

# Annual Report Format



## National Pollutant Discharge Elimination System Stormwater Program MS4 Annual Report Format



Check box if you are submitting an individual Annual Report with one or more cooperative program elements.

Check box if you are submitting an individual Annual Report with individual program elements only.

Check box if this is a new name, address, etc.

### 1. MS4(s) Information

UNIVERSITY OF NEW MEXICO

Name of MS4

Chemanji Shu-Nyamboli University Safety Officer

Name of Contact Person (First) (Last) (Title)

505-277-2766 cshu@unm.edu

Telephone (including area code) E-mail

1801 Tucker Rd NE

Mailing Address

Albuquerque NM 87131

City State ZIP code

What size population does your MS4(s) serve? 33,000 NPDES number

What is the reporting period for this report? (mm/dd/yyyy) From Jul 1, 2017 to Jun 30, 2018

### 2. Water Quality Priorities

A. Does your MS4(s) discharge to waters listed as impaired on a state 303(d) list?  Yes  No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4(s). Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
Rio Grande NM 2105_50	E. coli	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Rio Grande NM 2105_50	Dissolved Oxygen	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Rio Grande NM 2105_50	Temperature	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**2. B. Continued**

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

C. What specific sources contributing to the impairment(s) are you targeting in your stormwater program?

Pet waste (E. coli), waste from birds (E. coli), fats, oils, nutrients

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)?  Yes  No

E. Are you implementing additional specific provisions to ensure their continued integrity?  Yes  No

**3. Public Education and Public Participation**

A. Is your public education program targeting specific pollutants and sources of those pollutants?  Yes  No

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

Trash, debris, E. coli (from pet waste), sediment, chemicals (motor oil, fertilizer).

C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

Recent data indicates a decline in the levels of E. coli in the Middle Rio Grande and that the E. coli impairment is limited to one segment, even though the TMDL applies to all segments within the Albuquerque urban area.

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program?  Yes  No

**4. Construction**

A. Do you have an ordinance or other regulatory mechanism stipulating:

Erosion and sediment control requirements?  Yes  No

Other construction waste control requirements?  Yes  No

Requirement to submit construction plans for review?  Yes  No

MS4 enforcement authority?  Yes  No

B. Do you have written procedures for:

Reviewing construction plans?  Yes  No

Performing inspections?  Yes  No

Responding to violations?  Yes  No

C. Identify the number of active construction sites  $\geq 1$  acre in operation in your jurisdiction at any time during the reporting period.

D. How many of the sites identified in 4.C did you inspect during this reporting period?

E. Describe, on average, the frequency with which your program conducts construction site inspections.

On average, UNM personnel inspect construction sites once a month during active construction, and within 24 hours after a storm event. Qualified contractors inspect the sites at frequencies required in the Construction General Permit.

F. Do you prioritize certain construction sites for more frequent inspections?  Yes  No

If Yes, based on what criteria?

Sites under active construction during monsoon season

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

Yes Notice of violation  No Authority

Yes Administrative fines  No Authority

Yes Stop Work Orders  No Authority

Yes Civil penalties  No Authority

Yes Criminal actions  No Authority

Yes Administrative orders  No Authority

Yes Other

H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction?  Yes  No

I. What are the 3 most common types of violations documented during this reporting period?

Tracking sediment onto the street, concrete washout from trucks onto street, documentation of contractor inspections

J. How often do municipal employees receive training on the construction program?

**5. Illicit Discharge Elimination**

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system?  Yes  No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system?  Yes  No

C. Identify the number of outfalls in your storm sewer system.

D. Do you have documented procedures, including frequency, for screening outfalls?  Yes  No

E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?

F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage?

G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.

UNM does not have what would be considered outfalls as defined in Part VII of the permit. UNM has identified discharge points into major drainage channels in the MS4, and monitors those according to the schedule in the SWMPP and IDDE

H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges?  Yes  No

I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges?  Yes  No

J. During this reporting period, how many illicit discharges/illegal connections have you discovered?

K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?

L. How often do municipal employees receive training on the illicit discharge program?

**6. Stormwater Management for Municipal Operations**

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

- All public parks, ball fields, other recreational facilities and other open spaces  Yes  No
- All municipal construction activities, including those disturbing less than 1 acre  Yes  No
- All municipal turf grass/landscape management activities  Yes  No
- All municipal vehicle fueling, operation and maintenance activities  Yes  No
- All municipal maintenance yards  Yes  No
- All municipal waste handling and disposal areas  Yes  No

Other

B. Are stormwater inspections conducted at these facilities?  Yes  No

C. If Yes, at what frequency are inspections conducted?

D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

Management O&M practices are in place for street sweeping and trash pickup.

E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection?  Yes  No

F. If Yes, which activities and/or facilities receive most frequent inspections?

G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management?  Yes  No

H. If yes, do you also provide regular updates and refreshers?  Yes  No

I. If so, how frequently and/or under what circumstances?

UNM Grounds and Landscaping staff receive training on stormwater management. UNM contractors are required obtain and maintain training and certification in stormwater management.

**7. Long-term (Post-Construction) Stormwater Measures**

A. Do you have an ordinance or other regulatory mechanism to require:

- Site plan reviews for stormwater/water quality of all new and re-development projects?  Yes  No
- Long-term operation and maintenance of stormwater management controls?  Yes  No
- Retrofitting to incorporate long-term stormwater management controls?  Yes  No

B. If you have retrofit requirements, what are the circumstances/criteria?

N/A

C. What are your criteria for determining which new/re-development stormwater plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.)?

All UNM projects that disturb land are reviewed.

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development?  Yes  No

E. Do these performance or design standards require that pre-development hydrology be met for:

Flow volumes	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Peak discharge rates	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Discharge frequency	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Flow duration	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

F. Please provide the URL/reference where all post-construction stormwater management standards can be found.

<https://srs.unm.edu/construction-safety/media/docs/srs-contractor-requirements.pdf>

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection?

H. How many of the plans identified in 7.G were approved?

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period?

J. How many of the practices/facilities identified in I were found to have inadequate maintenance?

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?

L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities?  Yes  No

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices?

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance?  Yes  No

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system?  Yes  No

P. How often do municipal employees receive training on the post-construction program?

8. **Program Resources**

A. What was the annual expenditure to implement MS4 permit requirements this reporting period?

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit?

C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?

Source:  Amount \$  OR %

Source:  Amount \$  OR %

Source:  Amount \$  OR %

D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)?

E. Do you share program implementation responsibilities with any other entities?  Yes  No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
Cooperative	stormwater compliance monitoring	Intergovernmental Agreement

9. **Evaluating/Measuring Progress**

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
<i>Example: E. coli</i>	2003	Weekly April–September	20
E. coli	2016	Schedule defined in monitoring	2

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

Monitoring has only occurred over a short period of time (2 years, 6 samples). Trends have not been established.

10. **Additional Information**

Please attach any additional information on the performance of your MS4 program, including information required in Parts I.C, I.D, and III.B. If providing clarification to any of the questions above, please provide the question number (e.g., 2C) in your response.

**Certification Statement and Signature**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Yes  No

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility:** by either a principal executive or ranking elected official.

