Appendix B
Data Usability Summary

APPENDIX B

Data Usability Summary
Dow Charlie Burch, Houston, Texas
Groundwater Monitoring 2020

A Jacobs project chemist reviewed ten data packages from SGS Laboratories of Houston, Texas for the analysis of groundwater samples collected from April 21 to November 4, 2020 at the Dow Charlie Burch facility (site) in Houston, Texas.

Data were reviewed for conformance to the requirements of the Texas Commission on Environmental Quality (TCEQ) guidance document, *Review and Reporting of COC Concentration Data Under TRRP* (RG-366/Texas Risk Reduction Program (TRRP)-13) and adherence to project objectives.

Jacobs asserts that at the time the laboratory data were generated for the project, the laboratory was accredited by the National Environmental Laboratory Accreditation Conference under the Texas Laboratory Accreditation Program for the matrix, analyte, and method of analysis requested on the chain-of-custody documentation. A copy of the National Environmental Laboratory Accreditation Program certificate applicable to the period during which the laboratory generated the data in this report is included with this data usability summary (DUS) as an attachment.

Intended Use of Data: The laboratory data included in this report provide information on concentrations of the chemicals of concern (COCs) in the groundwater at the site to support the preparation of the annual groundwater monitoring report for 2020.

The following analysis was performed:

- SW-846 5030/8260C – 1,2-Dichloroethane by Gas Chromatography/Mass Spectrometry (GC/MS)

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data Under TRRP,* (RG-366/TRRP-13). The results of the review and validation are discussed in this DUS. The following laboratory submittals were examined:

- Reportable data
- Laboratory review checklists (LRCs) and associated exception reports (ERs)
- Observations regarding sampling procedures, and preservation procedures before shipping the samples to the laboratory

The results of supporting quality control (QC) analyses were summarized in the LRCs, ERs, and case narratives. The LRCs, associated ERs, and reportable data included in this review are attached to this DUS.

Introduction

A total of 56 groundwater samples were analyzed for VOCs. Additionally, field QC samples analyzed included ten field duplicates, ten trip blanks, and three equipment rinsate blanks. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Table 1. Cross-referenced Field Sample Identifications and Laboratory Identifications
Data Usability Summary
Dow Charlie Burch facility, Houston, Texas

Field Identification	Laboratory Identification	Matrix	Date Collected
MW-CB-33A-20200421	TD54029-1	Water	4/21/2020
MW-CB-37S-20200421	TD54029-2	Water	4/21/2020
MW-CB-39-20200421	TD54029-3	Water	4/21/2020
MW-CB-40-20200421	TD54029-4	Water	4/21/2020
MW-CB-41S-20200421	TD54029-5	Water	4/21/2020
MW-CB-44-20200421	TD54029-6	Water	4/21/2020
MW-CB-45-20200421	TD54029-7	Water	4/21/2020
MW-CB-48-20200421	TD54029-8	Water	4/21/2020
TRW-CB-2-20200421	TD54029-9	Water	4/21/2020
TRW-CB-3-20200421	TD54029-10	Water	4/21/2020
TRW-CB-4-20200421	TD54029-11	Water	4/21/2020
ERB-1-20200421	TD54029-12	Water	4/21/2020
DUP-1-20200421	TD54029-13	Water	4/21/2020
DUP-2-20200421	TD54029-14	Water	4/21/2020
TB-1-20200421	TD54029-15	Water	4/21/2020
RW-CB-3D-20200421	TD54030-1	Water	4/21/2020
DUP-3-20200421	TD54030-2	Water	4/21/2020
ERB-2-20200421	TD54030-3	Water	4/21/2020
TB-2-20200421	TD54030-4	Water	4/21/2020
MW-CB-37S-20200818	TD58759-1	Water	8/18/2020
MW-CB-39-20200818	TD58759-2	Water	8/18/2020
MW-CB-41S-20200818	TD58759-3	Water	8/18/2020
DUP-02-20200818	TD58759-4	Water	8/18/2020
TB-02-20200818	TD58759-5	Water	8/18/2020
MW-CB-33A-20200818	TD58760-1	Water	8/18/2020
TRW-CB-2-20200818	TD58760-2	Water	8/18/2020
TRW-CB-3-20200818	TD58760-3	Water	8/18/2020
TRW-CB-4-20200818	TD58760-4	Water	8/18/2020

