. Methane Specialists also notified Underground Service Alert of Southern California to mark the site for underground utilities, and the utilities were subsequently marked and cleared.

For the second step, P/BC 2002-101 requires one shallow sampling location for every 10,000 square feet, or portion thereof, of site area, with a minimum of two shallow soil gas probe locations. Since the parcel area is approximately 54,000 square feet, six (6) *shallow* sampling locations were required.

The third step in the City’s methane evaluation process is to collect a minimum of two samples at multiple depths, and at least one multiple-depth probeset per every 20,000 square feet, or portion thereof. Thus, the minimum of three (3) multiple-depth *deep* gas probe sets were also required.

### Shallow Soil Gas Probe Testing

City Guidelines require that one shallow-depth probe be installed for every 10,000 square feet of site area where the highest concentration of soil gas is most likely to be found, with a minimum of two shallow gas probes, regardless of the total area of the site. Since the total square footage of the parcel is approximately 54,000 square feet, Methane Specialists installed the required minimum of six (6) shallow methane probes at a depth of 4 feet bsg (see Probe Location Map).

The six shallow gas probes (SP-1 through SP-6) were drilled and installed, starting on July 20, 2017. Methane Specialists used a direct-push drill rig to hydraulically drive a 1.50-inch rod into the ground to a depth of approximately 4 feet, bsg. A ¼" polyethylene probe was then inserted into the boreholes. Approximately six inches of sand was placed in the boreholes, above and below the probe, to provide a sampling area. Bentonite was then added to the top of each of the boreholes. A hydrated bentonite plug was then placed above the bentonite, in each borehole, to form a seal. Methane Specialists recorded all the readings.

Shallow probe site testing was conducted on July 20, and 21, 2017.

### **Multiple-Depth Gas Probe Set Testing**

City Guidelines also require that one multiple-depth deep probe set be installed for every 20,000 square feet of site area where the highest concentration of soil gas is most likely to be found, with a minimum of two multiple-depth deep gas probe sets, regardless of the total area of the site. Since the total area of the site is approximately 54,000 square feet, Methane Specialists drilled and installed the required three (3) multiple-depth *deep* probesets (DP-1, DP-2 and DP-3), also starting on July 20, 2017.

The multiple-depth deep probes were also installed using direct-push drilling equipment in the same manner as were the shallow gas probes. The three deep probes were each installed as triple-well clusters, down to at least greater than 32 feet, bsg, where refusal was met. The *ground water level was not encountered* down to a depth greater than approximately 32 feet, bsg. In all cases, at each probe depth, approximately twelve inches of sand was placed in the borehole around each of the probes. Each sand layer, of each probe, was separated by a layer of bentonite, between the sampling elevations. A hydrated, bentonite, plug was then placed onto the top of each borehole to form a seal.

Multiple-depth probe site testing was similarly conducted on July 20, and 21, 2017.

### **Sampling and Analysis**

For field data sampling and analysis, Methane Specialists measured these probes for methane with a RKI Eagle portable, gas-sampling meter. The lower limit for *reporting* methane levels with the RKI Eagle is 500 ppmv (parts per million by volume).

The RKI Eagle was calibrated against standard calibrant samples by trained Methane Specialists staff members.

The probe pressures were all measured with a Dwyer Magnehelic Differential Pressure Gauge with a minimum scale division of 0.1 inch of water (H<sub>2</sub>O).

## Results of Shallow Gas Probe and Multiple-Depth Gas Probe Analysis

The attached Form 1 shows the results of the analysis of both the shallow, *and* the multiple, depth deep probe sets.

## Recommendations

In summary, for this project located in the *Methane Zone*, measurable levels of methane *were* detected while testing at this site. Per Table 1A, for the *Methane Zone (enclosed)*, this project falls under Design Level *II*, with less than 2 inches of water-column gas-pressure. Therefore, as per said Methane Code Table 1A, this project *requires only passive methane mitigation systems*.