Signature  David W. Harris, EVP Administration

Name of Certifying Official, Title Date (mm/dd/yyyy)

Proposed revisions to this SWMP are tracked in red text.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	Proposed Plan	Measurable Goal	Status
<p><b>1.1 Development of an ordinance or other regulatory mechanism as required in Part I.D.5.a.(ii)(a), The program must include the development, implementation, and enforcement of, at a minimum:</b></p> <p>(a) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State, Tribal or local law;</p>	<p>Safety &amp; Risk Services (SRS), Physical Plant Department (PPD) and the Office of Planning, Design &amp; Construction (PDC) will continue to review, revise and enforce existing design and construction standards and guidelines, and develop new guidelines where appropriate.</p> <p>SRS Contractor requirements for new and remodeled UNM facilities requires:</p> <ol style="list-style-type: none"> <li>1. For projects disturbing &gt; 1 acre of soil or pavement: prior to breaking ground, contractor must make required EPA notifications (e.g., NOI and NOT) obtain an NPDES permit or waiver, and develop and comply with any required site-specific Storm Water Pollution Prevention Plan (SWPPP). SRS may request revision of contractor's SWPPP. UNM may with-hold payment for contractor non-compliance.</li> <li>2. Any required storm water controls must be regularly inspected &amp; maintained over project duration.</li> <li>3. Washing out construction equipment on-site               <ol style="list-style-type: none"> <li>a. Permitted in PPD-approved pit locations for biodegradable and non-hazardous water-based material (e.g., latex paints, concrete) wash rinsate. Rinsate of water-based paints may also be washed down the sanitary sewers if PPD allows.</li> <li>b. Oil- &amp; solvent-based materials washing rinsate must be properly disposed off-site.</li> <li>c. No on-site disposal of unused materials other than clean soil with PPD approval.</li> </ol> </li> <li>4. Trash Control – all exterior trash that may become wind-blown or wash off-site with storm water must be picked up at least daily.</li> <li>5. As the site operator, the constructor (GC or CM, etc.) will be responsible for all EPA Construction General Permit</li> </ol>	<p>Revisions to existing policy, design or construction standards and guidelines; or creation of new policy, design or construction standards and guidelines that pertain to erosion and sediment control will be tracked and reported in the annual report.</p>	<p>SRS has reviewed and proposed revisions to its Design Guidelines.</p> <p>During this reporting period, SRS began doing a review and making revisions to the UNM Construction Safety Manual. This process is expected to be completed by the end of December 2018.</p>

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	<p>(CGP) requirements, e.g., but not limited to meeting &amp; maintaining construction site storm water quality discharge requirements, SWPPPs, NOIs, BMPs, inspections, record-keeping, reporting, monitoring, NOTs, etc. until UNM formal acceptance of the completed project.</p> <p>SRS design guidelines (Rev. April 2012) require that:</p> <ol style="list-style-type: none"> <li>1. Roof drains should direct water into plantings or be used for other beneficial reuses whenever possible before discharge to the storm sewer.</li> <li>2. For projects disturbing greater than 1 acre of soil or pavement, the designer shall allow space for, or design in, sufficient storm water retention to minimize discharge of sediment laden storm water during construction. For final site design, retain on-site all storm water discharge in excess of natural pre-development discharges for up to a 2-inch rain event or whatever the current CABQ Development Process Manual (DPM) requires.</li> </ol> <p>PPD's Environmental Services Design &amp; Development Standard Requirements require that roof drains not drain out onto walkways and that water should be harvested if possible or roof drains directed to the storm drains.</p>		
<p><b>1.2. Develop requirements and procedures as required in Part I.D.5.a.(ii)(b) through in Part I.D.5.a.(ii)(h)</b></p> <p>(b) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices (both structural and non-structural);</p> <p>(c) Requirements for construction site operators to</p>	<ul style="list-style-type: none"> <li>• (See proposed activities listed for permit activity 1.1 above).</li> <li>• SRS and its sister departments will continue to inform UNM contractors of requirements and review necessary documents (i.e., erosion control plan, SWPP/eNOI application and fugitive dust permit) during the Construction Review Process.</li> <li>• SRS and its sister departments will continue to oversee UNM contractors to ensure that they comply with</li> </ul>	<ul style="list-style-type: none"> <li>• Revisions to existing policy, design or construction standards and guidelines; or creation of new policy, design or construction standards and guidelines that pertain to erosion and sediment control will be tracked and reported in the annual report.</li> </ul>	<p>During the reporting period, SRS reviewed 3 SWPPPs and 3 fugitive dust permit for the Physics and Astronomy and Interdisciplinary Sciences Building, Smiths Plaza, and Anderson School of Management. These have been filed at SRS.</p> <p>During the review period, SRS identified and reviewed site plans for</p>

