611 Lunken Park Drive
Cincinnati, OH 45226
[513] 321 5816

To: Mr. Phil West
Heapy Engineering
1400 W. Dorothy Lane
Dayton, OH 45409
(937) 224-0861

From: Mr. Joseph A. Tussey, CHMM
OH AHES #32388
Terracon Consultants, Inc.

Date: April 23, 2014

Subject: Additional Asbestos Sampling – HP Steam Line at B147 & Tunnel
Project: Install Steam Line Bypass B147 to B121
VA Project No. 552-15-210
Dayton VA Medical Center
4100 West Third Street
Dayton, Montgomery County, Ohio
Terracon Project No. N1137167

☐ Approved	☐ URGENT	☒ For Your File
☐ Rejected	☐ For Your Review	☐ For Your Action
☐ Approved as Noted	☐ Reply ASAP	
☐ Revise & Resubmit	☐ Hard copy will follow	
	☒ Hard copy will not follow	

Remarks:

Per your request, Terracon return to the project site on March 26, 2014 to collect additional samples of suspect asbestos-containing pipe insulation on a high pressure steam line at the vicinity of the B147 and tunnel juncture. Specifically, samples were collected from: 1) hard fitting insulation on a high pressure steam line, which is insulated with fiberglass, inside the steam tunnel just beneath the manhole cover at the B147 juncture, and 2) pre-formed block pipe insulation on a high pressure steam line that enters B147 from the tunnel, and is located inside of a pit at the southwest corner. Three samples were collected randomly per EPA AHERA regulations from each distinct suspect homogeneous insulating material on the subject high pressure steam line. Samples were submitted to a NVLAP-accredited laboratory for analyses by polarized light microscopy (PLM).

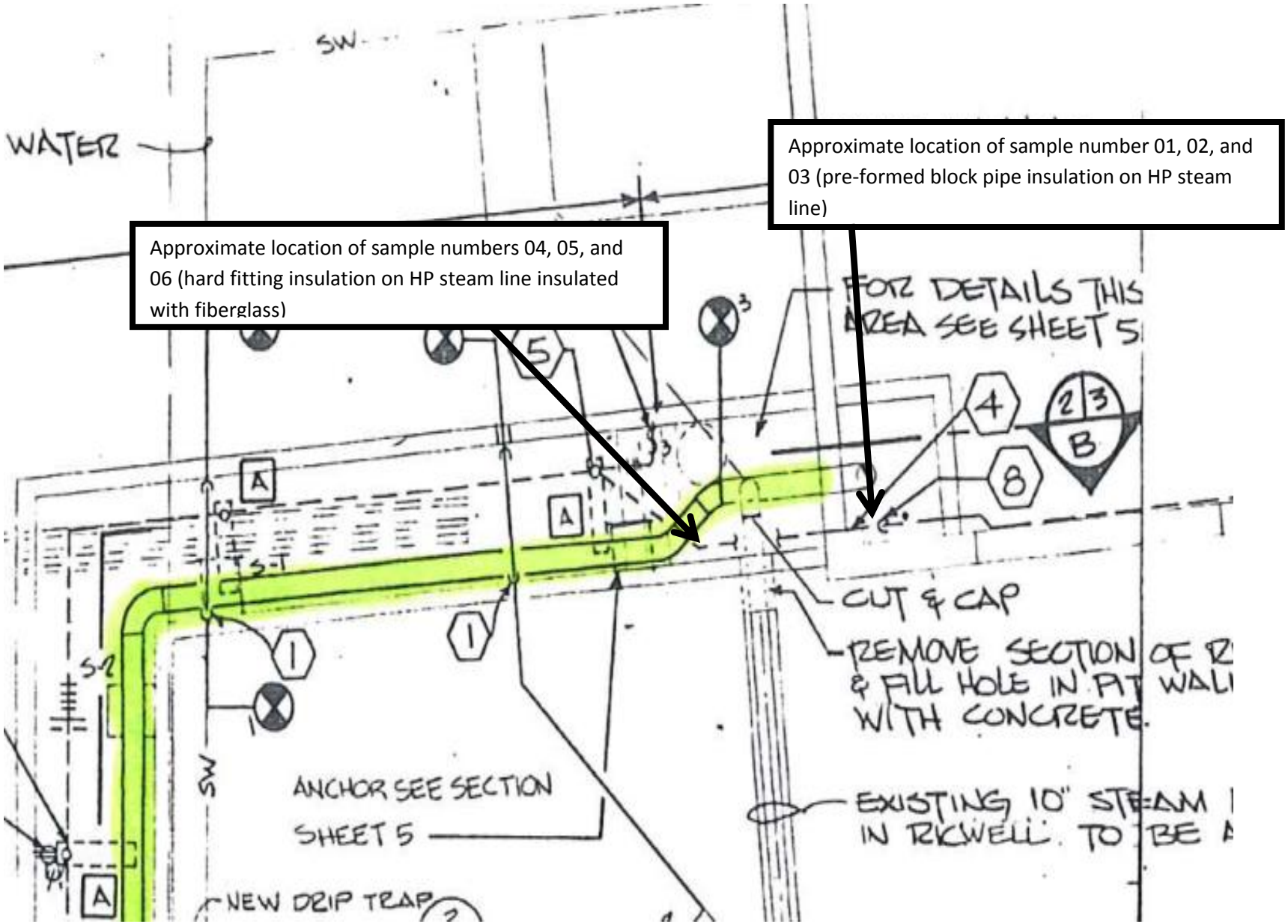
Analytical results for each homogenous suspect asbestos-containing insulation material (hard fitting insulation on a fiberglass insulated high pressure steam line in the tunnel and pre-formed block pipe insulation on a high pressure steam line in the southwest pit of B147) indicated that no asbestos was detected in these samples. The laboratory analytical report, sample chain of custody, and drawing of approximate sample locations is attached.