## Disclaimer

All discussion in this report is based on information provided by the client, as well as data and conditions, as they existed at the time and date of testing at the site. Should any detail, or condition, change from that original information, then, re-consideration of the conclusions in this report could become justified. Methane Specialists cannot be held accountable for the consequences of relevant information which was not previously provided. Nor can Methane Specialists be held accountable for the consequences of changes in the project scope, or of project site conditions.

This report has been prepared for the sole use of the client, exclusively, for the completion of the subject project, alone. No other application, or interpretation, of this report is to be granted, or implied, or otherwise made, without first obtaining direct, written permission, exclusively from Methane Specialists.

Respectfully,  
Methane Specialists



*Kirby N. Arriola*

Kirby N. Arriola, P.E. (C-31416)

# **INDEX OF ENCLOSURES**

**PARCEL PROFILE REPORT**

**METHANE PROBE LOCATION MAP**

**TYPICAL METHANE PROBE SET DETAIL**

**FORM 1, PART 2 – TEST DATA**

**TABLE 1 –MITIGATION REQUIREMENTS**

**FORM 1, PART 1 – CERTIFIED RESULTS**



# City of Los Angeles Department of City Planning

6/26/2017

## PARCEL PROFILE REPORT

### PROPERTY ADDRESSES

1100 E 5TH ST

### ZIP CODES

90013

### RECENT ACTIVITY

ENV-2016-3727-EAF

### CASE NUMBERS

CPC-2017-432-CPU

CPC-2016-3726-GPA-VZC-HD-MCUP-ZAA-DB-SPR

CPC-2014-5000-CA-GPA

CPC-2014-2415-GPA-CA

CPC-2008-3125-CA

CPC-2007-3036-RIO

CPC-2001-4642-CRA

CPC-1997-423

CPC-1995-352-CPU

CPC-1986-607-GPC

ORD-183145

ORD-183144

ORD-164855-SA1950

VTT-74549

ENV-2017-433-EIR

ENV-2016-3727-EIR

ENV-2014-4000-MND

ENV-2014-2416-MND

ENV-2013-3392-CE

ENV-2007-3037-ND

ENV-1995-328-MND

AFF-56180

### Address/Legal Information

PIN Number

127-5A215 428

Lot/Parcel Area (Calculated)

9,000.0 (sq ft)

Thomas Brothers Grid

PAGE 634 - GRID G5

Assessor Parcel No. (APN)

5163024009

Tract

F. P. HOWARD AND CO'S SUBDIVISION OF THE BLISS TRACT

Map Reference

M R 12-42

Block

D

Lot

1

Arb (Lot Cut Reference)

None

Map Sheet

126A215

127-5A215

### Jurisdictional Information

Community Plan Area

Central City North

Area Planning Commission

Central

Neighborhood Council

Historic Cultural

Council District

CD 14 - Jose Huizar

Census Tract #

2060.31

LADBS District Office

Los Angeles Metro

### Planning and Zoning Information

Special Notes

None

Zoning

M3-1-RIO

Zoning Information (ZI)

ZI-2129 EAST LOS ANGELES STATE ENTERPRISE ZONE

ZI-2317 Central Industrial Redevelopment Project

ZI-2358 River Improvement Overlay District

ZI-2452 Transit Priority Area in the City of Los Angeles

General Plan Land Use

Heavy Manufacturing

General Plan Footnote(s)

Yes

Hillside Area (Zoning Code)

No

Specific Plan Area

None

Special Land Use / Zoning

None

Design Review Board

No

Historic Preservation Review

No

Historic Preservation Overlay Zone

None

Other Historic Designations

None

Other Historic Survey Information

None

Mills Act Contract

None

CDO: Community Design Overlay

None

CPIO: Community Plan Imp. Overlay

None

District

None

Subarea

None

CUGU: Clean Up-Green Up

None

NSO: Neighborhood Stabilization Overlay

No

POD: Pedestrian Oriented Districts

None

SN: Sign District

No

Streetscape

No

Adaptive Reuse Incentive Area

None

Ellis Act Property	No
Rent Stabilization Ordinance (RSO)	No
CRA - Community Redevelopment Agency	Central Industrial Redevelopment Project
Central City Parking	Yes
Downtown Parking	No
Building Line	None
500 Ft School Zone	No
500 Ft Park Zone	No