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<p>control waste such as, but not limited to, discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality (see EPA guidance at <a href="http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&amp;Rbutton=detail&amp;bmp=117">http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&amp;Rbutton=detail&amp;bmp=117</a>);</p> <p>(d) Procedures for site plan review which incorporate consideration of potential water quality impacts. The site plan review must be conducted prior to commencement of construction activities, and include a review of the site design, the planned operations at the construction site, the planned control measures during the construction phase (including the technical criteria for selection of the control measures), and the planned controls to be used to manage runoff created after the development;</p> <p>(e) Procedures for receipt and consideration of information submitted by the public;</p> <p>(f) Procedures for site inspection (during construction) and enforcement of control measures, including provisions to ensure proper construction, operation, maintenance, and repair. The procedures must clearly define who is responsible for site inspections; who has the authority to implement enforcement procedures; and the steps utilized to identify priority sites for inspection and enforcement based on the nature of the construction activity, topography, and the characteristics of soils and the quality of the receiving water. If a construction site operator fails to comply with procedures or policies established by the permittee, the permittee may request EPA enforcement assistance. The site inspection and enforcement procedures must describe sanctions and enforcement mechanism(s) for violations of permit</p>	<p>federal law, municipal ordinance and contractual provisions and implementing a Storm water Pollution Prevention Plan (SWPPP).</p> <ul style="list-style-type: none"> <li>• PPD’s Environmental Services Design &amp; Development Standard Requirements prohibits washing of concrete trucks on site, and requires removal of construction debris, including concrete tailings from site.</li> <li>• SRS and its sister departments will continue to review site plans and attend pre-construction review meetings to try to ensure consistency with applicable storm water quality requirements. The plan review must occur prior to construction and focus on construction and post-construction storm water quality measures that address likely impacts and public concerns. Site plan review must include evaluation of opportunities for incorporating green infrastructure (GI).</li> <li>• UNM will continue to comply with the CGP, including SWPPP preparation and eNOI application for all public projects greater than one acre.</li> <li>• e) UNM continues to welcome public participation in its SWMP. The draft SWMP was published for public comment before submittal to the EPA. Public comments were reviewed and addressed accordingly. The SRS Department continues involving other UNM departments, e.g., PPD, PDC, etc., as stakeholders in the development and revision of UNM’s SWMP.</li> <li>• f) UNM will continue to develop inspection procedures for exterior construction sites less than 1-acre. The new procedures will include: (1) determining who is responsible for conducting UNM construction site storm water quality inspections; determining who has authority to implement enforcement procedures regarding construction storm water quality at UNM;</li> </ul>	<ul style="list-style-type: none"> <li>• SRS and its sister departments will maintain records of documents required from contractors pertaining to Stormwater (i.e., erosion control plan, SWPP/eNOI application and fugitive dust permit. The number of documents will be reported in the annual report.</li> <li>• Site plan reviews and evaluation of opportunities for incorporating green infrastructure (GI) will be documented and reported in the annual report.</li> <li>• Finalized inspection procedures for exterior construction sites less than 1-acre will be included the annual report as an appendix.</li> <li>• SRS will maintain records of the number of trainings offered on the SWMP and general storm water pollution prevention (P2) basics, and will report these in the annual report.</li> </ul>	<p>the above mentioned projects for opportunities for incorporating GI.</p> <p>Inspection checklists have been developed for inspecting construction sites. The inspections are conducted by SRS personnel at least once a month, and within 24 hours after a storm event.</p> <p>The UNM SWMPP was finalized and sent to PDC and PPD and is being implemented. Training material on stormwater management and pollution prevention was finalized and training was provided to the UNM Grounds and Landscaping Staff.</p> <p>During this reporting period, 3 construction project sites (Smith Plaza, Anderson School of Management, Physics and Astronomy and Interdisciplinary Sciences Building) were inspected for stormwater management compliance.</p> <p>Inspection procedures for exterior construction sites less than 1-acre have been completed and are incorporated into this SWMP and included in the annual report as an appendix.</p> <p>During the July 1<sup>st</sup> to June 30<sup>th</sup> 2017 reporting period, one training session on the SWMP and general storm water pollution prevention (P2) basics was provided and 31 staff members of the PPD grounds and landscaping attended. Training records are maintained on file at SRS. No training was provided this</p>
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<p>requirements and penalties with detail regarding corrective action follow-up procedures, including enforcement escalation procedures for recalcitrant or repeat offenders. Possible sanctions include non-monetary penalties (such as stop work orders and/or permit denials for non-compliance), as well as monetary penalties such as fines and bonding requirements;</p> <p>(g) Procedures to educate and train permittee personnel involved in the planning, review, permitting, and/or approval of construction site plans, inspections and enforcement. Education and training shall also be provided for developers, construction site operators, contractors and supporting personnel, including requiring a stormwater pollution prevention plan for construction sites within the permittee’s jurisdiction;</p> <p>(h) Procedures for keeping records of and tracking all regulated construction activities within the MS4, i.e. site reviews, inspections, inspection reports, warning letters and other enforcement documents. A summary of the number and frequency of site reviews, inspections (including inspector’s checklist for oversight of sediment and erosion controls and proper disposal of construction wastes) and enforcement activities that are conducted annually and cumulatively during the permit term shall be included in each annual report;</p>	<p>developing a process for prioritizing sites for inspection and enforcement based on type of construction activity; inspecting all sites greater than 1-acre at least once per year and follow up on any deficiencies to ensure corrective action; inspecting sites once project team believes final site stabilization is complete; and describing enforcement procedures and any penalties for repeated non-compliance at a UNM construction site.</p> <ul style="list-style-type: none"> <li>• The leadership of PDC &amp; PPD will be engaged by SRS in the development and implementation of UNM’s SWMP. Once the SWMP is finalized, training on the SWMP and general storm water pollution prevention (P2) basics will be offered.</li> <li>• UNM will continue its procedures for construction project record-keeping, including, site reviews, inspections, inspection reports, any enforcement letters &amp; documents.</li> </ul>		<p>reporting period, but trainings have begun for the next reporting period.</p>
<p><b>1.3. Annually conduct site inspections of 100 percent of all construction projects cumulatively disturbing one (1) or more acres as required in Part I.D.5.a.(iii):</b></p> <p>(iii) Annually conduct site inspections of 100 percent of all construction projects cumulatively disturbing one (1) or more acres within the MS4 jurisdiction. Site inspections are to be followed by any necessary compliance or enforcement action. Follow-up inspections are to be conducted to ensure corrective</p>	<ul style="list-style-type: none"> <li>• UNM will continue to develop inspection procedures for 100% of all exterior construction projects cumulatively disturbing one (1) or more acres. The new procedures will include: (1) determining who is responsible for conducting UNM construction site storm water quality inspections; determining who has authority to implement enforcement procedures regarding construction storm water quality at UNM; developing a process for prioritizing sites for inspection and enforcement based on type of construction activity;</li> </ul>	<ul style="list-style-type: none"> <li>• Finalized inspection procedures and the number of site inspections done will be included the the annual report as an appendix.</li> </ul>	<p>Inspection checklists have been developed for inspecting construction sites. The inspections are conducted by SRS personnel at least once a month, and within 24 hours after a storm event. Written procedures on how the inspections should be conducted have been completed and are incorporated into this SWMP.</p>

**Proposed revisions to this SWMP are tracked in red text.**

<p>maintenance has occurred; and, all projects must be inspected at completion for confirmation of final stabilization.</p>	<p>inspecting all sites greater than 1-acre at least once per year and follow up on any deficiencies to ensure corrective action; inspecting sites once project team believes final site stabilization is complete; and describing enforcement procedures and any penalties for repeated non-compliance at a UNM construction site. The procedures will be developed and inspections began no later than December 20, 2016.</p>		
<p><b>1.4. Coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area as required in Part I.D.5.a.(iv);</b>                  (iv) The permittee must coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area to ensure that the construction stormwater runoff controls eliminate erosion and maintain sediment on site. Planning documents include, but are not limited to: comprehensive or master plans, subdivision ordinances, general land use plan, zoning code, transportation master plan, specific area plans, such as sector plan, site area plans, corridor plans, or unified development ordinances.</p>	<p>University of New Mexico (UNM) will continue to coordinate all UNM departments who have a role in construction activities at UNM to ensure proper controls are in place to eliminate erosion and reduce the transport of sediment from construction projects that disturb more than 1-acre on campus.</p> <ul style="list-style-type: none"> <li>• Inform UNM contractors of requirements and review necessary documents (i.e., erosion control plan, SWPP/eNOI application and fugitive dust permit) during the Construction Review Process.</li> <li>• SRS and its sister departments will continue to oversee UNM contractors to ensure that they comply with federal law, municipal ordinance and contractual provisions and implementing a Storm water Pollution Prevention Plan (SWPPP).</li> <li>• SRS and its sister departments will continue to review site plans and attend pre-construction review meetings to try to ensure consistency with applicable storm water quality requirements. The plan review must occur prior to construction and focus on construction and post-construction storm water quality measures that address likely impacts and public concerns. Site plan review must include evaluation of opportunities for incorporating green infrastructure (GI).</li> </ul>	<p>UNM will include a summary of regulated construction activities in the Annual Report.</p>	<p>During the reporting period, SRS reviewed project planning and design documents and participated in regular construction project meetings that included construction companies, the Physical Plant (PPD), Planning, Design and Construction (PDC), Parking and Transportation Services (PATS) and other UNM departments. SRS provided input to ensure proper controls are in place to eliminate erosion and reduce the transport of sediment from construction project sites. Examples of projects included the new Physics, Astronomy and Interdisciplinary Science building, the Smith's Plaza, Johnson Center.</p>
<p><b>1.5. Evaluation of GI/LID/Sustainable practices in site plan reviews as required in Part I.D.5.a.(v):</b>                  (v) The site plan review required in Part I.D.5.a.(ii)(d) must include an evaluation of opportunities for use of GI/LID/Sustainable practices and when the opportunity exists, encourage project proponents to</p>	<ul style="list-style-type: none"> <li>• SRS and its sister departments will continue to review site plans and attend pre-construction review meetings to try to ensure consistency with applicable storm water quality requirements. The plan review must occur prior to construction and focus on construction and post-construction storm water quality measures that address</li> </ul>	<p>SRS will include in the Annual Report the number of opportunities to incorporate GI and the number of times GI has actually been incorporated</p>	<p>During the reporting period, SRS reviewed 4 construction projects (A&amp;R parking lot expansion, Physics, Astronomy and Interdisciplinary Science building, Johnson Center and Smith Plaza site plans for opportunities</p>

