

DATA PACKAGE GENERAL CHEMISTRY

PROJECT NAME : FORMER SCHLUMBERGER SITE PRINCETON NJ

JACOBS ENGINEERING GROUP, INC.

412 Mt. Kemble Ave

Downtown Building

Morristown, NJ - 07960

Phone No: 9732670555

ORDER ID : P3645

ATTENTION : Mary I. Murphy



Laboratory Certification ID # 20012



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Cover Page

Order ID : P3645

Project ID : Former Schlumberger Site Princeton NJ

Client : JACOBS Engineering Group, Inc.

Lab Sample Number

P3645-01
P3645-02
P3645-03

Client Sample Number

914-J-WS-081524
916-J-WS-081524
TB-02-081524

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 8/22/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

JACOBS Engineering Group, Inc.

Project Name: Former Schlumberger Site Princeton NJ

Project # N/A

Chemtech Project # P3645

Test Name: Hexavalent Chromium

A. Number of Samples and Date of Receipt:

3 Water samples were received on 08/15/2024.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Hexavalent Chromium, Mercury, Metals Group4, SVOCMS Group3, SVOCMS Group6 and VOCMS Group6. This data package contains results for Hexavalent Chromium.

C. Analytical Techniques:

The analysis of Hexavalent Chromium was based on method 7196A.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike analysis met criteria for all samples.

The Matrix Spike Duplicate analysis met criteria for all samples.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
OR	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

GENERAL CHEMISTRY CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: P3645

MATRIX: Water

METHOD: 7196A

	NA	NO	YES
1. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
2. Matrix Spike Duplicate Recoveries Met Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Blank Spike met requirements for all samples.			
3. Sample Duplicate Analysis Met QC Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
4. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			

ADDITIONAL COMMENTS:

QA REVIEW

Date

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P3645

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

1st Level QA Review Signature: SOHIL JODHANI

Date: 08/22/2024

2nd Level QA Review Signature: _____

Date: _____

LAB CHRONICLE

OrderID:	P3645	OrderDate:	8/15/2024 9:40:00 PM
Client:	JACOBS Engineering Group, Inc.	Project:	Former Schlumberger Site Princeton NJ
Contact:	Mary I. Murphy	Location:	G21,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P3645-01	914-J-WS-081524	WATER			08/15/24 13:35			08/15/24
			Hexavalent Chromium	7196A			08/16/24 10:14	
P3645-02	916-J-WS-081524	WATER			08/15/24 14:25			08/15/24
			Hexavalent Chromium	7196A			08/16/24 10:15	



SAMPLE DATA

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Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	08/15/24 13:35
Project:	Former Schlumberger Site Princeton NJ	Date Received:	08/15/24
Client Sample ID:	914-J-WS-081524	SDG No.:	P3645
Lab Sample ID:	P3645-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Dissolved Hexavalent Chromium	0.0030	U	1	0.0030	0.010	mg/L		08/16/24 10:14	7196A

Comments: _____

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements
 H = Sample Analysis Out Of Hold Time

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N =Spiked sample recovery not within control limits

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	08/15/24 14:25
Project:	Former Schlumberger Site Princeton NJ	Date Received:	08/15/24
Client Sample ID:	916-J-WS-081524	SDG No.:	P3645
Lab Sample ID:	P3645-02	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Dissolved Hexavalent Chromium	0.0030	U	1	0.0030	0.010	mg/L		08/16/24 10:15	7196A

Comments: _____

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements
 H = Sample Analysis Out Of Hold Time

J = Estimated Value
 B = Analyte Found in Associated Method Blank
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 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N =Spiked sample recovery not within control limits



QC RESULT SUMMARY

- 1
- 2
- 3
- 4
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- 12
- 13

Initial and Continuing Calibration Verification

Client: JACOBS Engineering Group, Inc.
Project: Former Schlumberger Site Princeton NJ

SDG No.: P3645
RunNo.: LB132046

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV Hexavalent Chromium	mg/L	0.498	0.5	100	90-110	08/16/2024
Sample ID: CCV1 Hexavalent Chromium	mg/L	0.504	0.5	101	90-110	08/16/2024
Sample ID: CCV2 Hexavalent Chromium	mg/L	0.501	0.5	100	90-110	08/16/2024

Initial and Continuing Calibration Blank Summary

Client: JACOBS Engineering Group, Inc.
Project: Former Schlumberger Site Princeton NJ

