April 12, 2018

Quality Assurance Assessment for External Datasets for Development of the Clean Water Act 303(d)/305 2018-2020 Integrated List

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The New Mexico Surface Water Quality Bureau (SWQB) uses external datasets as well as data generated by the SWQB in the development of the 2018-2020 CWA §303(d)/§305(b) Integrated List. Chemical, physical, biological, and bacteriological (i.e., *E. coli*) data for any stream, river, lake, or reservoir in the state may be considered for assessment purposes and subject to New Mexico's water quality standards published in 20.6.4 NMAC. Prior to incorporation into the development of the Integrated List and Report, data obtained from external sources must first be reviewed with regards to data quality, usefulness, and consistency with SWQB procedures.

External data generally consists of data submitted from outside entities as well as data retrieved from publically-available national and regional water quality databases. The SWQB Water Quality Data Submittal Guidance and Checklist[1] in combination with the SWQB Quality Assurance Project Plan (QAPP), SWQB Standard Operating Procedures (SOPs)[2] are used to assess the quality of external datasets for inclusion into the development of the Integrated List. Specifically, datasets and associated documentation are reviewed to determine: (1) if there is documentation of QA/QC procedures that, at a minimum, meet the QA/QC requirements described in the SWQB's most recent QAPP; and (2) if there is reasonable evidence or assurance that these procedures were followed. If these minimum requirements are met, these data may be used for assessment purposes and incorporated into the development of the Integrated List and Report.

For the 2018-2020 listing cycle, data packets were received from: (1) Amigos Bravos, (2) NMED Ground Water Quality Bureau, and (3) Hermit's Peak Watershed Alliance. Data sets were acquired from (1) Los Alamos National Security personnel at Los Alamos National Laboratory, and (2) EPA ORD personnel with respect to the Gold King Mine Spill. Attached are quality assurance reviews of the above-mentioned data sets. Unless otherwise specifically noted, all methods, contracted labs, equipment, collection procedures, and preservation and analysis procedures were acceptable and met the minimum SWQB submitted data requirements.

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[1] https://www.env.nm.gov/swqb/DataSubmittals/
[2] https://www.env.nm.gov/surface-water-quality/protocols-and-planning/

Quality Assurance Assessment of Outside Data Submittals

Date Data Received by SWQB: May 10, 2017

Data Submitted by: Amigos Bravos
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Data Collected by: Eric Patterson
Sierra Club-Water Sentinels-Rios de Taos

Contract Laboratory: Sangre de Christo Lab
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Evelyn Vigil

Original Purpose and Source of Funding for Data Collection: Sampling was initiated by the Water Sentinels-Rios de Taos chapter ("Sentinels") due to a concern that inadequate data was available to assess the health of the Rio Hondo, Rio Fernando and the Rio Pueblo de Taos watersheds. Ostensibly, the work was funded by the Sierra Club Water Sentinels program with assistance from Amigos Bravos. No specific breakout of funding sources or grant names were provided in the submission.

Watershed (HUC 8: 13020101) **and Waterbody Name(s)**: Rio Fernando, Rio Pueblo de Taos, Rio Hondo, Rio Lucero and Red River. Further detailed in Appendix A

Period of Data Collection: May 19, 2014 through August 31, 2016

Data, Metadata and Quality Assurance Provided: The data provided in this data submittal package is summarized in Appendix B. Metadata and supporting quality assurance documentation included a QAPP, Field Reports (2014-2106), and lab data reports.

QA/QC Evaluation	Comments
Supporting QA documentation provided or available (calibration forms, custody sheets, etc.)	QAPP, and analytical laboratory reports were submitted with data set. Calibration forms, custody sheets and lab reports not provided.
Data collection methods follow, or are comparable to, current SWQB Standard Operating Procedures (SOPs).	Field collection methods fall under acceptable SOPs and/or are comparable to SWQB procedures. Exceptions discussed in *Additional and Closing Comments* section.
Sample **handling procedures** and holding times are the same as, or comparable to, the requirements in Appendix A of the SWQB QAPP.	Hold times reported in the QAPP, Preservation methods recorded, and a review of data forms obtained by SWQB determined that hold times were not exceeded.
Analytical methods used meet, or are comparable to, the requirements specified in Analytical Methods	Analytical methods fall under acceptable practices, and/or are comparable to SWQB

and Detection Limits (Appendix B) of the SWQB QAPP.	procedures. Exceptions discussed in *Additional and Closing Comments* section.
QC procedures are the same as, or comparable to, those listed in Appendix E of SWQB QAPP.	QC procedures fall under acceptable practices, and/or are comparable to SWQB procedures. Exceptions discussed in *Additional and Closing Comments* section.
QA procedures are comparable to those outlined in the SWQB QAPP.	**SWQB QA procedures are not invoked in this QAPP/SOPs for field collection of WQ data are not invoked in this QAPP. Some QA procedures are comparable to the SWQB QAPP.** Exceptions discussed in *Additional and Closing Comments* section.
Data verification and validation procedures are the same as, or comparable to, those described in SWQB's Data Verification and Validation SOP.	**A Field Quality Control Summary is not included in the submitter's QAPP**