**Proposed revisions to this SWMP are tracked in red text.**

<p>incorporate such practices into the site design to mimic the pre-development hydrology of the previously undeveloped site. For purposes of this permit, pre-development hydrology shall be met according to Part I.D.5.b of this permit. (consistent with any limitations on that capture). Include a reporting requirement of the number of plans that had opportunities to implement these practices and how many incorporated these practices.</p>	<p>likely impacts and public concerns. Site plan review must include evaluation of opportunities for incorporating green infrastructure (GI).</p>		<p>to incorporate GI. Of these projects, the Smith’s Plaza project incorporated some GI that reduced the amount of impervious surface area to improve infiltration. Thanks to this project, total pervious area of the project site increased from 14,818 SF to 52,122 SF, an increase of 37,304 SF; the combined 100-year peak discharge runoff generated by the site will decrease by from 14.3 CFS to 13 CFS, a decrease of 1.3 CFS; the infiltration rate for the project site will increase from 0.16 in/hr to 0.42 in/hr, and increased of 0.26 in/hr</p>
<p><b>1.6. Enhance the program to include program elements in Part I.D.5.a.(viii) through Part I.D.5.a.(x):</b></p> <p>(viii) The permittee may use storm water educational materials locally developed or provided by the EPA (refer to <a href="http://water.epa.gov/polwaste/npdes/swbmp/index.cfm">http://water.epa.gov/polwaste/npdes/swbmp/index.cfm</a>, <a href="http://www.epa.gov/smartgrowth/parking.htm">http://www.epa.gov/smartgrowth/parking.htm</a>, <a href="http://www.epa.gov/smartgrowth/stormwater.htm">http://www.epa.gov/smartgrowth/stormwater.htm</a>), the NMED, environmental, public interest or trade organizations, and/or other MS4s.</p> <p>(ix) The permittee may develop or update existing construction handbooks (e.g., the COA NPDES Stormwater Management Guidelines for Construction and Industrial Activities Handbook) to be consistent with promulgated construction and development effluent limitation guidelines.</p> <p>(x) The construction site inspections required in Part I.D.5.a.(iii) may be carried out in conjunction with the permittee’s building code inspections using a screening prioritization process.</p>	<ul style="list-style-type: none"> <li>• UNM will utilize its own, or when appropriate, publicly available stormwater educational material to enhance its stormwater program.</li> <li>• Where applicable, UNM will refer to existing local, state and federal construction handbooks and stormwater management guidelines to ensure consistency and compliance with promulgated construction and development effluent limitation guidelines.</li> </ul>	<p>SRS participated in the revision/update of the local “NPDES Storm Water Management Guideline for Construction and Industrial Activities Handbook”. It is now completed.</p> <p>UNM will include an update in its annual report.</p>	<p>UNM has used stormwater educational materials provided by the EPA to enhance its stormwater education training and outreach material. UNM has also created its own stormwater education training and outreach material. Copies of UNM’s education training and outreach material are available upon request.</p>

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<b>1.7. Describe other proposed activities to address the Construction Site Stormwater Runoff Control Measure:</b>	<ul style="list-style-type: none"> <li>No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Construction Site Stormwater Runoff Control Measure.</li> </ul>	Additional proposed activities will be reported in the annual report.	
<b>POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND RE-DEVELOPMENT</b>			
<b>Permit Activity</b>	<b>Proposed Plan</b>	<b>Measurable Goal</b>	
<p><b>2.1. Development of strategies as required in Part I.D.5.b.(ii).(a):</b></p> <p>(ii) The program must include the development, implementation, and enforcement of, at a minimum:</p> <p>(a) Strategies which include a combination of structural and/or non-structural best management practices (BMPs) to control pollutants in stormwater runoff.</p>	<ul style="list-style-type: none"> <li>SRS will work with its sister departments (e.g. PPD, PDC and Parking and Transportation Services) to propose <u>implementation of</u> design review and construction, <u>as well as operation and maintenance</u> procedures to assure <del>that</del> structural and/or non-structural best management practices (BMPs) to control pollutants in stormwater runoff. <del>are incorporated into all new development and re-development for projects disturbing more than 1 acre or for projects disturbing less than 1-acre that are part of a greater than one acre common plan for development of the campus.</del></li> <li>SRS will propose the development of contractual procedures to ensure implementation of UNM's SWMP in UNM development and redevelopment projects.</li> <li>By February 20 2016, SRS will work to develop and adopt design standards, including methodology, to estimate water quality impacts and selection of controls.</li> </ul>	<ul style="list-style-type: none"> <li>Submit draft policies, procedures, guidelines, protocols regarding Storm Water Quality upon completion.</li> <li><del>Provide discussion of education and outreach activities geared toward LID implementation in the Annual Report.</del></li> <li>Submission of cumulative changes in UNM's Storm Water Management Program in the Annual Report.</li> </ul>	<p>The SRS Design guidelines state that for projects disturbing greater than 1 acre of soil or pavement, the designer shall allow space for, or design in, sufficient storm water retention to minimize discharge of sediment laden storm water during construction. For final site design, retain on-site all storm water discharge in excess of natural pre-development discharges for up to a 2-inch rain event or whatever the current CABQ Development Process Manual (DPM) requires. UNM's Stormwater Operations and Maintenance Manual addresses non-structural best management practices (BMPs) to control pollutants in stormwater runoff. UNM is not proposing additional draft policies, procedures, guidelines, protocols regarding Storm Water Quality at this time.</p> <p>Where applicable, UNM will utilize guidance from the April 2002 EPA Manual, <i>Urban Stormwater BMP Performance Monitoring</i>, on how to estimate water quality impacts of BMPs,</p>

			when feasible.
<p><b>2.2. Development of an ordinance or other regulatory mechanism as required in Part I.D.5.b.(ii).(b):</b></p> <p>(b) An ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law. The ordinance or policy must:</p> <p>Incorporate a stormwater quality design standard that manages on-site the 90th percentile storm event discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites, through stormwater controls that infiltrate, evapotranspire the discharge volume, except in instances where full compliance cannot be achieved, as provided in Part I.D.5.b.(v). The stormwater from rooftop discharge may be harvested and used on-site for non-commercial use. Any controls utilizing impoundments that are also used for flood control that are located in areas where the New Mexico Office of the State Engineer requirements at NMAC 19.26.2.15 (see also Section 72-5-32 NMSA) apply must drain within 96 hours unless the state engineer has issued a waiver to the owner of the impoundment.</p> <p>Options to implement the site design standard include, but not limited to: management of the discharge volume achieved by canopy interception, soil amendments, rainfall harvesting, rain tanks and cisterns, engineered infiltration, extended filtration, dry swales, bioretention, roof top disconnections, permeable pavement, porous concrete, permeable pavers, reforestation, grass channels, green roofs and other appropriate techniques, and any combination of</p>	<ul style="list-style-type: none"> <li>SRS will work with its sister departments (PPD, PDC and Parking and Transportation Services etc.) to develop and adopt design standards, policy and enforcement mechanisms for requiring on-site management of 90<sup>th</sup> percentile (0.44-inch) storm events discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites, by December 20 2017.</li> </ul>	<ul style="list-style-type: none"> <li>Submission of finalized policies, procedures, guidelines, protocols regarding Storm Water Quality upon completion of finalized draft.</li> </ul>	<p>The SRS Design guidelines refer to the City of Albuquerque Development Process Manual specifications for stormwater discharge from construction sites.</p>