SDG No.: P3645
RunNo.: LB132046

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	08/16/2024
Sample ID: CCB1 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	08/16/2024
Sample ID: CCB2 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	08/16/2024

Preparation Blank Summary

Client: JACOBS Engineering Group, Inc. **SDG No.:** P3645
Project: Former Schlumberger Site Princeton NJ

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: LB132046BL							
Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.003	0.01	08/16/2024

Matrix Spike Summary

Client:	JACOBS Engineering Group, Inc.	SDG No.:	P3645
Project:	Former Schlumberger Site Princeton NJ	Sample ID:	P3645-02
Client ID:	916-J-WS-081524MS	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/L	90-111	1.00		0.0030	U	1.0	2	100		08/16/2024

Matrix Spike Summary

Client:	JACOBS Engineering Group, Inc.	SDG No.:	P3645
Project:	Former Schlumberger Site Princeton NJ	Sample ID:	P3645-02
Client ID:	916-J-WS-081524MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/L	90-111	1.01		0.0030	U	1.0	2	101		08/16/2024

Duplicate Sample Summary

Client:	JACOBS Engineering Group, Inc.	SDG No.:	P3645
Project:	Former Schlumberger Site Princeton NJ	Sample ID:	P3645-02
Client ID:	916-J-WS-081524DUP	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifie	Duplicate Result	Conc. Qualifie	Dilution Factor	RPD/ AD	Qual	Analysis Date
Hexavalent Chromium	mg/L	+/-20	0.0030	U	0.0030	U	1	0		08/16/2024

Duplicate Sample Summary

Client:	JACOBS Engineering Group, Inc.	SDG No.:	P3645
Project:	Former Schlumberger Site Princeton NJ	Sample ID:	P3645-02
Client ID:	916-J-WS-081524MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifie	Duplicate Result	Conc. Qualifie	Dilution Factor	RPD/ AD	Qual	Analysis Date
Hexavalent Chromium	mg/L	+/-20	1.00		1.01		2	1		08/16/2024

Laboratory Control Sample Summary

Client:	JACOBS Engineering Group, Inc.	SDG No.:	P3645
Project:	Former Schlumberger Site Princeton NJ	Run No.:	LB132046

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB132046BS							
Hexavalent Chromium	mg/L	0.5	0.51		103	1	90-111	08/16/2024



RAW DATA

- 1
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Analysis Method: 7196A

ANALYST: rubina

Parameter: Hexavalent Chromium

SUPERVISOR REVIEW BY: Iwona

Run Number: LB132046

pH Meter ID: WC pH Meter-1

Reagent/Standard	Lot/Log #
Calibration Std. hexchrome 0.1 ppm	WP109268
Calibration Std. hexchrome 0.05 ppm	WP109267
calibration std. hexchrome 0.01 ppm	WP109265
calibration std. hexchrome 0 ppm	WP109264
hexavalent chromium color reagent	WP109272
5N sulfuric acid	WP107791
Calibration Std Hexachrome 0.025 ppm	WP109266
Hexavalent Chromium ICV-LCS Std	WP109271
Calibration and CCV std HexChrome 0.5PPM	WP109269
Calibration std HexChrome 1.0PPM	WP109270

Intercept: 0.0004

Slope: 0.7816

Regression: 0.999988

Seq	Lab ID	True Value (mg/l)	DF	Initial Vol (ml)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at 540nm		Absorbance Difference	Result (mg/L)	%D	Anal Date	Anal Time
								Backgrnd	Color					
1	CAL1	0	1	100	100		1.75	0.000	0.000	0.000	-0.00		08/16/2024	10:00
2	CAL2	0.01	1	100	100		1.86	0.000	0.007	0.007	0.008	-20	08/16/2024	10:01
3	CAL3	0.025	1	100	100		1.89	0.000	0.019	0.019	0.023	-8	08/16/2024	10:02
4	CAL4	0.05	1	100	100		1.86	0.000	0.039	0.039	0.049	-2	08/16/2024	10:03
5	CAL5	0.1	1	100	100		1.90	0.000	0.081	0.081	0.103	3	08/16/2024	10:04
6	CAL6	0.5	1	100	100		1.88	0.000	0.393	0.393	0.502	0.4	08/16/2024	10:05
7	CAL7	1	1	100	100		1.85	0.000	0.781	0.781	0.998	-0.2	08/16/2024	10:06