**Assessor Information**

Assessor Parcel No. (APN)	5163024009
APN Area (Co. Public Works)*	0.895 (ac)
Use Code	3100 - Industrial - Light Manufacturing - One Story
Assessed Land Val.	\$9,180,000
Assessed Improvement Val.	\$4,386,000
Last Owner Change	07/16/2015
Last Sale Amount	\$18,000,180
Tax Rate Area	15117
Deed Ref No. (City Clerk)	558904

4-651  
377036-37  
371086  
3324768  
2518936  
2501384  
2426888  
1950204  
126622  
1233195  
1111014

**Building 1**

Year Built	1930
Building Class	C5B
Number of Units	0
Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	15,968.0 (sq ft)

**Building 2**

Year Built	1928
Building Class	C5B
Number of Units	0
Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	7,668.0 (sq ft)

**Building 3**

Year Built	1959
Building Class	S1
Number of Units	0
Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	9,488.0 (sq ft)

**Building 4** No data for building 4

**Building 5**

Year Built	1985
Building Class	C5
Number of Units	0



Number of Bedrooms	0
Number of Bathrooms	0
Building Square Footage	11,920.0 (sq ft)

**Additional Information**

Airport Hazard	None
Coastal Zone	None
Farmland	Area Not Mapped
Very High Fire Hazard Severity Zone	No
Fire District No. 1	No
Flood Zone	None
Watercourse	No
Hazardous Waste / Border Zone Properties	No
Methane Hazard Site	Methane Zone
High Wind Velocity Areas	No
Special Grading Area (BOE Basic Grid Map A-13372)	No
Oil Wells	None

**Seismic Hazards**

<b>Active Fault Near-Source Zone</b>	
Nearest Fault (Distance in km)	1.52985216
Nearest Fault (Name)	Puente Hills Blind Thrust
Region	Los Angeles Blind Thrusts
Fault Type	B
Slip Rate (mm/year)	0.70000000
Slip Geometry	Reverse
Slip Type	Moderately / Poorly Constrained
Down Dip Width (km)	19.00000000
Rupture Top	5.00000000
Rupture Bottom	13.00000000
Dip Angle (degrees)	25.00000000
Maximum Magnitude	7.10000000
Alquist-Priolo Fault Zone	No
Landslide	No
Liquefaction	No
Preliminary Fault Rupture Study Area	No
Tsunami Inundation Zone	No

**Economic Development Areas**

Business Improvement District	ARTS DISTRICT
Promise Zone	None
Renewal Community	No
Revitalization Zone	Central City
State Enterprise Zone	EAST LOS ANGELES STATE ENTERPRISE ZONE
Targeted Neighborhood Initiative	None