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<p>these practices, including implementation of other stormwater controls used to reduce pollutants in stormwater (e.g., a water quality facility).</p> <p>Estimation of the 90th or 80th percentile storm event discharge volume is included in EPA Technical Report entitled “Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, EPA Publication Number 832-R-14-007”. Permittees can also estimate:</p> <p>Option A: a site specific 90th or 80th percentile storm event discharge volume using methodology specified in the referenced EPA Technical Report.</p> <p>Option B: a site specific pre-development hydrology and associated storm event discharge volume using methodology specified in the referenced EPA technical Report.</p>			
<p><b>2.3. Implementation and enforcement, via the ordinance or other regulatory mechanism, of site design standards as required in Part I.D.5.b.(ii).(b).</b></p>	<ul style="list-style-type: none"> <li><del>SRS will work with its sister departments to develop and implement monitoring and enforcement mechanisms of UNM design standards and guidelines by December 20, 2018. UNM, unlike municipalities, does not have formal enforcement authority through ordinances. UNM may use contractual mechanisms if necessary, and does regular consultation with contractors, to ensure compliance with UNM design guidelines. Therefore, UNM will not pursue a separate monitoring and enforcement mechanisms of UNM design standards and guidelines.</del></li> </ul>		
<p><b>2.4. Ensure appropriate implementation of structural controls as required in Part I.D.5.b.(ii).(c) and Part I.D.5.b.(ii).(d):</b></p> <p>(d) The permittee must ensure that the post-construction program requirements are constantly reviewed and revised as appropriate to incorporate improvements in control techniques;</p>	<ul style="list-style-type: none"> <li>Once developed, the post construction program requirements will be monitored, reviewed and revised as appropriate by SRS, with input from other departments, on an annual basis. A process will be put in place by June 20, 2017.</li> </ul>	<ul style="list-style-type: none"> <li>In each annual report to EPA, SRS will report any changes/revisions to UNM’s Post-Construction Program.</li> </ul>	<p>UNM’s post construction activities are outlined in UNM’s Stormwater Operations and Maintenance plan. The plan was developed in 2017, and is available upon request. Revisions to the plan will be noted in future annual reports.</p>
<p><b>2.5. Develop procedures as required in Part</b></p>	<ul style="list-style-type: none"> <li>SRS will participate and cooperate in local experts’</li> </ul>	<ul style="list-style-type: none"> <li>Provide discussion of</li> </ul>	<p>SRS is still exploring available</p>

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<p><b>I.D.5.b.(ii).(e), Part I.D.5.b.(ii).(f), Part I.D.5.b.(ii).(g), and Part I.D.5.b.(ii).(h):</b></p> <p>(e) Procedure to develop and implement an educational program for project developers regarding designs to control water quality effects from stormwater, and a training program for plan review staff regarding stormwater standards, site design techniques and controls, including training regarding GI/LID/Sustainability practices. Training may be developed independently or obtained from outside resources, i.e. federal, state, or local experts;</p> <p>(f) Procedures for site inspection and enforcement to ensure proper long-term operation, maintenance, and repair of stormwater management practices that are put into place as part of construction projects/activities. Procedure(s) shall include the requirement that as-built plans be submitted within ninety (90) days of completion of construction projects/activities that include controls designed to manage the stormwater associated with the completed site (post-construction stormwater management). Procedure(s) may include the use of dedicated funds or escrow accounts for development projects or the adoption by the permittee of all privately owned control measures. This may also include the development of maintenance contracts between the owner of the control measure and the permittee. The maintenance contract shall include verification of maintenance practices by the owner, allows the MS4 owner/operator to inspect the maintenance practices, and perform maintenance if inspections indicate neglect by the owner;</p> <p>(g) Procedures to control the discharge of pollutants related to commercial application and distribution of pesticides, herbicides, and fertilizers where permittee(s) hold jurisdiction over lands not directly</p>	<p>combined efforts to refine and present storm water quality educational training for project developers. UNM staff (e.g., PDC, PPD, etc.), including plan reviewers, on construction project teams will receive such training.</p> <ul style="list-style-type: none"> <li>• SRS in conjunction with PPD will inspect campus storm water management and control systems to assure long-term operation, maintenance and repair of storm water management and control systems. <del>SRS will propose policy that requires that construction project teams submit as-built plans for storm water management and control systems within 90 days of construction completion.</del> <u>UNM contractors are already required to submit project as built plans to PDC upon completion. These plans are stored in PDC's database.</u> The number of such inspections will be mentioned in UNM's Annual Reports to EPA. This will be completed by June 20, 2016.</li> <li>• UNM's Integrated Pest Management (IPM) manual applies to UNM campus wide. PPD will review and revise the IPM, provide more IPM related training to employees, seek less toxic and equally less expensive new approaches. SRS will work with PPD to review their protocols for applying herbicides and fertilizers and will work to monitor the use of pesticides, herbicides, and fertilizers.</li> </ul>	<p>education and outreach activities geared toward LID implementation in the Annual Report.</p> <ul style="list-style-type: none"> <li>• Discussion of maintenance and inspections of storm water control features in Annual Report.</li> </ul>	<p>options for presenting storm water quality educational training for project managers.</p> <p>As part of the preventive maintenance program, the UNM Physical Plant inspects stormwater management and control systems to assure long-term operation, maintenance and repair. During the reporting period the Physical Plant inspected and maintained a detention pond located on the SW corner of "G" lot (intersection of University Blvd. and Tucker Rd.). They removed over 30 yards of sediment and did some minor contouring to allow for increased water retention.</p> <p>SRS has developed inspection checklists used to inspect campus storm water management and control systems to assure long-term operation, maintenance and repair of storm water management and control systems. During this reporting period, SRS conducted three (3) inspections: the retention pond located north west of the UNM Child Care Center, the detention ponds behind Domenici Hall and the swales located north of the G parking lot.</p> <p>UNM Golf Course contractors and PPD Grounds and landscaping staff engaged in IPM activities are required to maintain licenses. As</p>
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<p>owned by that entity (e.g., incorporated city). The procedures must ensure that herbicides and pesticides applicators doing business within the permittee's jurisdiction have been properly trained and certified, are encouraged to use the least toxic products, and control use and application rates according to the applicable requirements; and</p> <p>(h) Procedure or system to review and update, as necessary, the existing program to ensure that stormwater controls or management practices for new development and redevelopment projects/activities continue to meet the requirements and objectives of the permit.</p>			<p>part of the licensing process, they receive annual training on IPM. They are also required by the New Mexico Department of Agriculture to maintain detailed logs of herbicide and fertilizer application.</p>
<p><b>2.6. Coordinate internally with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area as required in Part I.D.5.b.(iii)</b></p> <p>(iii) The permittee must coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private new development and redevelopment projects/activities within the permit area to ensure the hydrology associated with new development and redevelopment sites mimic to the extent practicable the pre-development hydrology of the previously undeveloped site, except in instances where the pre-development hydrology requirement conflicts with applicable water rights appropriation requirements. For purposes of this permit, pre-development hydrology shall be met by capturing the 90th percentile storm event runoff (consistent with any limitations on that capture) which under undeveloped natural conditions would be expected to infiltrate or evapotranspire on-site and result in little, if any, off-site runoff. (Note: This permit does not prevent</p>	<ul style="list-style-type: none"> <li>SRS will work with its sister departments (PPD, PDC and Parking and Transportation Services etc) to develop and adopt design standards, policy and enforcement mechanisms for requiring on-site management of 90<sup>th</sup> percentile (0.44-inch) storm events discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites. This will be done by December 2015.</li> </ul>	<ul style="list-style-type: none"> <li>A discussion on UNM's progress in developing and adopting such design standards, policy and enforcement mechanisms will be included in the annual report.</li> </ul>	<p>The SRS Design guidelines refer to the City of Albuquerque Development Process Manual specifications for stormwater discharge from construction sites.</p>

