TETRA TECH

January 3, 2014

Mr. Randy Schademann
EPA On-scene Coordinator
U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd.
Lenexa, Kansas 66219

Subject: **Trip Report and Data Summary – November 2013 Sampling**
General Motors AC Rochester Site, Sioux City, Iowa
CERCLIS ID No. IAD000686899
U.S. EPA Region 7 START 4, Contract No. EP-S7-13-06, Task Order No. 0037
Task Monitor: Randy Schademann, EPA On-scene Coordinator

Dear Mr. Schademann:

Tetra Tech, Inc. is submitting documentation regarding sampling of selected City of Sioux City public water supply (PWS) wells, raw water, finished water, and effluent water from the Hydraulic Capture System (HCS) at the General Motors (GM) AC Rochester Site in Sioux City, Iowa. During this sampling event, a meeting also occurred with a Layne Christensen Company (Layne) well service technician to diagnose problems with several inoperative HCS well pumps and controllers. Layne is to provide a cost estimate for restoring the HCS to full operation.

Superfund Technical Assessment and Response Team (START) member Jenna Mead met Sioux City Water Department personnel on November 19, 2013, to collect samples from PWS wells 2, 6, 10, and 24 (collector well) at Riverfront Park, downgradient of the GM AC Rochester site. The PWS wells were not actively pumping and had to be turned on prior to sampling. Well 10 is within in a vault; consequently, Water Department personnel collected the well sample from within the confined space. At each well's sampling spigot, the sampling line was purged for about 5 minutes prior to sampling; then three 40-milliliter vials of water pre-preserved with hydrochloric acid were collected at the spigot. Samples of raw and finished PWS water were collected at the City's Zenith Water Treatment Plant (WTP). Since the most recent previous sampling event in June 2012, a new treatment building had been constructed at the Zenith WTP, and water flow had been reconfigured. The raw water was sampled from a spigot in the new building rather than in the basement of the main building where it had been sampled previously. The finished water was sampled in the basement of the main building, rather than at the laboratory spigot.

Samples were stored on ice at or below a temperature of 4 degrees Celsius pending submittal to EPA Region 7 laboratory in Kansas City, Kansas. Samples were delivered on November 20, 2013, for analysis for volatile organic compounds (VOC).

Attachment 1 is the logbook for this sample collection activity. Attachment 2 contains field sheets listing information regarding the samples. Attachment 3 presents the analytical data.

415 Oak Street, Kansas City, MO 64106
Tel 816.412.1741 Fax 816.410.1748 www.tetratech.com

Table 1 lists the VOCs detected in the samples, excluding trihalomethanes in the finished PWS water that are a result of water treatment. No VOCs associated with the GM AC Rochester site were detected in the samples from PWS wells, raw water, or finished water.

TABLE 1

COMPARISON OF VOLATILE ORGANIC COMPOUNDS IN WATER SAMPLES
GM AC ROCHESTER SITE, SIOUX CITY, IOWA

Analyte	MCL	HCS Effluent	PWS Well 2	PWS Well 6	PWS Well 10	PWS Well 24	Raw Water	Finished Water[1]
	Concentrations (µg/L)							
1,1-Dichloroethane	NE	160	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	**18**	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2- Dichloroethene	70	**150**	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2- Dichloroethene	100	7.4	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	1.4	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2- Trichloroethane	5	1.2	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	**14**	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	2	**2.4**	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Bold font indicates a concentration exceeding an MCL

[1] The trihalomethanes bromodichloromethane (9.3 µg/L), chloroform (7.5 µg/L), and dibromochloromethane (5.7 µg/L) resulting from water treatment were detected in the sample.

HCS	Hydraulic capture system
MCL	Maximum Contaminant Level
µg/L	Micrograms per liter
NE	Not established
PWS	Public water supply
U	The analyte was not detected at or above the reporting limit indicated in the table.