Analysis Method: 7196A

ANALYST:rubina

Parameter: Hexavalent Chromium

SUPERVISOR REVIEW BY:Iwona

Run Number: LB132046

pH Meter ID:WC pH Meter-1

Seq	Lab ID	True Value	DF	Initial Vol (ml/gm)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at540nm		Absorbance Difference	Intermediate Result (mg/L)	Anal Date	Anal Time
								Backgrnd	Color				
1	ICV	0.5	1	100	100		1.92	0.000	0.390	0.390	0.498	08/16/2024	10:07
2	ICB		1	100	100		1.79	0.000	0.000	0.000	-0.001	08/16/2024	10:08
3	CCV1	0.5	1	100	100		1.96	0.000	0.394	0.394	0.504	08/16/2024	10:09
4	CCB1		1	100	100		1.74	0.000	0.000	0.000	-0.001	08/16/2024	10:10
5	RL Check	0.01	1	100	100		1.90	0.000	0.008	0.008	0.010	08/16/2024	10:11
6	LB132046BL		1	100	100		1.77	0.000	0.001	0.001	0.001	08/16/2024	10:12
7	LB132046BS	0.5	1	100	100		1.91	0.000	0.401	0.401	0.513	08/16/2024	10:13
8	P3645-01		1	100	100		2.02	0.000	0.000	0.000	-0.001	08/16/2024	10:14
9	P3645-02		1	100	100		2.04	0.000	0.000	0.000	-0.001	08/16/2024	10:15
10	P3645-02DU		1	100	100		2.06	0.000	0.000	0.000	-0.001	08/16/2024	10:16
11	P3645-02MS	1	2	100	100		2.04	0.000	0.393	0.393	0.502	08/16/2024	10:17
12	P3645-02MS	1	2	100	100		2.04	0.000	0.394	0.394	0.504	08/16/2024	10:18
13	CCV2	0.5	1	100	100		1.94	0.000	0.392	0.392	0.501	08/16/2024	10:19
14	CCB2		1	100	100		1.75	0.000	0.001	0.001	0.001	08/16/2024	10:20

WORKLIST(Hardcopy Internal Chain)

6132046

WorkList Name : hjex-8-16-

WorkList ID : 182713

Department : Wet-Chemistry

Date : 08-16-2024 07:55:52

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P3645-01	914-J-WS-081524	Water	Hexavalent Chromium	Ammonium sulfate buffer	JACO05	G21	08/15/2024	7196A
P3645-02	916-J-WS-081524	Water	Hexavalent Chromium	Ammonium sulfate buffer	JACO05	G21	08/15/2024	7196A

Date/Time 08/16/2024 07:50
Raw Sample Received by: RM cwc
Raw Sample Relinquished by: 08/16/24

Date/Time 08/16/2024 08:30
Raw Sample Received by: 08/16/24
Raw Sample Relinquished by: RM cwc

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB132046

Review By	rubina	Review On	8/16/2024 1:03:33 PM
Supervise By	Iwona	Supervise On	8/20/2024 10:53:52 AM
SubDirectory	LB132046	Test	Hexavalent Chromium
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP109268,WP109267,WP109265,WP109264,WP109272,WP107791,WP109266,WP109271,WP109269,WP109270		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	08/16/24 10:00		rubina	OK
2	CAL2	CAL2	CAL	08/16/24 10:01		rubina	OK
3	CAL3	CAL3	CAL	08/16/24 10:02		rubina	OK
4	CAL4	CAL4	CAL	08/16/24 10:03		rubina	OK
5	CAL5	CAL5	CAL	08/16/24 10:04		rubina	OK
6	CAL6	CAL6	CAL	08/16/24 10:05		rubina	OK
7	CAL7	CAL7	CAL	08/16/24 10:06		rubina	OK
8	ICV	ICV	ICV	08/16/24 10:07		rubina	OK
9	ICB	ICB	ICB	08/16/24 10:08		rubina	OK
10	CCV1	CCV1	CCV	08/16/24 10:09		rubina	OK
11	CCB1	CCB1	CCB	08/16/24 10:10		rubina	OK
12	RL Check	RL Check	SAM	08/16/24 10:11		rubina	OK
13	LB132046BL	LB132046BL	MB	08/16/24 10:12		rubina	OK
14	LB132046BS	LB132046BS	LCS	08/16/24 10:13		rubina	OK
15	P3645-01	914-J-WS-081524	SAM	08/16/24 10:14		rubina	OK
16	P3645-02	916-J-WS-081524	SAM	08/16/24 10:15		rubina	OK
17	P3645-02DUP	916-J-WS-081524DU	DUP	08/16/24 10:16		rubina	OK
18	P3645-02MS	916-J-WS-081524MS	MS	08/16/24 10:17		rubina	OK