**Public Safety**

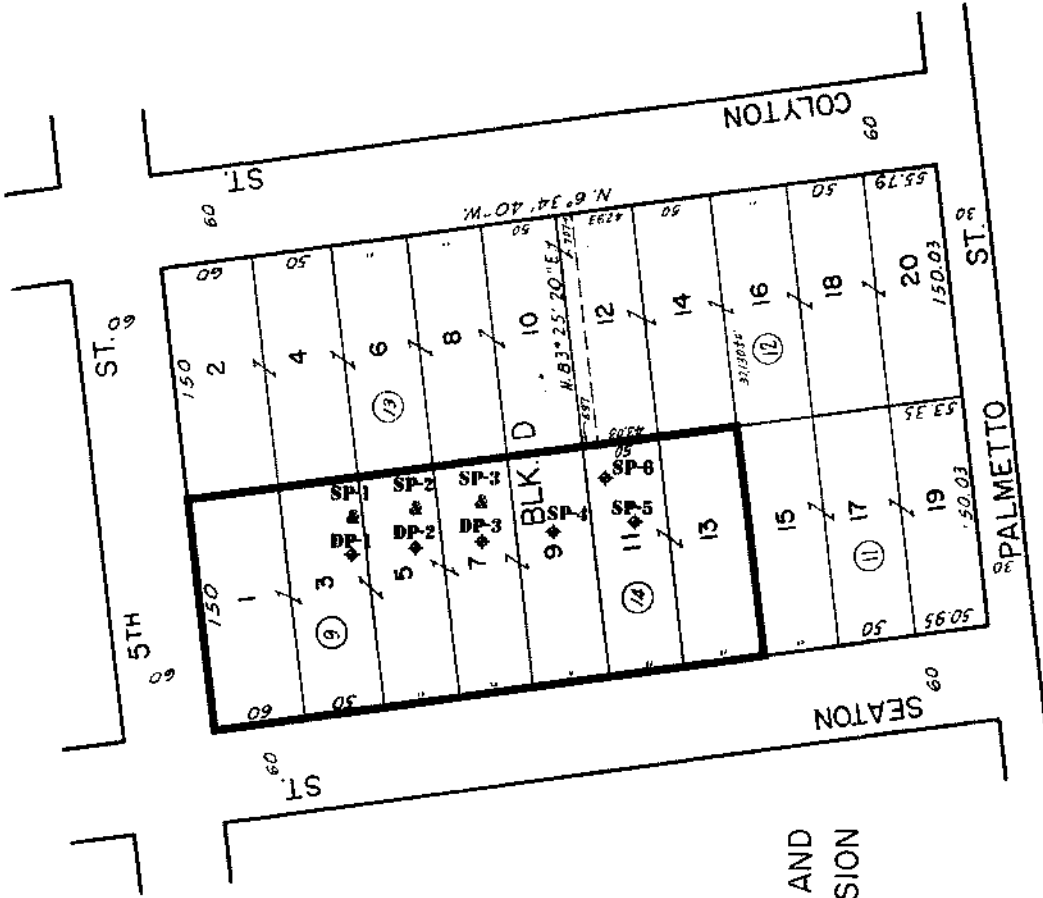
<b>Police Information</b>	
Bureau	Central
Division / Station	Central
Reporting District	159
<b>Fire Information</b>	
Bureau	Central
Batallion	1
District / Fire Station	4
Red Flag Restricted Parking	No

# J3449: 1100 E. 5TH STREET,

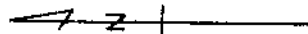
# LOS ANGELES, CA - 90013

COUNTY OF LOS ANGELES, CALIF.

5163 24  
SCALE 1" = 80'