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<p>permittees from requiring additional controls for flood control purposes.) Planning documents include, but are not limited to: comprehensive or master plans, subdivision ordinances, general land use plan, zoning code, transportation master plan, specific area plans, such as sector plan, site area plans, corridor plans, or unified development ordinances.</p>			
<p><b>2.7. As required in Part I.D.5.b.(iv), the permittee must assess all existing codes, ordinances, planning documents and other applicable regulations, for impediments to the use of GI/LID/Sustainable practices:</b>                  (iv) The permittee must assess all existing codes, ordinances, planning documents and other applicable regulations, for impediments to the use of GI/LID/Sustainable practices. The assessment shall include a list of the identified impediments, necessary regulation changes, and recommendations and proposed schedules to incorporate policies and standards to relevant documents and procedures to maximize infiltration, recharge, water harvesting, habitat improvement, and hydrological management of stormwater runoff as allowed under the applicable water rights appropriation requirements. The permittee must develop a report of the assessment findings, which is to be used to provide information to the permittee, of the regulation changes necessary to remove impediments and allow implementation of these practices.</p>	<ul style="list-style-type: none"> <li>SRS will work with PDC, PPD and other departments to assess facility planning and design procedures to identify impediments for the incorporation of GI/LID approaches including infiltration, recharge, water harvesting, habitat improvement and/or hydrological management to improve post-construction storm water quality. This will be completed by June 22, 2016.</li> </ul>	<ul style="list-style-type: none"> <li>An update will provided in the annual report.</li> </ul>	<p>SRS reviewed UNM’s master plan documents and identified three main impediments to implementing GI/LID. Inadequate funding for new or remodel projects, lack of awareness. UNM’s long term planning documents do not prioritize GI and LID.</p>
<p><b>2.8. As required in Part I.D.5.b.(iv), describe the plan to report the assessment findings on GI/LID/Sustainable practices</b></p>	<ul style="list-style-type: none"> <li>Assessment findings will be tracked, recorded and reported in an annual report by March 20, 2017.</li> </ul>		
<p><b>2.9. Estimation of the number of acres of IA and DCIA as required in Part I.D.5.b.(vi):</b>                  (vi) The permittee must estimate the number of acres of impervious area (IA) and directly connected impervious area (DCIA). For the purpose of his part, IA includes conventional pavements, sidewalks,</p>	<ul style="list-style-type: none"> <li>By June 20, 2017, SRS will calculate and update an estimate of acreage of impervious areas (IA) and directly connected impervious areas (DCIA). UNM may report the acreages of IA and DCIA in a tabular format to EPA and describe the methodology used to calculate the acreages.</li> </ul>	<ul style="list-style-type: none"> <li>Estimation of campus IAs and DCIA removed or added in the Annual Report.</li> </ul>	<p>This process has been completed. There are 576.3 acres of impervious area and 681.7 acres of permeable area at UNM. The majority of UNM’s impervious area has a direct hydraulic connection to the MS4, and can</p>

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<p>driveways, roadways, parking lots, and rooftops. DCIA is the portion of IA with a direct hydraulic connection to the permittee’s MS4 or a waterbody via continuous paved surfaces, gutters, pipes, and other impervious features. DCIA typically does not include isolated impervious areas with an indirect hydraulic connection to the MS4 (e.g., swale or detention basin) or that otherwise drain to a pervious area.</p>			<p>therefore be considered DCIA. The assessment report is available upon request.</p>
<p><b>2.10. Inventory and priority ranking as required in section in Part I.D.5.b.(vii):</b></p> <p>(vii) The permittee must develop an inventory and priority ranking of MS4-owned property and infrastructure (including public right-of-way) that may have the potential to be retrofitted with control measures designed to control the frequency, volume, and peak intensity of stormwater discharges to and from its MS4. In determining the potential for retrofitting, the permittee shall consider factors such as the complexity and cost of implementation, public safety, access for maintenance purposes, subsurface geology, depth to water table, proximity to aquifers and subsurface infrastructure including sanitary sewers and septic systems, and opportunities for public use and education under the applicable water right requirements and restrictions. In determining its priority ranking, the permittee shall consider factors such as schedules for planned capital improvements to storm and sanitary sewer infrastructure and paving projects; current storm sewer level of service and control of discharges to impaired waters, streams, and critical receiving water (drinking water supply sources);</p>	<ul style="list-style-type: none"> <li>By June 20, 2018, SRS will complete an inventory and rank campus property and MS4 infrastructure that may have the potential to be retrofitted with control measures to improve storm water quality. Factors such as implementation cost, public safety, maintenance access, geology, depth to groundwater/aquifer, proximity to other infrastructure (e.g., sanitary sewer &amp; septic systems), opportunities for public use and education should be considered in the priority ranking of potential retrofit projects.</li> </ul>	<ul style="list-style-type: none"> <li>An annual report on what retrofitting work has been done will be made beginning in the 2017 Annual Report to the EPA, and such reporting will continue in each subsequent Annual Report to the EPA.</li> </ul>	<p>This process is ongoing. An inventory of UNM’s storm drain system is shown in UNM’s Campus Utility Maps prepared by PPD. In 2015 PPD Engineering hired an engineering firm to do studies. The final reports titled: <u>University of New Mexico Drainage Study: Popejoy Hall and Woodward Lecture Hall Drainage issues</u> and <u>University of New Mexico Drainage Study: Science and math Learning Center Area Drainage issues</u> identify and recommend several LID/BMP options to reduce flow and improve water quality. PPD Grounds and Landscaping has also identified and retrofitted UNM storm drain inlets with smaller size grates to reduce the amount of debris flowing into the storm drains.</p>
<p><b>2.11. Incorporate watershed protection elements as required in Part I.D.5.b.(viii):</b></p> <p>(viii) The permittee must incorporate watershed protection elements into relevant policy and/or planning documents as they come up for regular</p>	<p>By June 20, 2017 SRS will work to research and develop watershed protection measures and propose their incorporation into UNM policy and planning documents as they come up for review for renewal. Such policy and planning documents will include:</p>	<ul style="list-style-type: none"> <li>All new proposed watershed protection measures will be discussed in the annual report.</li> </ul>	<p>UNM’s written Stormwater Operations and Maintenance Plan describes UNM’s stormwater management practices that minimize water quality impacts to streams.</p>