Determination Summary

Analyte or Parameter Submitted	Accepted[1]/Tier	Data collection period
Temperature	I	May 19, 2014-Aug 31, 2016
pH	I	May 19, 2014-Aug 31, 2016
Dissolved Oxygen	III	May 19, 2014-Aug 31, 2016
Electrical Conductivity	I	May 19, 2014-Aug 31, 2016
Phosphate	I	May 19, 2014-Aug 31, 2016
E coli	I	May 19, 2014-Aug 31, 2016
Nitrate	I	May 19, 2014-Aug 31, 2016
Ammonia	I	May 19, 2014-Aug 31, 2016
Hardness	II	May 19, 2014-Aug 31, 2016
Aluminum	I	May 19, 2014-Aug 31, 2016

Additional and Closing Comments: After review and communication with Amigos Bravos on July 26, 2017, September 13, 2017 and October 24, 2017, to obtain supporting metadata

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[1] **Tier I**-Data as submitted meets quality assurance standards and is recommended for assessment purposes pursuant to the Clean Water Act, to determine attainment of water quality standards. assessment purposes
Tier II-Data as submitted, are missing some parameters or some level of quality assurance but may be used for confirmation or informational purposes.
Tier III-Data as submitted, does not contain enough quality assurance information to be used by the SWQB at this time.

supporting the submitted data set. Once supporting documentation was submitted most parameters had sufficient QA/QC information to recommend for assessment purposes. Other remarkable notes on the data are as follows:

Methodological procedures:

(1) Method number 10030 was listed in the QAPP for determining *E. coli* and subsequently the Water Quality Sampling Reports submitted to SWQB. However, this is not a listed method in the 21st edition of Standard Methods. Upon communication with the contract lab, SWQB was able to determine that the lab used the membrane filtration (MF) method 8074 "Total and Fecal Coliforms" with an adaptation consistent with the quantitative *E. coli* Standard Methods 9222 G. **Since this methodological assurance was demonstrated, and the data was quantitative, the *E. coli* data may be used.**

(2) Aluminum concentrations were reported in micrograms per liter (µg/L) but following submittal of the laboratory report analysis the actual aluminum concentration data are in milligrams per liter (mg/L). Implementation of quality assurance processes for ensuring accuracy of data and usability should be detailed in the QAPP and implemented in practice to reduce error. **Following clarification of aluminum concentration units to be in mg/L, this data may be used for assessment purposes as mg/L.**

(3) The Indigo Carmine method (CHEMets) for the determination of Dissolved Oxygen (DO) does not appear as an acceptable method for the determination (i.e., not EPA Approved) under 40 CFR §136.3. Additionally, Comparator charts are not mentioned and the literature subtending the Indigo Carmine method does not appear to have the appropriate range for the colorimetric comparator chart. **This data may not be used for assessment purposes.**

(4) Dissolved hardness was determined using manual titration field test kit (Hach Model 5-EP Test Kit) which does not meet EPA requirements as was confirmed through discussions with Hach Technical Support. However, hardness itself does not have a numeric water quality standard and was only used as the bases for determining if the waterbody was in support of the State's hardness-based Water Quality Standard for aluminum. Although the range of error under the manual titration method is wide, the SWQB feels that this particular data set is biased towards more conservative numeric values which could then be assumed to extend to a conservative water quality standard for total recoverable aluminum as reported in the Sentinel's Water Quality Sampling Reports. **This data may be considered for assessment purposes as it pertains to aluminum with note that future monitoring for hardness should be assessed using an EPA approved method to reduce the margin of error and increase precision.**

(6) Method listed in the reports for the determination of Phosphate is EPA 420.1 which is a phenolics method. It was determined that the appropriate EPA method for phosphate was used by the contract lab. **This data may not be used for assessment purposes.**

QC Procedures:

(1) Temperatures upon receipt are recorded for all three years and the limit appears to be ≤ 23°C. There was one exceedance in 2014 (sample F4); no other exceedances were recorded/reported.