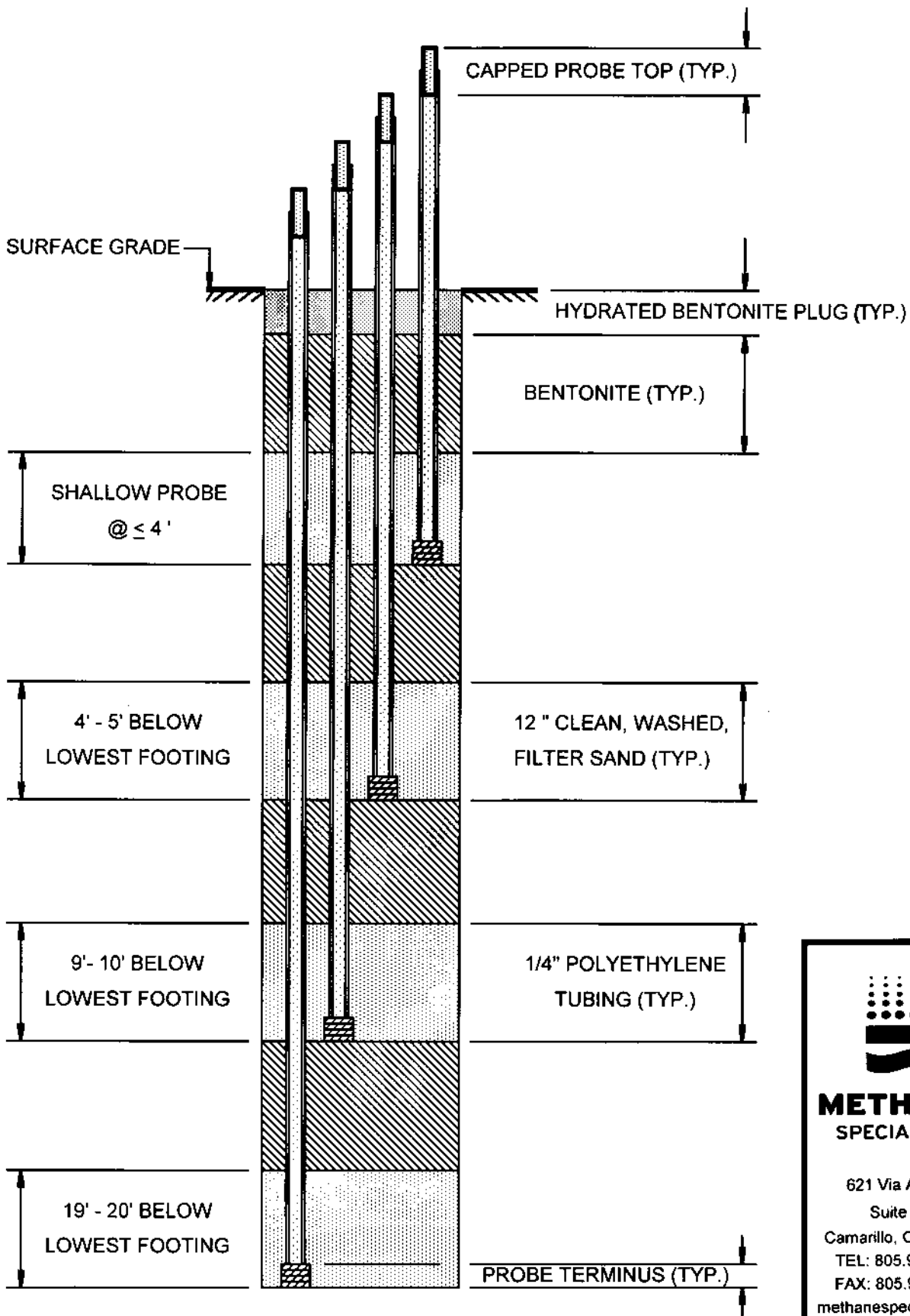


F. P. HOWARD AND  
CO'S. SUBDIVISION  
M. R. 12 - 42



CODE  
15117

FOR PREV. ASSMT. SEE: 17-23



**METHANE  
SPECIALISTS**

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**TEMPORARY MULTI-STAGE GAS MONITORING PROBES FOR METHANE**

FORM 1 ( CONTINUED ) - CERTIFICATE OF COMPLIANCE FOR METHANE TEST DATA

P/BC 2002-101

Part 2: Test Data - Shallow Soil Gas Test and Gas Probe Test

Site Address: **1100 E. 5th Street, Los Angeles, CA - 90013**

Job # **3449**

Description of Gas Analysis Instrument(s):

Instrument Name and Model: **RKI Eagle**

Instrument Accuracy: **500** ppm/v.

