UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

AT-18J

MEMORANDUM

DATE: June 16, 2015

SUBJECT: Bridgeport Dataset

FROM: Bilal Qazzaz
ARD Quality Assurance Coordinator
Air Monitoring and Analysis Section

6-16-15

THROUGH: Michael Compher
Section Chief
Air Monitoring and Analysis Section

MC 6/22/2015

TO: Loretta Lehrman
ARD Quality Assurance Manager
Air Monitoring and Analysis Section

On May 19 through May 20, 2015, USEPA collected air monitoring data for hydrogen sulfide and methane near the Rex Energy facilities: Bridgeport, Petrolia, and Lawrenceville, Illinois. The Bridgeport dataset has been officially submitted for my review and validation. I have reviewed the dataset and the attached (electronic) pre- and post-campaign quality control results according to the GMAP Quality Assurance Project Plan signed on March 26, 2015. As a result of the GMAP system passing the pre- and post-campaign quality control checks, I recommend validating the dataset based on the quality control criteria being met.

If you have any questions about my recommendation, please feel free to contact me at qazzaz.bilal@epa.gov.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

AT-18J

MEMORANDUM

DATE: 06/08/15

SUBJECT: Bridgeport, IL: Rex Bridgeport, Petrolia, and Lawrenceville well fields GMAP Air Monitoring Data; May 2015

FROM: Marta Fuoco MF
Environmental Scientist
Air Monitoring and Analysis Section

TO: Bilal Qazzaz 6-10-15
Environmental Scientist
Air Monitoring and Analysis Section

On May 19-20, 2015 USEPA collected air monitoring data for hydrogen sulfide and methane around the IL Basin well fields in Southern, IL. This memorandum officially submits five data sets for your review and validation. I have also included the necessary supporting documentation in the attachments. The data sets are available on the G shared drive and have been appropriately protected against inadvertent manipulation. The flag descriptions can be found in Attachment 2. Please see Attachment 1 for the Activity Log files; the entire set of audit and calibration files will be submitted electronically.

The file names and dates of data collection are as follows:

File Name: BFADS02-20150519-0656-DataQC CHECKS.xlsx	**Date:** 05/19/15
File Name: BFADS02-20150519-0850-UserLog.xlsx	**Date:** 05/19/15
File Name: BFADS02-20150519-1234-UserLog.xlsx	**Date:** 05/19/15
File Name: BFADS02-20150520-0812-UserLog.xlsx	**Date:** 05/20/15
File Name: BFADS02-20150520-1555-UserLogQC CHECKS.xlsx	**Date:** 05/20/15

Post audits were completed on May 20, 2015 by US EPA.

Attached to this memorandum are the following:
Attachment 1: Audit Sheets
Attachment 2: Explanation of Data Flags

Please review all data sets according to the attached Quality Assurance Project Plan signed on March 26, 2015. If you have questions about this information please contact me. I appreciate your involvement in the data validation process.

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Attachment 1

GMAP Activity Log File

All Audit & Calibration Sheets located:
G:\Air Toxics And Assessment Branch\GMAP\2015 season\061915 Bridgeport\data

COMPLETE THIS LOG EACH TIME THE PICARRO IS POWERED UP			
DATE	INITIALS	ACTIVITY (calibration, QC check, audit, other checks, sampling)	COMMENTS
3/4/15	SAA	Pre Season annual calibration Start	conducting Z for CH_4 adjusted CH_4 Z
3/17/15	SAA	Pre Season annual calibration	conducting H_2S span adjustment of H_2S span * ran MDL test overnight
3/18/15	SAA	Pre Season annual calibration & QC checks	conducting checks & re cal if needed. Rerun MDL adjusted CH_4 span & zero ran QC checks after all adjustments
3/20/15	SAA CM	Testing	Conducting test of system. Drove to Rowan Park & drove around BP Whiting.
3/31/15	SAA CM	QC check, sampling Indianapolis	Metalworking Lubricants pre sampling QC checks & Sampling
4/1/15	GM CM	sampling, QC check Indianapolis	Metalworking lubricants and 1 WWTP sampling + post-sampling QC checks
4/15/15	SAA	Sampling QC checks Indianapolis	MWL, Concord Neighborhood Center Stationary sampling

begin use new form per SOP effective date 5/1/15
SAA 5/6/15

CALIBRATION

CALIBRATION - COMPLETE THIS LOG EACH TIME A CALIBRATION IS COMPLETED						
CALIBRATION DATE	3/4/15	3/17/15	3/18/15	3/18/15		
INITIALS	STA	STA	STA	STA		
START TIME	10:41	11:12	09:46	10:34		
END TIME	11:50	11:54	10:32	11:07		
PARAMETER	CH_4	H_2S	CH_4	CH_4		
CYLINDER SERIAL NUMBER	N/A	FF8379	BR000 8115	N/A		
CYLINDER CERTIFICATION DATE	N/A	7-5-12	12-13-14	N/A		
CYLINDER PSI (MUST BE > 100 PSI)	N/A	1100	2225	N/A		
CERTIFIED CYLINDER CONCENTRATION (PPM)	Ø	50.41	10.16	Ø		
PICARRO RESPONSE (PPM)	0.487 → -0.012	52.13 → 50.37	9.708 → 10.138	0.200 → 0.005		
PERCENT DIFFERENCE (MUST BE WITHIN 10%)	N/A	3.4% → -0.1%	-3.7% → -0.2%	N/A		
INITIAL SLOPE	1.16827	0.9717	1.16827 → 1.20985	1.20985		
FINAL SLOPE	N/A	0.9387	1.20985	N/A		
INITIAL ZERO	-1.83	8.0	-2.32	-2.32		
FINAL ZERO	-2.32	N/A	N/A	-2.45		