(2) Incubation temperature for E coli: Unable to ascertain whether §2.5.5 of the SWQB QAPP Laboratory Quality Control, on incubation temperature was recorded, however, the Lab did not qualify this data in their Standard Microbiological Water Analyses reporting.

(3) SWQB was unable to determine if any field blanks were generated for any of the data submitted. Review of the data from Sangre de Cristo Lab does not appear to report field blanks.

(4) Laboratory did not report Method Reporting Level (MRL or PQL), Duplicate determinations, or blanks, fortified blank or fortified environmental sample recoveries for any analytes.

QA Procedures:

National representatives of the Water Sentinels program provided training for water quality sampling. A QAPP document (QAPP-Sentinels-Rios de Taos) was supplied as Appendix B to the water quality reports from 2014 through 2016, and identified Project Organization, Sample Custody, Data Reporting and Quality Assurance ("QA") of Field and Laboratory Analyses. Instrument or method detection limits and accuracy were reported based on instrument/method literature for Field Analysis. For laboratory analyses, Method identifiers were recorded as well as preservation methods, container types and holding time requirements

QAO Review: _____ Date: 03.29.18

Quality Assurance Assessment of Outside Data Submittals

Date Data Received by SWQB: April 6, 2018

Data Submitted by: NMED – Ground Water Quality Bureau
Amber Rheubottom
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Amber.Rheubottom@state.nm.us

Data Collected by: Intera Incorporated
Tricia Johnson
6501 Americas Parkway, Suite 810
Albuquerque, NM 87110

Contract Laboratory: Severn Trent Laboratories, Denver
4955 Yarrow Street
Arvada, CO 80002
(303) 736-0100
Patrick McEntee

Original Purpose and Source of Funding for Data Collection: Sampling was conducted to determine if storm water runoff from the St. Antony Mining Site into Meyer Draw (aka Arroyo del Valle) causes exceedances of constituents of concern above applicable background or water quality standards and the chemical nature of surface water in the mining pits (MWH, 2002). To accomplish these objectives, INTERA installed opportunistic automated samplers in Meyer Draw. Monitoring was funded by United Nuclear Corporation.

Watershed (HUC 8: 13020207) **and Waterbody Name(s)**: Arroyo del Valle (identified in submitted data as Meyers Draw)

Period of Data Collection: June 2004 through June 2005 (NOTE: no samples were obtained from automated surface water samplers between December 2004 and June 2005)

Data, Metadata and Quality Assurance Provided: The data provided in this data submittal package are summarized in Appendix C. Metadata and supporting quality assurance documentation included a sampling plan, investigation report, field notes, and lab data reports.

QA/QC Evaluation	Comments
Supporting QA documentation provided or available (calibration forms, custody sheets, etc.)	Sampling and analysis plan, custody sheets and analytical laboratory reports were submitted with data set. Calibration forms were not provided.
Data collection methods follow, or are comparable to, current SWQB Standard Operating Procedures (SOPs).	Grab and automated sample collection methods are comparable to SWQB procedures.

Sample **handling procedures** and holding times are the same as, or comparable to, the requirements in Appendix A of the SWQB QAPP.	Preservation and hold times reported in the laboratory analytical reports.
Analytical methods used meet, or are comparable to, the requirements specified in Analytical Methods and Detection Limits (Appendix B) of the SWQB QAPP.	Analytical methods fall under acceptable practices, and/or are comparable to SWQB procedures.
QC procedures are the same as, or comparable to, those listed in Appendix E of SWQB QAPP.	QC procedures fall under acceptable practices, and/or are comparable to SWQB procedures.
QA procedures are comparable to those outlined in the SWQB QAPP.	QA procedures are comparable to the SWQB QAPP.
Data verification and validation procedures are the same as, or comparable to, those described in SWQB's Data Verification and Validation SOP.	**Data verification and validation procedures were not provided.**

Determination Summary

Analyte or Parameter Submitted	Accepted[1]/Tier	Analysis Method
Aluminum	I	200.7
Arsenic	I	200.7
Barium	I	200.7
Beryllium	I	200.7
Boron	I	200.7
Cadmium	I	200.7
Calcium	I	200.7
Chromium	I	200.7
Cobalt	I	200.7
Copper	I	200.7
Iron	I	200.7
Lead	I	200.7
Magnesium	I	200.7
Manganese	I	200.7
Mercury	I	245.1
Molybdenum	I	200.7
Nickel	I	200.7
Potassium	I	200.7
Selenium	I	200.7
Silver	I	200.7
Sodium	I	200.7
Thallium	I	200.7
Uranium	I	200.8