Table 1. Cross-referenced Field Sample Identifications and Laboratory Identifications
Data Usability Summary
Dow Charlie Burch facility, Houston, Texas

Field Identification	Laboratory Identification	Matrix	Date Collected
TB-01-20200818	TD58760-5	Water	8/18/2020
DUP-01-20200818	TD58760-6	Water	8/18/2020
ERB-20200818	TD58760-7	Water	8/18/2020
MW-CB-2A-20201028	TD61541-1	Water	10/28/2020
MW-CB-2B-20201028	TD61541-2	Water	10/28/2020
MW-CB-6B-20201028	TD61541-3	Water	10/28/2020
RDP-3-20201028	TD61541-4	Water	10/28/2020
DUP-01-20201028	TD61541-5	Water	10/28/2020
TB-01	TD61541-6	Water	10/28/2020
TRW-CB-1-20201029	TD61585-1	Water	10/29/2020
TRW-CB-2-20201029	TD61585-2	Water	10/29/2020
TRW-CB-3-20201029	TD61585-3	Water	10/29/2020
TRW-CB-4-20201029	TD61585-4	Water	10/29/2020
MW-CB-33A-20201029	TD61585-5	Water	10/29/2020
MW-CB-13AS-20201029	TD61585-6	Water	10/29/2020
DUP-02-20201029	TD61585-7	Water	10/29/2020
TB-01-20201029	TD61585-8	Water	10/29/2020
MW-CB-14AS-20201029	TD61585-9	Water	10/29/2020
MW-CB-37S	TD61586-1	Water	10/29/2020
MW-CB-39	TD61586-2	Water	10/29/2020
MW-CB-40	TD61586-3	Water	10/29/2020
MW-CB-41S	TD61586-4	Water	10/29/2020
MW-CB-44	TD61586-5	Water	10/29/2020
MW-CB-45	TD61586-6	Water	10/29/2020
MW-CB-46S	TD61586-7	Water	10/29/2020
MW-CB-47S	TD61586-8	Water	10/29/2020
MW-CB-48	TD61586-9	Water	10/29/2020
DUP-01-20201029	TD61586-10	Water	10/29/2020

Table 1. Cross-referenced Field Sample Identifications and Laboratory Identifications
Data Usability Summary
Dow Charlie Burch facility, Houston, Texas

Field Identification	Laboratory Identification	Matrix	Date Collected
TB-01-20201029	TD61586-11	Water	10/29/2020
RW-CB-5R-20201030	TD61633-1	Water	10/30/2020
RW-CB-4R-20201030	TD61633-2	Water	10/30/2020
RW-CB-3R-20201030	TD61633-3	Water	10/30/2020
RW-CB-3D-20201030	TD61633-4	Water	10/30/2020
RW-CB-2R-20201030	TD61633-5	Water	10/30/2020
RW-CB-4-20201030	TD61633-6	Water	10/30/2020
MW-CB-1B-20201030	TD61633-7	Water	10/30/2020
MW-CB-1A-20201030	TD61633-8	Water	10/30/2020
MW-CB-1BS-20201030	TD61633-9	Water	10/30/2020
RW-CB-2-20201030	TD61633-10	Water	10/30/2020
MW-CB-7B-20201030	TD61633-11	Water	10/30/2020
OW-2-20201030	TD61633-12	Water	10/30/2020
MW-CB-4-20201030	TD61633-13	Water	10/30/2020
TB-01-20201030	TD61633-14	Water	10/30/2020
DUP-01-20201030	TD61633-15	Water	10/30/2020
DUP-02-20201030	TD61633-16	Water	10/30/2020
MW-CB-8AD-20201102	TD61685-1	Water	11/2/2020
MW-CB-16AS-20201102	TD61685-2	Water	11/2/2020
MW-CB-12AS-20201102	TD61685-3	Water	11/2/2020
TB-01-20201102	TD61685-4	Water	11/2/2020
MW-CB-15AS-20201104	TD61811-1	Water	11/4/2020
TB-01-20201104	TD61811-2	Water	11/4/2020