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB132046

Review By	rubina	Review On	8/16/2024 1:03:33 PM
Supervise By	Iwona	Supervise On	8/20/2024 10:53:52 AM
SubDirectory	LB132046	Test	Hexavalent Chromium

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP109268,WP109267,WP109265,WP109264,WP109272,WP107791,WP109266,WP109271,WP109269,WP109270

19	P3645-02MSD	916-J-WS-081524MS	MSD	08/16/24 10:18		rubina	OK
20	CCV2	CCV2	CCV	08/16/24 10:19		rubina	OK
21	CCB2	CCB2	CCB	08/16/24 10:20		rubina	OK

Prep Standard - Chemical Standard Summary

Order ID : P3645

Test : Hexavalent Chromium

Prepbatch ID :

Sequence ID/Qc Batch ID: LB132046,

Standard ID :

WP107791,WP108658,WP108659,WP109263,WP109264,WP109265,WP109266,WP109267,WP109268,WP109269,WP109270,WP109271,WP109272,

Chemical ID :

E3788,M5211,W2606,W2651,W2652,W2979,W3112,

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
126	5N sulfuric acid	WP107791	05/07/2024	10/24/2024	Niha Farheen Shaik	None	None	Iwona Zarych 05/07/2024

FROM 140.00000ml of M5211 + 860.00000ml of W2606 = Final Quantity: 1.000 L

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1993	HEXAVALENTCHROMIUM STOCK STD 1, 50PPM	WP108658	07/09/2024	01/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 07/09/2024

FROM 0.14140gram of W2651 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1994	HEXAVALENTCHROMIUM STOCK STD 2, 50PPM	WP108659	07/09/2024	01/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC	None	Iwona Zarych
FROM 0.14140gram of W2652 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml SC-5)								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1103	HEX CHROME INTERMEDIATE STD SOURCE 1 (5PPM)	WP109263	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PIPE_3	Iwona Zarych
FROM 9.00000ml of W3112 + 1.00000ml of WP108658 = Final Quantity: 10.000 ml (WC)								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
110	calibration std. hexchrome 0 ppm	WP109264	08/16/2024	08/17/2024	Rubina Mughal	None	None	Iwona Zarych 08/16/2024
FROM 100.00000ml of W3112 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
109	calibration std. hexchrome 0.01 ppm	WP109265	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych 08/16/2024
FROM 99.80000ml of W3112 + 0.20000ml of WP109263 = Final Quantity: 100.000 ml (WC)								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3800	Calibration Std Hexachrome 0.025 ppm	WP109266	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PL PETTE_3	Iwona Zarych 08/16/2024
FROM 99.50000ml of W3112 + 0.50000ml of WP109263 = Final Quantity: 100.000 ml <div style="text-align: right;">(WC)</div>								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
108	Calibration Std. hexchrome 0.05 ppm	WP109267	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PL PETTE_3	Iwona Zarych 08/16/2024
FROM 99.00000ml of W3112 + 1.00000ml of WP109263 = Final Quantity: 100.000 ml <div style="text-align: right;">(WC)</div>								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
107	Calibration Std. hexchrome 0.1 ppm	WP109268	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych 08/16/2024
FROM 99.80000ml of W3112 + 0.20000ml of WP108658 = Final Quantity: 100.000 ml (WC)								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3808	Calibration and CCV std HexChrome 0.5PPM	WP109269	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych 08/16/2024
FROM 99.00000ml of W3112 + 1.00000ml of WP108658 = Final Quantity: 100.000 ml (WC)								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3809	Calibration std HexChrome 1.0PPM	WP109270	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PI PETTE_3	Iwona Zarych 08/16/2024
FROM 98.00000ml of W3112 + 2.00000ml of WP108658 = Final Quantity: 100.000 ml <div style="text-align: right;">(WC)</div>								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3804	Hexavalent Chromium ICV-LCS Std	WP109271	08/16/2024	08/17/2024	Rubina Mughal	None	WETCHEM_PI PETTE_3	Iwona Zarych 08/16/2024
FROM 99.00000ml of W3112 + 1.00000ml of WP108659 = Final Quantity: 100.000 ml <div style="text-align: right;">(WC)</div>								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
114	hexavalent chromium color reagent	WP109272	08/16/2024	08/23/2024	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 08/16/2024
FROM	0.25000gram of W2979 + 50.00000ml of E3788 = Final Quantity: 50.000 ml							