Eight VOCs were detected in the HCS effluent sample, with the concentrations of 1,1-dichloroethene (DCE), *cis*-1,2-DCE, trichloroethene (TCE), and vinyl chloride exceeding their respective maximum contaminant levels. The VOC chloroform was reported at 2 micrograms per liter (µg/L) in the trip blank, but was not detected in any untreated water sample.

If you have any questions or comments regarding this submittal, please contact the project manager at (816) 412-1771.

Sincerely,

Jenna Mead, RG
START Project Manager

Ted Faile, PG, CHMM
START Program Manager

cc: Roy Crossland, START Project Officer (cover letter only)

ATTACHMENT 1

LOGBOOK

KS1309

Outdoor writing products
for Outdoor writing people

RECYCLABLE

All components of this product are recyclable

Rite in the Rain

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11-18-13

1350 Depart KC office for Sioux City to sample City wells 2, 3, 6, 10, Collector well 24, Water plant pre + post treatment + effluent.

1815 Check in hotel

Jerrie Mead
11-18-13

11-19-13

0830 arrive @ Bongards stop @ office to see Dave Lips. He brought in Pam Winebrinner to discuss expansion of building. Showed plan and indicates the new building will extend 450 ft west of current bldg + almost as far north. It will extend over location of contam. along sewer line. The stoddard + propane areas have been removed but the bertam biostimulation bldg has injection pipes + may need Randy's input on closing that. Also may need wells closed or to know if wells can withstand heavy truck traffic. Dave said Randy may have contam sewer line removed prior to bldg const.

11-19-13

0917 Head to guard shack. Borrgan had Cathy tell guard to let me in. No longer able to just drive back here.

1010 Layne Christensen tech called for directions should be here shortly.

1135 City guys back out today called Peggy She has tech call & will meet @ Well 6 @ 12:45.
RWS Flowmeter not working. well is off/still saying 15 gpm. Well 7S got pumping but getting air in lines. Recommend pulling & doing flow test on pump/well. check valve / hose just pulling out faster than recharge

1150 Collect HCS effluent 6291-1
Flowmeter 50XM1000 Levels DON
Magnetic flowmeters 10 D1475 1/10
Design levels 1 + 5 sizes through 4 inches (Minimag) Microprocessor-based signal converter

11-19-13

1220 Turbines 3S may need cleaning flowmeter issues.
6S may be check valves
7S may be hole just based on pressure differences, assume rest is same setup

1240 @ Well 6 Waiting on City water guys.

1255 Collect collected Well 24
Well has been shut off - don't need fire water w/ new WTP @ south. unable to purge well they just cut it on for us to sample. so not "fresh"

1300 City guys entering Well 10 vault & sample well

1325 Collect Well 6 as M&MS D 6291-4

1345 collect Well 2

1350 Head to WTP for raw/finish

1403 collect generator water.

1410 collect raw water in new bldg @ back now

1420 Back @ HCS. Luke w/ Layne

11-19-13

recommends pulling RW
3, 7S, 8S, Nothing wrong.
W/9S but PLC isn't turning
it on. Replace controller
for 5D. [1425 called field Blank]
1445 7, 8, 9 PLC won't turn them
on. Recommend getting PLC
programmer to fix. Wells will
pump but controller won't
turn on. Filter 24x24x2" changed Sept.
Engleson Control System. 765-668-8560
Departing HCS. Team will drive
around by butane bld
3 wells S of butane as well
as stacking wells @ butane bldg.
3 wells by gate maybe ok.
1930 Return to KC.

Jennie Meeds
11-19-13

ATTACHMENT 2

FIELD SHEETS

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Randy Schademann	GMSC Removal Support	19 / 11 / 13	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
6291-1					1	X					
-2					1						
-3					1						
-4					Set by 12						MS/MSD
-5					1						
-6					1						
-7					1						
-8FB					1						
-10FB					1	X					

ASR Completed

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
1 PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
X ICE CHEST(S); OTHER ____	____ COURIER
	X SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Ryan Do ☐ SEALED ☒ UNSEALED	11/20/13	12:19	RD Wiggans ☐ SEALED ☒ UNSEALED	Rec'd at lab
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

*U.S. GPO: 2002-755-917/40053

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-1-__

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: HCS-effluent

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 11/19/13 11:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-2-__

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: on

External Sample Number: Well 624

Expected Conc: Low (or Circle One: (Low) Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	12:53
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

City of Sioux City

Collector well not running but not able to run long to purge.