Vanadium	I	200.7
Zinc	I	200.7
Total Dissolved Solids	II	160.1
Total Suspended Solids	II	160.2
Bicarbonate Alkalinity	I	310.1
Carbonate Alkalinity	I	310.1
Total Alkalinity	I	310.1
Chloride	I	325.2
Fluoride	I	340.2
Nitrate-Nitrite	I	353.2
Sulfate	I	375.4
Radium 226	I	7500 Ra-b
Radium 228	I	RA-05
Gross Alpha	I	900.0
Gross Beta	I	900.0

[1] **Tier I**-Data as submitted meets quality assurance standards and is recommended for assessment purposes pursuant to the Clean Water Act, to determine attainment of water quality standards. assessment purposes
Tier II-Data as submitted, are missing some parameters or some level of quality assurance but may be used for confirmation or informational purposes.
Tier III-Data as submitted, does not contain enough quality assurance information to be used by the SWQB at this time.

Additional and Closing Comments: After review of the submitted data set the laboratory parameters had sufficient QA/QC information for assessment purposes. Other remarkable notes on the data are as follows:

Methodological procedures:

(1) Note for all automated samples: an undisclosed amount of time passed between autosampler collection and staff filtering and preservation. Analyses with short hold times (<28 days) are appropriate for Tier II use only. Although dissolved metals are identified in the SWQB QAPP as requiring filtration within 15 minutes, EPA methods 200.7 and 200.8 specify "as soon as practically possible." Therefore, metals samples are accepted as Tier I.

(2) The analytical methods for TDS, TSS, chloride, sulfate, Radium 226 and Radium 228 differ from those methods listed in the SWQB QAPP; however, the methods used by STL are accepted EPA or Standard Methods with appropriate detection limits.

QC Procedures:
(1) Equipment/field blanks were not collected.
(2) The laboratory reported duplicate sample and method blank results.

QA Procedures:

Referenced in:

Montgomery Watson Harza (MWH), 2002. "St. Anthony Mine Site Stage 1 Abatement Plan, August 2002." Prepared by Montgomery Watson Harza, Albuquerque, New Mexico.

Intera, 2006. "Stage I Abatement Plan Investigation Report St. Anthony Mine Site Cebolleta, New Mexico. Volume I: Text, Table Figures" Albuquerque, New Mexico.

Intera, 2006. "Stage I Abatement Plan Investigation Report St. Anthony Mine Site Cebolleta, New Mexico. Volume II: Appendices" Albuquerque, New Mexico.

Review Performed by: Kris Barrios **Date: April 10, 2018**

QAO Review: Date: 04.11.18

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To: Lea Knutson, Hermit's Peak Watershed Alliance
Heidi Henderson, 604(b) Project Manager, SWQB
Lynette Guevara, TMDL Team, SWQB

From: Jennifer Fullam, Acting Quality Assurance Officer, SWQB

Date: October 11, 2017

Subject: Hermit's Peak Watershed Alliance data submittal to the Surface Water Quality Bureau

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Pursuant to the Clean Water Act, the New Mexico Environment Department (NMED) is required to assess the Waters of the State to determine attainment of approved water quality standards. The Surface Water Quality Bureau's (SWQB's) process for assessing and listing state waters that do not meet the State's Water Quality Standards is outlined in the Comprehensive Assessment and Listing Methodology (NMED/SWQB 2017). As part of the process, the SWQB reviews data collected by the Bureau as well as data collected from non-Bureau entities to determine if the data meets the requirements necessary for assessment and the development of the State of New Mexico's Clean Water Act (CWA) §303(d) / §305(b) Integrated Report. Hermit's Peak Watershed Alliance responded to SWQB's 2017 call for data and submitted their water quality data collected from the lower Gallinas River for consideration in the State's assessment. The following summarizes the elements of the above referenced data submittal package along with NMED's determination for use of the data for assessment purposes.

Date Data Received by SWQB Quality Assurance Officer: June 27, 2017

Data Submitted by: Hermit's Peak Watershed Alliance
Contact: Lea Knutson, 505.425.5514
lknutson@hermitspeakwatersheds.org

Data Collected by: Hermit's Peak Watershed Alliance.

Original Purpose and Source of Funding for Data Collection: The purpose of the 604(b) grant funded project is to identify the primary spatial and temporal locations of nutrient, temperature, and

turbidityimpairments in the Gallinas River Watershed (Lower Gallinas River Water Quality Monitoring Quality Assurance Project Plan, April 8, 2015)

Watershed: Pecos River Basin

Sample Location(s): Lower Gallinas River
Assessment Units: NM 2213_21 and NM 2213_23.
USGS HUCs: 130600010904, 130600010805,130600010808, and130600010903.