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H1462005	02/13/2025	08/13/2024 / Rajesh	08/13/2024 / Rajesh	E3788

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	22D0862014	01/20/2025	08/22/2022 / mohan	04/26/2022 / mohan	M5211

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	10/24/2024	10/24/2019 / apatel	10/24/2019 / apatel	W2606

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AA13450-36 / Potassium Dichromate, 500g(NEW)	T15F019	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2651

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P188-500 / Potassium Dichromate, 500g(new-2nd lot)	194664	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2652

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	31390 / 1,5-Diphenylcarbazine	MKCR6636	12/09/2027	12/09/2022 / lwona	12/09/2022 / lwona	W2979

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112

Product No.: 13450
Product: Potassium dichromate, ACS, 99.0% min
Lot No.: T15F019

Test	Limits	Results
Appearance	Orange-red crystals	Orange-red crystals
Identification	To Pass	Passes
Purity	99.0 % min	99.67 %
Insoluble matter	0.005 % max	0.004 %
Loss on drying	0.05 % max	0.03 %
Chloride	0.001 % max	< 0.001 %
Sulfate	0.005 % max	< 0.005 %
Iron	0.001 % max	< 0.001 %
Calcium	0.003 % max	0.0012 %
Sodium	0.02 % max	0.0047 %

Order our products online [alfa.com](https://www.thermofisher.com)

This document has been electronically generated and does not require a signature.

This is to certify that units of the lot number above were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the purchaser, formulator or those performing further manufacturing to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The above information is the actual analytical results obtained.



Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P188	Quality Test / Release Date	08/12/2019
Lot Number	194664		
Description	POTASSIUM DICHROMATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Aug/2024
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		
Chemical Comment			

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Fine, orange-red crystals
ASSAY	%	>= 99	99.2
CALCIUM	%	<= 0.003	<0.003
CHLORIDE	%	<= 0.001	<0.001
LOSS ON DRYING @ 105 C	%	<= 0.05	<0.05
SULFATE (SO4)	%	<= 0.005	<0.005
INSOLUBLE MATTER	%	<= 0.005	0.003
IRON (Fe)	%	<= 0.001	<0.001
SODIUM (Na)	%	<= 0.02	<0.02
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST

Jerusa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.

Acetone

BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

Avantor™



Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd by RP on 8/13/24

E 3788

Ken Koehnlein
Sr. Manager, Quality Assurance

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™



Material No.: 9673-33
Batch No.: 22D0862014
Manufactured Date: 2022-02-23
Retest Date: 2027-02-22
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	95.0 – 98.0 %	96.5 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO ₂)	≤ 2 ppm	< 2 ppm
Ammonium (NH ₄)	≤ 1 ppm	< 1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO ₃)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO ₄)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	1.7 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	< 0.2 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	2.0 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.6 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	12.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	4.4 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

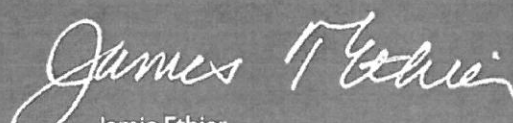


Material No.: 9673-33
Batch No.: 22D0862014

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	6.2 ppb
Trace Impurities – Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.6 ppb

For Laboratory, Research, or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

W 2979

Rec: 12/09/22

exp. 12/09/27

Product Name:

1,5-Diphenylcarbazide - ACS reagent

Product Number:

259225

Batch Number:

MKCR6636

Brand:

SIAL

CAS Number:

140-22-7

MDL Number:

MFCD00003013

Formula:

C₁₃H₁₄N₄O

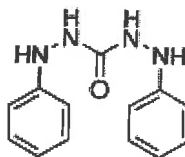
Formula Weight:

242.28 g/mol


Quality Release Date:

02 JUN 2022

Certificate of Analysis



Test	Specification	Result
Appearance (Color)	Conforms to Requirements	Pink
Off-White to Pink, Light Purple or Tan		
Appearance (Form)	Powder or Chunks	Powder
Melting Point	173.0 - 176.0 °C	173.0 °C
Infrared Spectrum	Conforms to Structure	Conforms
Residue on ignition (Ash)	≤ 0.05 %	0.01 %
15 minutes, 800 Degrees Celsius		
Solubility	Pass	Pass
Sensitivity Test	Pass	Pass
Meets ACS Requirements	Current ACS Specification	Conforms



Larry Coers, Director
Quality Control
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.