City of Los Angeles Testing License #: **10202**

Page **1** of **1**

Date	Time	Probe Set #	Stablized CH4 Concentration (ppm/v)	Pressure (inches of water-column)	Probe Depth (feet)	Descriptions / Comments: <i>no perched water was met</i> <i>- Refusal was met as shown below</i> <i>- Groundwater was not met at any probe depth</i>
7/20/2017	2:10	SP-1	< 500	< 0.1	4	
"	2:15	DP-1	< 500	< 0.1	5	
"	2:30	DP-1	< 500	< 0.1	10	
"	2:25	DP-1	< 500	< 0.1	32	<=Refusal met at greater than 37' bsg
"	3:05	SP-2	< 500	< 0.1	4	
"	3:00	DP-2	< 500	< 0.1	5	
"	2:55	DP-2	< 500	< 0.1	10	
"	2:50	DP-2	< 500	< 0.1	32	<=Refusal met at greater than 32' bsg
"	3:50	SP-3	< 500	< 0.1	4	
"	3:45	DP-3	< 500	< 0.1	5	
"	3:40	DP-3	< 500	< 0.1	10	
"	3:35	DP-3	500	< 0.1	32	<=Refusal met at greater than 32' bsg & Maximum Stabilized CH4 Reading
"	4:00	SP-4	< 500	< 0.1	4	
"	4:05	SP-5	< 500	< 0.1	4	
"	4:10	SP-6	< 500	< 0.1	4	
7/21/2017	8:35	SP-1	< 500	< 0.1	4	
"	8:30	DP-1	< 500	< 0.1	5	
"	8:25	DP-1	< 500	< 0.1	10	
"	8:20	DP-1	< 500	< 0.1	32	
"	8:55	SP-2	< 500	< 0.1	4	
"	8:50	DP-2	< 500	< 0.1	5	
"	8:45	DP-2	< 500	< 0.1	10	
"	8:40	DP-2	500	< 0.1	32	
"	9:15	SP-3	< 500	< 0.1	4	
"	9:10	DP-3	< 500	< 0.1	5	
"	9:05	DP-3	< 500	< 0.1	10	
"	9:00	DP-3	500	< 0.1	32	
"	9:20	SP-4	< 500	< 0.1	4	
"	9:25	SP-5	< 500	< 0.1	4	
"	9:30	SP-6	< 500	< 0.1	4	

INSTRUMENTATION CALIBRATION RECORD:

WATER ENCOUNTERED ? (Y) (N) DEPTH: ( see above )

DATE: 7/20/2017 TIME: 8:30 A.M

INIT: R.C.

REFUSAL ? (Y) (N) DEPTH: ≥ 32 ft., bsg

DATE: 7/21/2017 TIME: 6:30 A.M

INIT: D.B.

COMMENTS: "< 500 ppmv" <=> "Non-Detect" <=> "ND"

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

INIT: \_\_\_\_\_

TESTER: Ramon Camacho & Dave Bell

# TABLE 1A - MITIGATION REQUIREMENTS FOR METHANE ZONE

SITE DESIGN LEVEL		LEVEL I		LEVEL II		LEVEL III		LEVEL IV		LEVEL V	
DESIGN METHANE CONCENTRATION (ppm/v)		0 - 100		101 - 1,000		1,001 - 5,000		5,001 - 12,500		>12,500	
DESIGN METHANE PRESSURE (inches of water column)		≤2"	>2"	≤2"	>2"	≤2"	>2"	≤2"	>2"	ALL PRESSURES	
PASSIVE SYSTEM	DE-WATERING SYSTEM *		X*	X*	X*	X*	X*	X*	X*	X*	
	SUB-SLAB VENT SYSTEM	PERFORATED HORIZONTAL PIPES	X	X	X	X	X	X	X	X	X
		GRAVEL BLANKET UNDER MEMBRANE	2"	2"	2"	3"	2"	3"	2"	4"	4"
		GRAVEL THICKNESS SURROUNDING PIPES	2"	2"	2"	3"	2"	3"	2"	4"	4"
		VENT RISERS +	X+	X+	X+	X+	X+	X+	X+	X+	X+
	IMPERVIOUS MEMBRANE		X	X	X	X	X	X	X	X	X
ACTIVE SYSTEM	SUB-SLAB VENT SYSTEM	MECHANICAL EXTRACTION SYSTEM +							X+	X+	
	LOWEST OCCUPIED SPACE SYSTEM	GAS DETECTION SYSTEM				X	X	X	X	X	X
		MECHANICAL VENTILATION SYSTEM			X	X	X	X	X	X	X
		ALARM SYSTEM			X	X	X	X	X	X	X
	CONTROL PANEL			X	X	X	X	X	X	X	X
MISC. SYSTEM	TRENCH DAM		X	X	X	X	X	X	X	X	
	CONDUIT OR CABLE SEAL FITTINGS		X	X	X	X	X	X	X	X	
	ADDITIONAL VENT RISERS +									X+	