Lower Gallinas River Monitoring Project Sample Site ID qualifiers.

Associated SWQB Site ID	12-Digit HUC	HPWA Site Name	Latitude/Longitude
N/A	130600010904	Chuperito (Ch)	35.365/-104.95
50Gallin057.8	130600010903	La Liendre (LL)	35.41979/-105.05237
50Gallin075.0	130600010903	San Augustin (SA)	35.4647/-105.1572
N/A	130600010808	Charles R (CR)	35.50816/-105.20219
50Gallin101.8*	130600010808	WWTP_B	35.566393/-105.21167
50Gallin102.1	130600010808	WWTP_A	35.56667/-105.210837
50Gallin104.8	130600010805	Roundhouse (RH)	35.5861/-105.217
50Gallin116.7	130600010805	Hotsprings (HS)	35.653/-105.2936

*Station locations as provided in the Hermits Peak Watershed Alliance Data Submittal Package identify the associated SWQB Assessment Unit as 50Gallin101.9

Period of Data Collection: June 29 to November 2, 2015.

Corresponding Comprehensive Assessment and Listing Methodology (CALM): Procedures for Assessing Water Quality Standards Attainment for the State of New Mexico CWA _§_303 (d)/ §_305(b) Integrated Report: Comprehensive Assessment and Listing Methodology (CALM). June 14, 2017.

Metadata and/ or Quality Assurance Provided or Referenced: Contact information, Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), site information, State Laboratory Division (SLD) submittal forms, field data forms, sonde and datalogger deployment forms, validation and verification forms, spreadsheet of identified point sources, data sheets (including SLD lab forms), NMED SOPs: 10.0 Nutrient Survey and Sampling, and 6.2 Sonde Deployment.

Summary of data as submitted according to data sheets, field logs and analytical laboratory reports.

Analyte	Collection Frequency	Collection period	Recorded Analytical Method	Sample Processing	Sample Preservation	Holding Time
Ammonia as Nitrogen	2 days	7/13-14/2015	EPA Method 350.1	Laboratory	Acidified pre-field unknow °C	< 28 days
Dissolved Oxygen	Continuous	8/7/2015-10/7/2015	Long-term sonde deployment. 15 min intervals	YSI Model 6920V2	In situ measurements	Not Applicable
Chlorophyll a*	Single	9/9/2015	EPA Method 445.0	Laboratory	Not documented	Not documented
Flow	Not Applicable	Not Applicable	USGS gages in Lourdes and Montezuma	USGS gages	In situ measurements	Not Applicable
Nitrate+Nitrite as Nitrogen	Weekly/ Biweekly	6/29/2015-11/2/ 2015	EPA Method 353.2	Laboratory	Acidified pre-field ≤ 6 °C	< 28 days
pH	Weekly	6/29/2015 – 11/2/2015	Not documented	YSI Model 6920V2	Not Applicable	Not Applicable
Phosphate (Low Concentration)	Weekly/ Biweekly	7/29/2015-10/30/2015	EPA Method 365.1	Laboratory	Acidified pre-field ≤ 6 °C	< 28 days
Phosphorus (Total)	Weekly/ Biweekly	6/29/2015-11/2/ 2015	EPA Method 365.4	Laboratory	Acidified pre-field ≤ 6 °C	< 28 days
Temperature	Continuous	6/29/2015 - 6/4/2015	Long-term sonde datalogger deployment	HOBO Water Temp Pro v2 datalogger	In situ measurements	Not Applicable
Total Kjeldahl Nitrogen (TKN)	Weekly	6/29/2015-11/2/2015	EPA Method 351.2	Laboratory	Acidified pre-field Delivered at ≤ 6 °C	≤ 28 days
Total Suspended Solids (TSS)*	Weekly	7/13/2015-11/2/2015	SM 2540 D	Laboratory	Delivered at > 6 °C†	> 7 days†
Turbidity	Weekly	6/29/2015 – 11/2/2015	Not documented	YSI Model 6920V2	Not Applicable	Not Applicable

* Collected by NMED concurrently

†Not in compliance for some individual/batch samples.

Determination: Upon review, the Hermit's Peak Watershed Alliance all data listed above is recommended for use in assessment. TSS data values can be used upon assessment of the chain of custody compliance of preservation and holding time.