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<p>review. If a relevant planning document is not scheduled for review during the term of this permit, the permittee must identify the elements that cannot be implemented until that document is revised, and provide to EPA and NMED a schedule for incorporation and implementation not to exceed five years from the effective date of this permit. As applicable to each permittee’s MS4 jurisdiction, policy and/or planning documents must include the following:</p> <p>(a) A description of master planning and project planning procedures to control the discharge of pollutants to and from the MS4.</p> <p>(b) Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each watershed, by controlling the unnecessary creation, extension and widening of impervious parking lots, roads and associated development. The permittee may evaluate the need to add impervious surface on a case-by- case basis and seek to identify alternatives that will meet the need without creating the impervious surface.</p> <p>(c) Identify environmentally and ecologically sensitive areas that provide water quality benefits and serve critical watershed functions within the MS4 and ensure requirements to preserve, protect, create and/or restore these areas are developed and implemented during the plan and design phases of projects in these identified areas. These areas may include, but are not limited to critical watersheds, floodplains, and areas with endangered species concerns and historic properties. Stakeholders shall be consulted as appropriate.</p> <p>(d) Implement stormwater management practices that minimize water quality impacts to streams, including disconnecting direct discharges to surface waters from impervious surfaces such as parking lots.</p>	<ul style="list-style-type: none"> <li>• A description of UNM’s master planning and project planning procedures to control the discharge of pollutants into the MS4.</li> <li>• Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within the campus by controlling the creation and expansion of such during development and re-development.</li> <li>• Identify any environmentally or ecologically sensitive areas that provides water quality benefits or serve critical watershed functions. Requirements may be needed to protect such if there is a technical basis to justify the actual existence of any such areas on campus. Inviting stakeholder input may be required for identifying sensitive areas.</li> <li>• No streams exist on campus. Should UNM acquire and develop stream-side property, then measures will be taken to disconnect direct discharge to the stream from impervious areas.</li> <li>• UNM will seek to avoid hydro-modification of arroyos caused by campus development, including roads, etc.</li> <li>• UNM will develop and implement development policies to protect soils, prevent topsoil stripping and soil compaction.</li> <li>• UNM will continue to incorporate watershed protection elements into relevant policy and/or planning documents as they come up for regular review.</li> </ul>		<p>Using resources such as the engineering reports cited earlier in this report and EPA’s <i>Handbook for Developing Watershed Plans to Restore and Protect Our Waters</i> and <i>Community Solutions for Stormwater Management: A Guide for Voluntary Long-Term Planning</i>, SRS has identified watershed protection measures that could be incorporated into UNM’s master planning documents.</p> <p>However, no UNM policy and planning documents came up for review and renewal during the reporting period. Regardless, some watershed protection measures such as minimizing the amount of impervious surfaces, implementing stormwater management practices are already being implemented.</p>
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<p>(e) Implement stormwater management practices that protect and enhance groundwater recharge as allowed under the applicable water rights laws.</p> <p>(f) Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.</p> <p>(g) Develop and implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.</p> <p>(h) The program must be specifically tailored to address local community needs (e.g. protection to drinking water sources, reduction of water quality impacts) and must be designed to attempt to maintain pre-development runoff conditions.</p>			
<p><b>2.12. Enhance the program to include program elements in Part I.D.5.b.(xi) and Part I.D.5.b.(xii):</b>          (xii) When choosing appropriate BMPs, the permittee may participate in locally-based watershed planning efforts, which attempt to involve a diverse group of stakeholders including interested citizens. When developing a program that is consistent with this measure's intent, the permittee may adopt a planning process that identifies the municipality's program goals (e.g., minimize water quality impacts resulting from post-construction runoff from new development and redevelopment), implementation strategies (e.g., adopt a combination of structural and/or non-structural BMPs), operation and maintenance policies and procedures, and enforcement procedures.</p>	<ul style="list-style-type: none"> <li>UNM will continue to participate in locally-based watershed planning efforts, such as the stormwater Technical Advisory Group (TAG) and the Middle Rio Grande Urban Waters Partnership and work to incorporate ideas from these efforts into its Stormwater management program.</li> </ul>		<p>During the reporting period, UNM participated in TAG meetings and discussions with the Middle Rio Grande Urban Waters Partnership.</p>
<p><b>2.13. Describe other proposed activities to address the Post-Construction Stormwater Management in New Development and Redevelopment Measure:</b></p>	<ul style="list-style-type: none"> <li>No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Post Construction Stormwater Management in New Development and Redevelopment Measure.</li> </ul>	<p>Additional proposed activities will be reported in the annual report.</p>	

**POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

Permit Activity	Proposed Plan	Measurable Goal	Status
<p><b>3.1. Develop or update the Pollution Prevention/Good House Keeping program to include the elements in Part I.D.5.c.(i):</b></p> <p>(i) The permittee must develop, revise and implement an operation and maintenance program that includes a training component and the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The program must include:</p> <p>(a) Development and implementation of an employee training program to incorporate pollution prevention and good housekeeping techniques into everyday operations and maintenance activities. The employee training program must be designed to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. The permittee must also develop a tracking procedure and ensure that employee turnover is considered when determining frequency of training;</p> <p>(b) Maintenance activities, maintenance schedules, and long term inspections procedures for structural and non-structural storm water controls to reduce floatable, trash, and other pollutants discharged from the MS4.</p> <p>(c) Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or</p>	<ul style="list-style-type: none"> <li>UNM will continue to implement, review and enhance pollution prevention practices. When possible, UNM will implement new source control procedures to limit the discharge of pollutants from the campus MS4.</li> <li>As required, PPD will implement a) Storm Water Operations &amp; Maintenance (O&amp;M) Program b) grounds and landscaping maintenance; c) road and parking lot operation and maintenance; d) fleet and building maintenance; e) new construction and land disturbance training; f) utility systems maintenance; g) MS4 system maintenance.</li> <li>The UNM O&amp;M program will include training for appropriate UNM staff on improving storm water quality. SRS will include storm water education in the New Employee Orientation and Basic Annual Safety Training that all UNM employees are required to take.</li> <li>PPD's O&amp;M Program maintains: a) an updated list of storm water quality facilities by drainage basin, including location and description; b) a target number of 20 storm water quality facilities will be inspected once every 3 months by PPD and cleaned if necessary (See Table 1); and c) continue PPD's leading source control program of street and hard-scaping sweep and daily (M-F) litter pickup on campus.</li> <li>UNM maintains a Spill Prevention, Countermeasure and Control Plan (SPCCP) to address the risks from oil tanks larger than 55 gallons. UNM takes measures to insure that parties responsible for a spill on campus take</li> </ul>	<ul style="list-style-type: none"> <li>Submission of annual progress included in Annual Report.</li> </ul>	<p>Stormwater Management training was provided to UNM Grounds and Landscaping personnel during the July 1<sup>st</sup> 2016 to June 30<sup>th</sup> 2017 reporting period. No training was offered during this reporting period, but there is training planned for the next reporting cycle.</p> <p>UNM continued implementation of its SPCC Plan during the reporting period.</p> <p>UNM has prepared a written Stormwater Operation and maintenance manual that includes the required elements listed.</p>