SUSPECT ACM - BULK MATERIAL SAMPLE LOG

Date: Field date – March 26, 2014
Inspector: Joe Tussey
Project: Dayton VA – Install Steam Bypass B147 to B121
Project # N1137167

Terracon
611 Lunken Park Drive
Cincinnati, Ohio 45226
(513) 321.5816

Sample Number	Description	Sample Location	Material Location(s)	Comments / Results
01-PI1-01	Pre-formed block pipe insulation	On HP steam line, B147 at SW corner where line enters from tunnel at wall	Inside B147 at SW corner, where lines enter from tunnel	
01-PI1-02		On HP steam line, B147 at SW corner where line enters from tunnel ~ 1 ft E of wall		
01-PI1-03		On HP steam line, B147 at SW corner where line enters from tunnel ~4 ft E of wall		
02-MJ4-04	Mudded fitting insulation on fiberglass insulated lines	On HP steam line insulated with fiberglass, in tunnel below manhole entry next to B147, 1st fitting W of large valve	Inside tunnel at end near B147 on HP steam line with fiberglass insulation and outer canvass jacket	
02-MJ4-05		On HP steam line insulated with fiberglass, in tunnel below manhole entry next to B147, 1st fitting W of large valve		
02-MJ4-06		On HP steam line insulated with fiberglass, in tunnel below manhole entry next to B147, 2nd fitting W of large valve		



Approximate location of additional samples collected from a high pressure steam line (March 26, 2014)

IATL **International Asbestos Testing Laboratories**

9000 Commerce Parkway Suite B Mt. Laurel, NJ 08054
Telephone: 856-231-9449 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Terracon
611 Lunken Park Drive
Cincinnati OH 45226

Report Date: 4/3/2014
Report No.: 329537
Project: Dayton VA Steam Bypass B147-B121
Project No.: N1137167

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 5272909 **Description / Location:** Off-White Insulation
Client No.: 01-PI1-01 On HP Steam Line, B147 At SWCorner

% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	2	Cellulose	98

Lab No.: 5272910 **Description / Location:** Off-White Insulation
Client No.: 01-PI1-02 On HP Steam Line, B147 At SWCorner

% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	2	Cellulose	93
		5	Fibrous Glass	

Lab No.: 5272911 **Description / Location:** Off-White Insulation
Client No.: 01-PI1-03 On HP Steam Line, B147 At SWCorner

% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	Trace	Cellulose	95
		5	Fibrous Glass	

Lab No.: 5272912 **Description / Location:** Off-White/Tan Insulation
Client No.: 02-MJ4-04 HPSteamLineTunnelBelowManholeEntryByB147