Findings: Hermit's Peak Watershed Alliance received a USEPA Clean Water Act 604(b) grant to investigate water quality and potential water quality impairments in the Gallinas River watershed. The SWQB reviewed the QAPP for this project which received EPA approval in April 2015. In February 2016, the SWQB responded by letter to a concern that field blanks collected by Hermit's Peak Watershed Alliance after September 9, 2015 had quantifiable detections for "nitrite plus nitrate." It was determined that the source of this detection was from store-bought distilled water and was confined in date, location, and source. As there were no concerns regarding the sampling procedures or analytical methods, the stream data was preliminarily determined reliable. The SWQB instructed Hermit's Peak Watershed Alliance on how to apply qualifier codes to their data to identify the blanks with the nitrite plus nitrate detection.

The SWQB reviewed the data package according to SWQB's QAPP and the Guidelines for Data Submission (NMED/SWQB 2013). Hermit's Peak Watershed Alliance included the requisite QAPP, a field sampling plan, site information, field data sheets, and laboratory data sheets in their data submittal package. After reviewing the QAPP, it was determined that data was collected and analyzed using EPA approved methods which are consistent with SWQB methods as detailed in the SWQB QAPP and Standard Operating Procedures (SOPs). The data file, in Microsoft Office Excel format, that Hermit's Peak Watershed Alliance submitted included qualifier codes per instruction from SWQB following the investigation regarding analyte detection in field blanks. Data was verified by the SWQB by comparing the data spreadsheet to the scanned laboratory sheets from Scientific Laboratory Division (SLD) in Albuquerque, NM. The SWQB compared all the submitted SLD laboratory sheets to the data spreadsheet and found no inconsistences during this verification and validation process.

Although electronic data in Excel format was provided by Hermit's Peak Watershed Alliance in the initial data submittal package, the supporting analytical results from SLD detailing the results of the Total Suspended Solids (TSS) along with other analytes did not appear to be included. Through data verification of those which had corresponding analytical reports from SLD, the integrity of the data appears to be intact and unaltered from what was originally provided by SLD. The SWQB also reviewed the chain of custody/data submittal forms that Hermit's Peak Watershed Alliance provided. It appears that some of the samples, upon receival by SLD, exceeded the temperature requirement set by EPA methods. However, because sample preservation was documented to have been done through acidification of the water samples in the field, SWQB does not believe the analytical results are compromised and can therefore be used. It is important to ensure EPA methodologies are adhered to in order to reduce future usability of data.

As iterated above, the data and supporting quality assurance documentation identified in this report supports use for assessment purposes.

References

Hermit's Peak Watershed Alliance. April 8, 2015. *Lower Gallinas River Water Quality Monitoring Quality Assurance Project Plan*

NMED/SWQB. March 20, 2013. *Guidelines for Submission of Water Quality Data.* https://www.env.nm.gov/swqb/DataSubmittals/Guidelines.pdf

NMED/SWQB. Feburary 7, 2016. Memorandum regarding "Qualification and Acceptance of Lower Gallinas "nitrite plus nitrate" data related to filed blank detections".

NMED/SWQB. 2016. *Quality Assurance Project Plan for Water Quality Management Programs.* https://www.env.nm.gov/swqb/QAPP/index.html

NMED/SWQB. June 14, 2017. *Comprehensive Assessment and Listing Methodology (CALM).* https://www.env.nm.gov/wp-content/uploads/2017/03/FINAL-2018-Main-CALM.pdf

NMED/SWQB. Standard Operating Procedures. https://www.env.nm.gov/surface-water-quality/sop/

Quality Assurance Assessment of Outside Data Submittals

Date Data Received by SWQB: 12/7/2017 (data were requested)

Data Submitted by: Los Alamos National Laboratory (LANL) Environmental Protection Division
Environmental Compliance Programs (EPC-CP)
Robert Gallegos, 505-665-0450, rgallegos@lanl.gov

Data Collected by: LANL staff and their contractors

Contract Laboratory: various (see data files)

Description of data acquisition:

SWQB began the process of pulling data from *Intellus New Mexico* in order to re-assess surface water quality on the Pajarito Plateau for development of the draft CWA 303(d)/305(b) Integrated List. This region of the state is assessed approximately every four years as data collection by various LANL staff and contractors is on-going. Intellus is a publicly-accessible database primarily containing environmental monitoring data provided by LANL and the NMED DOE Oversight Bureau (DOE OB). Since 2012, the integrated records of LANL and DOE OB have been stored in Intellus. This database was established to provide complete transparency into the Laboratory's environmental monitoring and sampling data. Specifically, it is intended to ensure that members of the public have real-time access to the most recent data used by managers, analysts, and scientists to help guide environmental stewardship decisions. System data are updated nightly and all data are verified and validated before release. All data contained in this system are unclassified.