- X** ⇒ Required, as per the Methane Code of the City of Los Angeles.
- \*** ⇒ De-Watering not required when the maximum historical high groundwater table elevation, or projected post-construction groundwater level, is more than twelve inches below the bottom of the perforated horizontal pipes.
- +** ⇒ Vent risers maximum spacing shall be less than, or equal to, 100 Linear Feet, measured between vent risers.

**FORM 1 - CERTIFICATE OF COMPLIANCE FOR METHANE TEST DATA**

P/BC 2002-101

Part 1: Certification Sheet

Site Address: 1100 E. 5th Street, Los Angeles, CA - 90013 Job No. 3449  
 Legal Description: Tract: F. P. Howard and Co. Lot(s): 1, 3, 5, 7, 9, 11 + 13 Block: D  
 Building Use: new '8-story mixed use project' to be built 'over 3 subterranean parking levels'

Name of Architect, Engineer, or Geologist: <b>Kirby N. Arriola, P.E.</b>	Architect's, Engineer's or Geologist's Stamp  
Mailing Address: <b>Methane Specialists 621 Via Alondra, # 610 Camarillo, CA - 93012</b>	
Telephone: <b>(805) 987-5356</b>	
Name of Testing Laboratory: <b>Methane Specialists</b>	
City Test Lab License #: <u>10202</u> Telephone: <b>(805) 987-5356</b>	

I hereby certify that I have tested the above site for the purposes of methane mitigation and that all procedures were conducted by a City of Los Angeles licensed testing agency in conformity with the requirements of the LADBS Information Bulletin P/BC 2002-101. Where the inspection and testing of all or part of the work above is delegated, full responsibility shall be assumed by the architect, engineer or geologist whose signature is affixed hereon.

Signed: *Kirby N. Arriola* Date: 21 Jul 2017

**Required Data:**

- \* Project is in the (**Methane Zone**) or (~~Methane Buffer Zone~~).
- \* Depth of Groundwater observed during testing: > 20' below the Impervious Membrane (**at > 50' below surface**)
- \* Depth of Historical High Ground Water Table Elevation\*: > 20' below the Impervious Membrane (**at ~ 50' bsg**)
- \* Design Methane Concentration\*\*: 500 parts per million in volume (ppm/v). (**i.e.: 1% LEL**)
- \* Design Methane Pressure Value\*\*\*: < 0.1 inches of water column.
- \* Site Design Level: (Level I, Level II, Level III, Level IV, Level V) with < 2.0 inches of water column

**Dewatering:**

- \* Dewatering (is) (**is not**) required for methane mitigation per Section 91.7104.3.7. (**subject to Final Geotech Report**)
- \* Pump discharge rate not provided cubic feet per minute per reference geology or soil report:

dated \_\_\_\_\_

**Additional Investigation:**

- \* Additional Investigation (was) (**was not**) conducted. (**by Methane Specialists**)

**Latest Grading on Site:**

- \* Date of last grading on site (**was**) (~~was not~~) more than 30 days before Site Testing.

**Notes:**

- \* Historical High Ground Water Table Elevation shall mean the highest recorded elevation of ground water based on historical records and field investigations as determined by the engineer for the methane mitigation system.
- \*\* Design Methane Concentration shall mean the highest recorded measured methane concentration from either Shallow Soil Gas Test or any Probe Set on the site.
- \*\*\* Design Methane Pressure shall mean the highest total pressure measured for any Gas Probe Set on the site.