begin use new form per SOP effective date 5/1/15.
STA 5/6/15

HIGH H_2S QC

COMPLETE THIS LOG EACH TIME A QC CHECK IS COMPLETED WITH FF8379					
QC CHECK DATE	3-18-15	3-18-15	3-31-15	4-1-15	4/15/15
INITIALS	SA	SA	SA	CM	SA
START TIME	09:30	11:27	0848	1316	1258
END TIME	09:46	11:34	0858	1322	1305
CYLINDER CERTIFICATION DATE	7-5-12	7-5-12	7-5-12	7-5-12	7/5/12
CYLINDER PSI (MUST BE > 100 PSI)	1000	1000	900	900	900
CERTIFIED CYLINDER CONCENTRATION (PPM)	50.41	50.41	50.41	50.41	50.41
PICARRO RESPONSE (PPM)	50.36	50.40	50.35	50.36	50.28
PERCENT DIFFERENCE (MUST WITHIN 15%)	-0.1%	0%	-0.1%	-0.1%	-0.3%

begin using new form per SOP effective date 5/1/15. SA 4/15

CH_4 QC

COMPLETE THIS LOG EACH TIME A QC CHECK IS COMPLETED WITH BR0008115					
QC CHECK DATE	3/18/15	3/18/15	3/31/15	4/1/15	4/15/15
INITIALS	SAA	SAA	AM	AM	SAA
START TIME	09:46	11:09	859	1322	1308
END TIME	09:50	11:15	9:09	1327	1315
CYLINDER CERTIFICATION DATE	12-13-14	12-13-14	12-13-14	12-13-14	12-13-14
CYLINDER PSI (MUST BE > 100 PSI)	2225	2200	2100	2100	2150
CERTIFIED CYLINDER CONCENTRATION (PPM)	10.16	10.16	10.16	10.16	10.16
PICARRO RESPONSE (PPM)	9.707	10.007	9.998	9.999	10.001
PERCENT DIFFERENCE (MUST WITHIN 15%)	-4.5%	-1.5%	-1.6%	-1.6%	~~-0.5%~~ SAA 4/15/15 -1.6%

begin using new form per SOP effective date 5/1/15.

LOW H_2S QC

1

CAS 3/18/15 XL0018338

COMPLETE THIS LOG EACH TIME A QC CHECK IS COMPLETED WITH ~~XL0018338~~					
QC CHECK DATE	3/18/15	3/18/15	3/31/15	4/1/15	4/15/15
INITIALS	CAS	CAS	CM	CM	CAS
START TIME	9:37	11:15	9:11	1327	1318
END TIME	9:44	11:25	9:19	1333	1327
CYLINDER CERTIFICATION DATE	12-23-14	12-23-14	12-23-14	12-23-14	12-23-14
CYLINDER PSI (MUST BE > 100 PSI)	2100	2100	2100	2100	2100
CERTIFIED CYLINDER CONCENTRATION (PPM)	5.261	5.261	5.261	5.261	5.261
PICARRO RESPONSE (PPM)	~~5.776~~ CAS 3/18/15 5.078	5.061	4.986	5.014	5.006
PERCENT DIFFERENCE (MUST WITHIN 15%)	-3.5%	-3.8%	-5.2%	-4.7%	-4.8%

begin using new form per SOP effective date 5/1/15 CAS 5/1/15

HIGH H_2S Audit

COMPLETE THIS LOG EACH TIME AN AUDIT IS COMPLETED WITH FF56158					
AUDIT DATE	3-18-15				
INITIALS	[illegible]				
START TIME	2031				
END TIME	2034				
CYLINDER CERTIFICATION DATE	7-5-12				
CYLINDER PSI (MUST BE > 100 PSI)	1380				
CERTIFIED CYLINDER CONCENTRATION (PPM)	50.36				
PICARRO RESPONSE (PPM)	49.94				
PERCENT DIFFERENCE (MUST WITHIN 15%)	-.83%				

Begin using new form per SOP effective date 5/1/15. SAA -1.1.-

LOW H_2S Audit

COMPLETE THIS LOG EACH TIME AN AUDIT IS COMPLETED WITH FF6810					
AUDIT DATE	3-18-15				
INITIALS	[illegible]				
START TIME	2:05				
END TIME	2:14				
CYLINDER CERTIFICATION DATE	4-22-14				
CYLINDER PSI (MUST BE > 100 PSI)	2100				
CERTIFIED CYLINDER CONCENTRATION (PPM)	5.161				
PICARRO RESPONSE (PPM)	4.890				
PERCENT DIFFERENCE (MUST WITHIN 15%)	-5.3%				

GMAP AQS Null Data Codes:

Qualifier Code	Qualifier Desc	Qualifier Type Desc	Qualifier Type	EPA R5 Comments:
AM	Miscellaneous Void	Null Data Qualifier	NULL	
AN	Machine Malfunction	Null Data Qualifier	NULL	Communication error; instrument not collecting, data set to null [NA]
AT	Calibration	Null Data Qualifier	NULL	
AZ	QC Audit	Null Data Qualifier	NULL	
BA	Maintenance/Routine Repairs	Null Data Qualifier	NULL	
BN	Sample Value Exceeds Media Limit	Null Data Qualifier	NULL	Values exceed range of unit in one or more channels and are invalid; both channels invalidated
MD	Value less than MDL	Null Data Qualifier	NULL	less than MDL (-6); invalid
ND	No value detected	Quality Assurance Qualifier	QA	zero drift; [MDL x -1]
QX	Does not meet QC criteria	Null Data Qualifier	NULL	

MDL = 7.1 per the MDL test on 3-18-15.