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-3-__

Project ID: RS07TZ00 **Project Manager:** Randy Schadèmann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: Well ID

Expected Conc: Low (or Circle One: (Low) Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	1300
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A) City of Sioux City

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-4-__

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: Well 6

Expected Conc: Low (or Circle One: (Low) Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	13:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

MS/MSD

City of Sioux City

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-5-__

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: Well 2

Expected Conc: Low (or Circle One: (Low) Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	13:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)
City of Sioux City

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-6-__

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: Finished water

Expected Conc: Low (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 11/19/13 14:03

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

City Of Sioux City

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 6291-7-__

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: Raw Water

Expected Conc: Low (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	14:10
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A) City of Sioux City

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 8 **QC Code:** EB **Matrix:** Water **Tag ID:** 6291-8EB

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: _____

External Sample Number: _____

Expected Conc: Low (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	14:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A) Field Blank

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6291 **Sample Number:** 10 **QC Code:** FB **Matrix:** Water **Tag ID:** 6291-10-FB

Project ID: RS07TZ00 **Project Manager:** Randy Schademann
Project Desc: General Motors S.C. - Removal Support sampling
City: Sioux City **State:** Iowa
Program: Superfund
Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION **Site ID:** 07TZ **Site OU:** 00

Location Desc: LDL VOA Trip Blank sample

External Sample Number: _____

Expected Conc: Low (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/19/13	09:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A) Tripblank prepared by lab.

Sample Collected By: TT

ATTACHMENT 3

DATA PACKAGE FOR ANALYTICAL SERVICES REQUEST 6291

United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101

Date: 12/18/2013

Subject: Transmittal of Sample Analysis Results for ASR #: 6291

Project ID: RS07TZ00

Project Description: General Motors S.C. - Removal Support sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Randy Schademann
SUPR/ERNB

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Randy Schademann Org: SUPR/ERNB Phone: 913-551-7331

Project ID: RS07TZ00

Project Desc: General Motors S.C. - Removal Support sampling

Location: Sioux City State: Iowa Program: Superfund

Site Name: GENERAL MOTORS S.C. - SITE EVALUATION/DISPOSITION

Site ID: 07TZ Site OU: 00

GPRA PRC: 303DC6

Purpose: Site Preliminary Assessment

Effluent sampling.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank

Units: Specific units in which results are reported.

ug/L = Micrograms per Liter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: RS07TZ00 Project Desc: General Motors S.C. - Removal Support sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1	__	Water	HCS - Effluent		11/19/2013	11:50			11/20/2013
2	__	Water	Well 24 (City of Sioux City)		11/19/2013	12:53			11/20/2013
3	__	Water	Well 10 (City of Sioux City)		11/19/2013	13:00			11/20/2013
4	__	Water	Well 6 (City of Sioux City)		11/19/2013	13:25			11/20/2013
5	__	Water	Well 2 (City of Sioux City)		11/19/2013	13:45			11/20/2013
6	__	Water	Finished water (City of Sioux City)		11/19/2013	14:03			11/20/2013
7	__	Water	Raw water (City of Sioux City)		11/19/2013	14:10			11/20/2013
8	FB	Water	Field Blank sample		11/19/2013	14:35			11/20/2013
10	FB	Water	LDL VOA Trip Blank sample		11/19/2013	09:45			11/20/2013

Analysis	Comments About Results For This Analysis

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.13E

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
8-FB 10-FB

Comments:

Bromoform (24.51%) and 1,2-Dibromo-3-Chloropropane (26.79%) were biased high in the initial calibration and were UJ-coded in samples 6291-(1 - 7) and 6291-(8, 10)-FB. The analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration not meeting specifications. The actual reporting limits may be higher than the reported value.