SHIPPING DOCUMENTS

1
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3
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CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: Jacobs
 ADDRESS: 412 ME Kumble Ave Suite #100
 CITY: Morrisstown STATE: NJ ZIP: 07960
 ATTENTION: John Ynfante
 PHONE: (281) 414-1719 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: SEL PTE
 PROJECT NO.: D3774922 LOCATION: Princeton Junction
 PROJECT MANAGER: Mary Murphy
 e-mail: Mary.Murphy@Jacobs.com
 PHONE: (201) 936-0586 FAX:

CLIENT BILLING INFORMATION

BILL TO: Mary Murphy PO#:
 ADDRESS:
 CITY STATE ZIP:
 ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) Standard TAT DAYS*
 HARDCOPY (DATA PACKAGE): DAYS*
 EDD: DAYS*

*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☒ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
 + Raw Data ☐ Other _____
☐ EDD FORMAT

1 VOCs 8/16/07
 2 SVOCs + PAHs 8/16/07
 3 Metals 8/16/07
 4 Cr/Cd 7/16/07
 5 SVOCs - 8/16/07
 6 PAHs - 8/16/07
 7
 8
 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS	
			COMP	GRAB	DATE	TIME		A/E	B/E	E	E						← Specify Preservatives	
1.	914-J-WS-081524	WS		X	8-15-24	1335	8	2	4	1	1	4					A-HCl	D-NaOH
2.	916-J-WS-081524	WS		X	8-15-24	1425	8	2	4	1	1	4					B-HNO3	E-ICE
3.	TB-02-081524	DI		X	8-15-24	1530	1	1									C-H2SO4	F-OTHER
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>[Signature]</u>	DATE/TIME: <u>8-15-24 1710</u>	RECEIVED BY: 1. <u>[Signature]</u>	DATE/TIME: <u>8-15-24 1710</u>	Conditions of bottles or coolers at receipt: <input type="checkbox"/> COMPLIANT <input type="checkbox"/> NON COMPLIANT <input type="checkbox"/> COOLER TEMP <u>3.0</u> °C
RELINQUISHED BY SAMPLER: 2. <u>[Signature]</u>	DATE/TIME:	RECEIVED BY: 2. <u>[Signature]</u>	DATE/TIME:	Comments: <u>See attached table for required analytes list</u>
RELINQUISHED BY SAMPLER: 3. <u>[Signature]</u>	DATE/TIME: <u>8-15-24 1820</u>	RECEIVED BY: 3. <u>[Signature]</u>	DATE/TIME:	<u>2L of extra volume for SVOCs + PAHs analysis</u>

Page 1 of 1

CLIENT: ☐ Hand Delivered ☐ Other _____
 CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete
☐ YES ☐ NO

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (L-A-B)	L2219
Maine	2024021
Maryland	296
New Hampshire	255423
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488


LOGIN REPORT/SAMPLE TRANSFER

Order ID : P3645	JACO05	Order Date : 8/15/2024 9:40:00 PM	Project Mgr :
Client Name : JACOBS Engineering Grou		Project Name : Former Schlumberger Site I	Report Type : Level 4
Client Contact : Mary I. Murphy		Receive DateTime : 8/15/2024 6:20:00 PM	EDD Type : CH2MHILL
Invoice Name : JACOBS Engineering Grou		Purchase Order :	Hard Copy Date :
Invoice Contact : Mary I. Murphy			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P3645-01	914-J-WS-081524	Water	08/15/2024	13:35					
					VOCMS Group6		8260-Low	10 Bus. Days	
P3645-02	916-J-WS-081524	Water	08/15/2024	14:25					
					VOCMS Group6		8260-Low	10 Bus. Days	
P3645-03	TB-02-081524	Water	08/15/2024	15:30					
					VOCMS Group6		8260-Low	10 Bus. Days	


Relinquished By :

Date / Time :


8/16/24 0950

Received By :

Date / Time :


8-16-24 09:50

Storage Area : VOA Refridgerator Room