Project Measurement Quality Objectives

Organic Analytes:

- Recovery 68 to 121 percent or Laboratory control limits

- LCS/LCSD relative percent difference (RPD) less than or equal to 12 percent or laboratory control limits
- MS/MSD RPD less than or equal to 12 percent
- Sample and field duplicate RPD less than or equal to 30 percent or plus or minus 2 times the MQL if concentrations are less than 5 times MQL
- Completeness 95 percent

Data Review and Validation Results

Analytical Results

Nondetected results are reported as less than the sample detection limit (SDL) as defined by the Texas Risk Reduction Program rule. Data qualified during the data validation process are listed in Table 2.

Table 2. Qualified Analytical Data
Data Usability Summary
Dow Charlie Burch facility, Houston, Texas

Field Identification	Analytical Method	Analyte	Result	Units	Qualification	Reason for Qualification
DUP-02-20201030	SW8260B	1,2-Dichloroethane	0.0172	mg/l	J	Field duplicate RPD > 30%
MW-CB-1BS-20201030	SW8260B	1,2-Dichloroethane	0.0127	mg/l	J	Field duplicate RPD > 30%

mg/L = milligram per liter
J (in Qualification column) = Estimated data; the reported sample concentration is approximated due to exceedance of one or more QC requirements.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody documentation. Samples were received in the appropriate containers and in good condition with proper completion of the chain-of-custody documentation.

Sample receipt temperatures were within the acceptance criteria of 4 $\pm$ 2 degrees Celsius (°C) except for coolers which arrived at temperature below 2 °C but did not exhibit any impact to samples and thus did not require data qualification. Samples were preserved as specified in SW-846 Tables 2-40(A) and 2-40(B). Samples were prepared and analyzed within holding times specified in SW-846 Tables 2-40(A) and 2-40(B).

Calibrations and Tunes

According to the LRCs and case narratives, initial calibration and continuing calibration data met SW-846 method requirements.

The LRCs also document satisfactory instrument performance calibrations (GC/MS tunes) for the GC/MS analyses (VOCs).

Blanks

No target analytes were detected in any laboratory blank, trip blank or equipment rinsate blank at any concentration that required data qualification.

Surrogate Recoveries and Internal Standard Recoveries

Surrogate recoveries for VOCs analyses were within acceptance criteria. According to the LRCs and case narratives, internal standard areas were within method SW-846 acceptance criteria.

Laboratory Control Samples

LCSs and LCSDs were spiked with the target analyte of interest for the analytical method. LCS/LCSD recoveries and RPDs were within acceptance criteria.

Matrix Spike and Matrix Spike Duplicates

MS/MSDs were spiked with the target analyte of interest for the analytical method. MS/MSD recoveries and RPDs were within acceptance criteria.

Field Precision

Table 3 summarizes field duplicate precision calculations. Field duplicate precision was not calculated for results where both the normal and field duplicate results were reported as not detected (U). Based on the RPD between the concentrations detected and the proximity of the concentrations to the MQL, overall field duplicate precision was within the project acceptance criteria. The one exception was the RPD for 1,2-Dichloroethane in sample MW-CB-1BS-20201030 and its field duplicate DUP-02-20201030 which exceeded the 30 percent acceptance criteria at 30.1 percent, so the two results were qualified as estimated (J).