The % Difference exceeded the ±20% limits for Dichlorodifluoromethane (47.1%) and Chloromethane (20.9%) were biased low and were UJ-coded in samples 6291-(1 - 2), 6291-4, and 6291-(8, 10)-FB. The analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for these analytes may be higher than the reported value.

The % Difference exceeded the ±20% limits for Dichlorodifluoromethane (47.4%) and Chloromethane (21.0%) were biased low and were UJ-coded in samples 6291-3 and 6291-(5 - 7). The analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for these analytes may be higher than the reported value.

Dichlorodifluoromethane (53%, 62 - 131%) was low and was UJ-coded in samples 6291-(1 - 2), 6291-4, and 6291-(8, 10)-FB. The analyte was not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the low recovery of the analyte in the laboratory control sample. The actual reporting limit for this analyte may be higher than the reported value.

Dichlorodifluoromethane (53%, 62 - 131%) was low and was UJ-coded in samples 6291-3 and 6291-(5 - 7). The analyte was not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the low recovery of the analyte in the laboratory control sample. The actual reporting limit for this analyte may be higher than the reported value.

2-Butanone (RPD 13%, PCL 12%) was high and was UJ-coded in sample 6291-4. The analyte was not found in the sample at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the poor precision of the analyte in the Matrix Spike/Matrix Spike Duplicate. The actual reporting limit for this analyte may be higher than the reported value.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1-Dichloroethane	ug/L	160	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	18	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	150	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	7.4	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.4	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.2	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Trichloroethene	ug/L	14	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	2.4	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-FB
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	9.3	1.0 U	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	7.5	1.0 U	2.0
Chloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Dibromochloromethane	ug/L	1.0 U	5.7	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-FB
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	10-FB
1 VOCs in Water by GC/MS for Low Detection Limits		
Acetone	ug/L	5.0 U
Benzene	ug/L	1.0 U
Bromodichloromethane	ug/L	1.0 U
Bromoform	ug/L	1.0 UJ
Bromomethane	ug/L	1.0 U
2-Butanone	ug/L	5.0 U
Carbon Disulfide	ug/L	1.0 U
Carbon Tetrachloride	ug/L	1.0 U
Chlorobenzene	ug/L	1.0 U
Chloroethane	ug/L	1.0 U
Chloroform	ug/L	1.0 U
Chloromethane	ug/L	1.0 UJ
Cyclohexane	ug/L	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ
Dibromochloromethane	ug/L	1.0 U
1,2-Dibromoethane	ug/L	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ
1,1-Dichloroethane	ug/L	1.0 U
1,2-Dichloroethane	ug/L	1.0 U
1,1-Dichloroethene	ug/L	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U
1,2-Dichloropropane	ug/L	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U
Ethyl Benzene	ug/L	1.0 U
2-Hexanone	ug/L	5.0 U
Isopropylbenzene	ug/L	1.0 U
Methyl Acetate	ug/L	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U
Methylcyclohexane	ug/L	1.0 U
Methylene Chloride	ug/L	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U
Naphthalene	ug/L	2.0 U
Styrene	ug/L	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U
Tetrachloroethene	ug/L	1.0 U
Toluene	ug/L	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U

Analysis/ Analyte	Units	10-FB
Trichloroethene	ug/L	1.0 U
Trichlorofluoromethane	ug/L	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U
Vinyl Chloride	ug/L	1.0 U
m and/or p-Xylene	ug/L	2.0 U
o-Xylene	ug/L	1.0 U

United States Environmental Protection Agency
Region VII
300 Minnesota Avenue
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 6291

Project ID: RS07TZ00

Project Description: General Motors S.C. - Removal Support sampling

From: Randy Schademann
SUPR/ERNB

To: Alisha Claycamp
ENSV/CARB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on _____.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _____, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

- ☐ Samples are associated with a legal proceeding.
- ☐ Question/Concern with data - possible reanalysis requested.
- ☐ Other:_____