Ms. Guevara contacted Robert Gallegos of the Environmental Compliance Programs for assistance in downloading available surface water quality data from 2012-2017 at various watershed monitoring station on the Pajarito Plateau from Intellus. The purpose of environmental monitoring at core watershed station is to characterize surface water on Pajarito Plateau in order to identify parameters of concern as well as compliance with various regulations. Ms. Guevara and Mr. Gallegos agreed it would be more efficient for Mr. Gallegos to pull LANL data directly from the LANL EIM database that direct feeds IntellusMr. Gallegos pulled the requested LANL data from EIM, as well as DOE OB data from Intellus, and provided these data with requested associated metadata to Ms. Guevara in a requested spreadsheet format for assessment purposes. This dataset includes Sandia Canyon thallium and copper data submitted separately by Mr. Gallegos on May 11, 2017 in response to SWQB's official Request for Water Quality Data. Routine validation of analytical data by parameter group is available in the documents section of the Intellus database in the SOP section (http://www.intellusnmdata.com/documents/documents.cfm). The final assessment data files contain data from a variety of LANL environmental monitoring programs. All data used for assessed are marked "validated" and "usable" in EIM/Intellus. LANL maintains as extensive website and electronic reading room with documentation related SOP regarding preservation, shipping/receiving, etc. The majority of SOPS regarding surface water monitoring is covered under LANL's general surveillance (DOE Orders). ISCO SOPs include 1) EP-DIV-SOP-10005, Installing, Setting Up, and Operating ISCO Samplers; 2) ER-SOP-10013, Inspecting ISCO Storm Water Samplers and Retrieving Samples; and 3) EP-DIV-SOP-20217, Processing Surface Water Samples (available at http://www.lanl.gov/environment/plans-procedures.php). LANL's "Interim Facility-Wide Groundwater Monitoring Plan" for various monitoring years also includes base flow monitoring at a number of surface water sites.

DOE OB data downloaded from Intellus were not included in the final assessment data set due to lack of documented SOPs for the sampling period 2012-2017. SWQB has discussed the concern with DOE OB, and DOE OB has plans in place to ensure this documentation for future sampling.

Watershed (HUC 8) and Waterbody Name(s): Various assessment units (i.e., stream reaches) on the Pajarito Plateau (see data file)

Period of Data Collection: on-going (May 1, 2012 through November 20, 2017 in this dataset per request)

Data, Metadata and Quality Assurance Provided: The data provided in this data acquisition are summarized in Appendix B. Metadata and supporting quality assurance documentation includes

Acceptance Criteria **QA/QC Criteria**	**Status** **Comments**
Supporting QA documentation provided or available (calibration forms, custody sheets, etc.)	yes
Data collection methods follow, or are comparable to, current SWQB Standard Operating Procedures (SOPs).	yes
Sample **handling procedures** and holding times are the same as, or comparable to, the requirements in Appendix A of the SWQB QAPP.	yes
Analytical methods used meet, or are comparable to, the requirements specified in Analytical Methods and Detection Limits (Appendix B) of the SWQB QAPP.	yes
QC procedures are the same as, or comparable to, those listed in Appendix E of SWQB QAPP.	yes
QA procedures are comparable to those outlined in the SWQB QAPP.	yes
Data verification and validation procedures are the same as, or comparable to, those described in SWQB's Data Verification and Validation SOP.	yes

Determination Summary

Analyte or Parameter Submitted	**Accepted**[1]	**Data collection period**
All assessed parameters with applicable surface WQ criteria	Yes, Tier I	May 1, 2012 – November 30, 2017

Additional and Closing Comments: The data submitted by Robert Gallegos, LANL, as requested on 12/7/2017, and associated documentation available through Intellus and LANL websites, demonstrate that the data met the Quality Assurance/Quality Control requirements to be considered for assessment purposes.

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[1] Tier I-Data as submitted meets quality assurance standards required to be used for assessment purposes
Tier II-Data, as submitted, is missing some parameters or some level of quality assurance to which data can only be used for confirmation or informational purposes.
Tier III-Data, as submitted, does not contain enough information to be used by the SWQB at this time.