Field Procedures

Samples were collected following standard operating procedures detailed in the project sampling instructions. No anomalies were observed during sampling.

Table 3. Field Precision
Data Usability Summary
Dow Charlie Burch facility, Houston, Texas

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
MW-CB-45-20200421 / DUP-1-20200421	1,2-Dichloroethane	0.0029	0.0035	19%	A
RW-CB-3D-20200421 / DUP-3-20200421	1,2-Dichloroethane	0.0058	0.006	3.4%	A
MW-CB-39-20200818 / DUP-02-20200818	1,2-Dichloroethane	0.00069 J	0.00064 J	7.5%	A
TRW-CB-2-20200818 / DUP-01-20200818	1,2-Dichloroethane	0.00038 J	0.00043 J	12%	A
MW-CB-2A-20201028 / DUP-01-20201028	1,2-Dichloroethane	0.0075	0.0077	2.6%	A

Table 3. Field Precision
Data Usability Summary
Dow Charlie Burch facility, Houston, Texas

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
TRW-CB-1-20201029 / DUP-02-20201029	1,2-Dichloroethane	0.0139	0.0138	0.7%	A
MW-CB-41S / DUP-01-20201029	1,2-Dichloroethane	0.00088 J	0.00077 J	13%	A
MW-CB-1BS-20201030 / DUP-02-20201030	1,2-Dichloroethane	0.0127	0.0172	30.1%	J
RW-CB-3R-20201030 / DUP-01-20201030	1,2-Dichloroethane	0.0306	0.0304	0.7%	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A = Acceptable Data
J (in Sample Result or Duplicate Result column) = Result > SDL < MQL
J (in Qualified column) = Estimated data due to field duplicate precision outside of acceptance criteria
U = Not detected at reported detection limit
SR = Sample Result
DR = Duplicate Result
MQL = method quantitation limit
RPD = relative percent difference
SDL = sample detection limit

Summary

Overall, the quality of the analytical data was found to be within the QC limits established by the project data quality objectives, the analytical methods, and the review criteria presented in *Review and Reporting of COC Concentration Data Under TRRP* (RG-366/TRRP-13).

The following data quality indicators were found to be within project acceptance criteria and did not require data qualification:

- Sample receipt conditions
- Sample preservation
- Holding times
- Initial calibrations
- Continuing calibration verification
- Instrument performance calibrations
- Blanks
- Internal standard recoveries
- Surrogate recoveries
- LCS/LCSD recoveries and RPDs
- MS/MSD recoveries and RPDs

The 1,2-Dichloroethane results in sample MW-CB-1BS-20201030 and its field duplicate DUP-02-20201030 were qualified as estimated (J) due to field duplicate imprecision. No other analytical results were qualified in validation and no results were rejected, giving the data set a 100 percent completeness. Analytical results may be used to support project decisions.

Attachment
National Environmental Laboratory Accreditation Program Certificates

Texas Commission on Environmental Quality

NELAP-Recognized Laboratory Accreditation is hereby awarded to

SGS North America Inc. – Houston

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Houston, TX 77036-1622

in accordance with Texas Water Code Chapter 5, Subchapter R, Title 30 Texas Administrative Code Chapter 25, and the National Environmental Laboratory Accreditation Program.

The laboratory's scope of accreditation includes the fields of accreditation that accompany this certificate. Continued accreditation depends upon successful ongoing participation in the program. The Texas Commission on Environmental Quality urges customers to verify the laboratory's current location(s) and accreditation status for particular methods and analyses (www.tceq.texas.gov/goto/lab). Accreditation does not imply that a product, process, system or person is approved by the Texas Commission on Environmental Quality.

Certificate Number: T104704220-20-35
Effective Date: 4/1/2020
Expiration Date: 3/31/2021

Executive Director Texas Commission on Environmental Quality