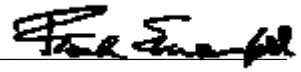
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	20	Fibrous Glass	80

Accreditations: **NIST-NVLAP No. 101165-0** **NY-DOH No. 11021** **AIHA-LAP, LLC No. 100188**

Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

Comments: Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analysis Performed By: R. Kennedy

Approved By: 

Date: 4/3/2014

Frank E. Ehrenfeld, III
Laboratory Director

IATL **International Asbestos Testing Laboratories**

9000 Commerce Parkway Suite B Mt. Laurel, NJ 08054
Telephone: 856-231-9449 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Terracon
611 Lunken Park Drive
Cincinnati OH 45226

Report Date: 4/3/2014
Report No.: 329537
Project: Dayton VA Steam Bypass B147-B121
Project No.: N1137167

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 5272913 **Description / Location:** Off-White Insulation
Client No.: 02-MJ4-05 HPSteamLineTunnelBelowManholeEntryByB147

% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	5	Fibrous Glass	95

Lab No.: 5272914 **Description / Location:** Tan Insulation
Client No.: 02-MJ4-06 HPSteamLineTunnelBelowManholeEntryByB147

% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	40	Fibrous Glass	60

Accreditations: **NIST-NVLAP No. 101165-0** **NY-DOH No. 11021** **AIHA-LAP, LLC No. 100188**

Analytical Method: US EPA 600/R-93/116 by Polarized Light Microscopy, (ELAP 198.1 where applicable)

Comments: Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analysis Performed By: R. Kennedy

Date: 4/3/2014

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

–Bulk Asbestos –

Contact Information

Client Company:	Terracon Consultants, Inc.	**Project Number:**	N1137167
Office Address:	611 Lunken Park Drive	**Project Name:**	Dayton VA Steam Bypass
City, State, Zip:	Cincinnati, OH 45226	**Primary Contact:**	Joe Tussey
Fax Number:	513-321-0294	**Office Phone:**	513-321-0294
Email Address:	jatussey@terracon.com	**Cell Phone:**	513-332-5034

PLM Instructions:

- ■ PLM: Bulk Asbestos Building Materials EPA 600 R-93/116, 1993
- ☐ PLM: Bulk Asbestos Building Materials EPA 600 M-4/82-020, 1982
- ☐ PLM: Bulk Asbestos Building Materials NIOSH 9002, 1985
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.1, 2002
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.6, 2010
- ☐ TEM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.4, 2009

- ■ PLM: Point Counting
  - ☐ PC: via ELAP 198.1
  - ☐ PC: 400 Points
  - ☐ PC: 800 Points *
  - ☐ PC: 1600 Points *
- ■ PLM: Instructions for Multi-Layered Samples
  - ☐ Analyze and Report All Separable Layers per EPA 600
  - ☐ Report Composite for Drywall Systems per NESHAP
  - ☐ Report All Layers and Composite Where Applicable
  - ☐ Only Analyze and Report Specifically Noted Layer
- ☐ PLM: Analyze Until Positive (Positive Stop)
  - ☐ AUP: by Homogenous Area as Noted
  - ☐ AUP: by Material Type as Noted
- ☐ PLM: NOB via 198.6
  - ☐ PLM: Friable via EPA 600 2.3
  - ☐ If <1% by PLM, to TEM via 198.4 *
  - ☐ If <1% by PLM, Hold for Instructions
- ☐ PLM: Non-Building Material*,** (Dust, Wipe, Tape)
  - ☐ Soil or Vermiculite Analysis*
  - ☐ CARB 435

E-MAILED 4/3/14 @ 11:15

Special Instructions: _____

** Additional charge and turnaround may be required* *** Alternative Method (ex: EPA 600/R-04/004) may be recommended by Laboratory*

Turnaround Time

Preliminary Results Requested Date: Thurs. April 3, 2014 (Specific date / time)

☐ Verbal ■ Email ☐ Fax

☐ 10 Day ☐ 5 Day ■ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Terracon	Date:	March 28, 204	Time:	~3:30pm fed Ex drop off at Lunken
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:	4/1/14	Time:	
Analysis(Name(s) / iATL):	RKM032014	Date:		Time:	
QA/QC Review (Name / iATL):		Date:	4-3-14	Time:	MAR 31 2014
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

RECEIVED

iATL - By _____