Review prepared by:_____ Date:_____

QAO Review:_____ Date: 03.15.18

Quality Assurance Assessment of Outside Data Submittals

Date Data Received by SWQB: 9/29/17 (data downloaded from https://www.epa.gov/goldkingmine)

Data Consolidated by: Kate Sullivan, EPA ORD, Sullivan.Kate@epa.gov

Data Collected by: EPA Region 6, EPA Region 8, EPA Region 9, EPA ORD, USGS, Navajo Nation EPA

Contract Laboratory: various (see data files)

Description of data acquisition:

SWQB began the process of acquiring all available data related to the Gold King Mine (GKM) spill in order to assess surface water quality in the Animas and lower San Juan River for development of the draft 2018 CWA 303(d)/305(b) Integrated List. The EPA Office of Research and Development (ORD) consolidated all available data in part to document the fate and transport of heavy metals released from the Gold King Mine (GKM) spill (EPA 2017). Data were collected by USGS, and a variety of state, tribal, and EPA staff and their contractors. This consolidated 2015-2017 dataset (EPA CONSOLIDATED POST EVENT DATA", All_Data_Long_Format tab) was downloaded from their website, https://www.epa.gov/goldkingmine, on 9/29/17) following a phone conversation the previous day with Kate Sullivan, EPA ORD. Additional 2017 sampling data provided by Ms. Sullivan were added to the consolidated dataset. As stated in the downloaded spreadsheet, the data were accepted from the various sampling entities who had collected and QA them and were collated "as is." All of data were collected under specific QAPPs and sampling plans depending on the sampling entity. All metals data were converted to ug/L.

All metals data from mainstream sampling locations with applicable NM WQC, along with concurrent dissolved calcium and magnesium, were the focus of the assessment and hence retained in the assessment dataset. All measurements and associated detection limits were converted to mg/L to work with SWQB's RStudio automated assessment routines. All data management rules in SWQB's current listing methodology (https://www.env.nm.gov/wp-content/uploads/2017/03/FINAL-2018-Main-CALM.pdf, Section 2.1) were applied to the dataset. For example, total aluminum samples that were not filtered with a 10-micron filter prior to analysis when concurrent turbidity exceeded 30 NTUs were removed from the dataset. EPA's noted distance from the GKM (in river kilometers) was added to the station input file in order to properly assign stations and associated data to the appropriate assessment unit. SWQB-collected data were removed from the EPA consolidated dataset because they were already assessed separately.

The final assessment data input file contained fifteen total mercury results that appeared to be erroneously marked as "detected" when the value and sampling method implied they should have been marked as not detected. SWQB passed this concern on to the data collector, EPA Region 6, as well as EPA ORD in mid-November 2017. Having received no resolution by early 2018, SWQB notified EPA Region 6 of our working assumption that these data should be noted as not detected. EPA Region 6 concurred with this approach via email, 2/5/18.

Watershed (HUC 8) and Waterbody Name(s): Animas River (Estes Arroyo to So. Ute Indian Tribe bnd), Animas River (San Juan River to Estes Arroyo), San Juan River (Navajo bnd at Hogback to Animas River)

Period of Data Collection: August 6, 2015 – June 14, 2017

Data, Metadata and Quality Assurance Provided: The data provided in this data acquisition are summarized in Appendix B. Metadata and supporting quality assurance documentation includes

Acceptance Criteria **QA/QC Criteria**	**Status** **Comments**
Supporting QA documentation provided or available (calibration forms, custody sheets, etc.)	yes
Data collection methods follow, or are comparable to, current SWQB Standard Operating Procedures (SOPs).	yes
Sample **handling procedures** and holding times are the same as, or comparable to, the requirements in Appendix A of the SWQB QAPP.	yes
Analytical methods used meet, or are comparable to, the requirements specified in Analytical Methods and Detection Limits (Appendix B) of the SWQB QAPP.	yes
QC procedures are the same as, or comparable to, those listed in Appendix E of SWQB QAPP.	yes
QA procedures are comparable to those outlined in the SWQB QAPP.	yes
Data verification and validation procedures are the same as, or comparable to, those described in SWQB's Data Verification and Validation SOP.	yes

Determination Summary

Analyte or Parameter Submitted	**Accepted**[1]	**Data collection period**
All assessed parameters with applicable surface WQ criteria	Yes, Tier I	August 6, 2015 – June 14, 2017

Additional and Closing Comments: The GKM data downloaded via EPA ORD's on 9/29/17, and associated documentation available through the same and various EPA, state, and tribal websites, demonstrate that the data met the Quality Assurance/Quality Control requirements to be considered for assessment purposes.

Review prepared by:_____ Date:_____

QAO Review: [signature] Date: 03.15.18

[1] Tier I-Data as submitted meets quality assurance standards required to be used for assessment purposes
Tier II-Data, as submitted, is missing some parameters or some level of quality assurance to which data can only be used for confirmation or informational purposes.
Tier III-Data, as submitted, does not contain enough information to be used by the SWQB at this time.