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<p>maintenance shops with outdoor storage areas, salt/sand storage locations, snow disposal areas operated by the permittee, and waste transfer stations;</p> <p>(d) Procedures for properly disposing of waste removed from the separate storm sewers and areas listed in Part I.D.5.c.(i).(c) (such as dredge spoil, accumulated sediments, floatables, and other debris); and</p> <p>(e) Procedures to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices. Note: The permittee may use training materials that are available from EPA, NMED, Tribe, or other organizations.</p>	<p>reasonable steps to control and minimize threats to human health and the environment.</p> <ul style="list-style-type: none"> <li>• Potential discharges will be controlled through implementation of spill prevention practices, self-inspections, and employee training. PPD’s O&amp;M Program will also include measures to control the following storm water pollutants: a) de-icing salts; b) roadway debris and roadside vegetation management practices; leaked automotive fluids in equipment maintenance yards; c) debris on hard-scaping (roads, etc.) that can be reduced by modifying street sweeping strategies; and d) targeting problem areas on campus that may have greater pollution potential.</li> </ul>		
<p><b>3.2. Enhance the program to include the elements in Part I.D.5.c.(ii):</b></p> <p>(ii) The Pollution Prevention/Good Housekeeping program must include the following elements:</p> <p>(a) Develop or update the existing list of all stormwater quality facilities by drainage basin, including location and description;</p> <p>(b) Develop or modify existing operational manual for de-icing activities addressing alternate materials and methods to control impacts to stormwater quality;</p> <p>(c) Develop or modify existing program to control pollution in stormwater runoff from equipment and vehicle maintenance yards and maintenance center operations located within the MS4;</p> <p>(d) Develop or modify existing street sweeping program. Assess possible benefits from changing frequency or timing of sweeping activities or utilizing different equipment for sweeping activities;</p>	<p>(See Proposed Plan for Permit Activities listed in 3.1 above). In addition, UNM will do the following:</p> <ul style="list-style-type: none"> <li>• UNM’s O&amp;M program will identify waste disposal standard operating procedures (SOPs), including SOPs for motor vehicle fluids, toxic paints, solvents, fertilizers, pesticides, herbicides and any other hazmat, by June 2017. This will include a list of opportunities for recycling substances. Also, standard operating procedures will address the removal of sediments, debris, floatables and litter including pet wastes.</li> <li>• By June 20, 2017, UNM will re-assess existing flood control infrastructure for the potential to retro-fit it with additional water quality enhancement features.</li> <li>• UNM’s O&amp;M Program maintains: a) an updated list of storm water quality facilities by drainage basin, including location and description; b) a target number of 20 storm water quality facilities shall be inspected once every 3 months by PPD and cleaned if necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Submission of annual progress updates in Annual Report.</li> </ul>	<p>PPD continued routine O&amp;M operations for street sweeping, trash collections, recycling. Disposal of hazardous chemicals and used oils from maintenance shops were done through SRS or other third party vendors.</p> <p>With the exception of a few small detention basins, UNM does not have flood control infrastructure. The flood control infrastructure is owned and operated by the AMAFCA.</p>

<p>(e) A description of procedures used by permittees to target roadway areas most likely to contribute pollutants to and from the MS4 (i.e., runoff discharges directly to sensitive receiving water, roadway receives majority of de-icing material, roadway receives excess litter, roadway receives greater loads of oil and grease);</p> <p>(f) Develop or revise existing standard operating procedures for collection of used motor vehicle fluids (at a minimum oil and antifreeze) and toxics (including paint, solvents, fertilizers, pesticides, herbicides, and other hazardous materials) used in permittee operations or discarded in the MS4, for recycle, reuse, or proper disposal;</p> <p>(g) Develop or revised existing standard operating procedures for the disposal of accumulated sediments, floatables, and other debris collected from the MS4 and during permittee operations to ensure proper disposal;</p> <p>(h) Develop or revised existing litter source control programs to include public awareness campaigns targeting the permittee audience; and</p> <p>(i) Develop or review and revise, as necessary, the criteria, procedures and schedule to evaluate existing flood control devices, structures and drainage ways to assess the potential of retrofitting to provide additional pollutant removal from stormwater. Implement routine review to ensure new and/or innovative practices are implemented where applicable.</p> <p>(j) Enhance inspection and maintenance programs by coordinating with maintenance personnel to ensure that a target number of structures per basin are inspected and maintained per quarter;</p> <p>(k) Enhance the existing program to control the discharge</p>			
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<p>of floatables and trash from the MS4 by implementing source control of floatables in industrial and commercial areas;</p> <p>(l) Include in each annual report, a cumulative summary of retrofit evaluations conducted during the permit term on existing flood control devices, structures and drainage ways to benefit water quality. Update the SWMP to include a schedule (with priorities) for identified retrofit projects;</p> <p>(m) Flood management projects: review and revise, as necessary, technical criteria guidance documents and program for the assessment of water quality impacts and incorporation of water quality controls into future flood control projects. The criteria guidance document must include the following elements:</p> <p>A. Describe how new flood control projects are assessed for water quality impacts.</p> <p>B. Provide citations and descriptions of design standards that ensure water quality controls are incorporated in future flood control projects.</p> <p>C. Include method for permittees to update standards with new and/or innovative practices. D. Describe master planning and project planning procedures and design review procedures.</p> <p>(n) Develop procedures to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied, by the permittee's employees or contractors, to public right-of-ways, parks, and other municipal property. The permittee must provide an updated description of the data monitoring system for all permittee departments utilizing pesticides, herbicides and fertilizers.</p>			
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<p><b>3.3. Develop or update a list and a map of industrial facilities owned or operated by the permittee as required in Part I.D.5.c.(iii):</b></p> <p>(iii) Comply with the requirements included in the EPA Multi Sector General Permit (MSGP) to control runoff from industrial facilities (as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi)) owned or operated by the permittees and ultimately discharge to the MS4. The permittees must develop or update:</p> <p>(a) A list of municipal/permittee operations impacted by this program,</p> <p>(b) A map showing the industrial facilities owned and operated by the MS4,</p> <p>(c) A list of the industrial facilities (other than large construction activities defined as industrial activity) that will be included in the industrial runoff control program by category and by basin. The list must include the permit authorization number or a MSGP NOI ID for each facility as applicable.</p>	<ul style="list-style-type: none"> <li>UNM does not have operations within our campus jurisdiction that would normally be categorized as industrial or that have the potential for high risk runoff.</li> </ul>	<ul style="list-style-type: none"> <li>UNM will submit a certification to EPA to that effect.</li> </ul>	
<p><b>3.4. Describe other proposed activities to address the Pollution Prevention/Good Housekeeping for Municipal/permittee Operations Measure:</b></p>	<ul style="list-style-type: none"> <li>No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Pollution Prevention/Good Housekeeping for Municipal/permittee Operations Measure.</li> </ul>	<ul style="list-style-type: none"> <li>Additional proposed activities will be reported in the annual report.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>

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**INDUSTRIAL AND HIGH RISK RUNOFF**

Permit Activity	Proposed Plan	Measurable Goal
<p><b>4.1. Ordinance (or other control method) as required in Part I.D.5.d.(i):</b>            (i) The permittee must control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi). If no such industrial activities are in a permittees jurisdiction, that permittee may certify that this program element does not apply.</p>	<ul style="list-style-type: none"> <li>UNM does not have operations within our campus jurisdiction that would normally be categorized as industrial or that have the potential for high risk runoff.</li> </ul>	<ul style="list-style-type: none"> <li>UNM will submit a certification to EPA to that effect.</li> </ul>
<p><b>4.2. Continue implementation and enforcement of the Industrial and High Risk Runoff program, assess the overall success of the program, and document both direct and indirect measurements of program effectiveness in the annual report as required in Part I.D.5.d.(ii):</b>            (ii) The permittee must continue implementation and enforcement of the Industrial and High Risk Runoff program, assess the overall success of the program, and document both direct and indirect measurements of program effectiveness in the annual report. The program shall include:</p> <p>(a) A description of a program to identify, monitor, and control pollutants in stormwater discharges to the MS4 from municipal landfills; other treatment, storage, or disposal facilities for municipal waste (e.g. transfer stations, incinerators, etc.); hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittee(s) determines are contributing a substantial pollutant loading to the</p> <p>MS4. (Note: If no such facilities are in a permittees jurisdiction, that</p>		

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<p>permittee may certify that this program element does not apply.); and</p> <p>(b) Priorities and procedures for inspections and establishing and implementing control measures for such discharges.</p>		
<p><b>4.3. Meet the monitoring requirements in Part I.D.5.d.(iii):</b></p> <p>(iii) Permittees must comply with the monitoring requirements specified in Part III.A.4;</p>		
<p><b>4.4. Include requirements in Part I.D.5.d.(iv):</b></p> <p>(iv) The permittee must modify the following as necessary:</p> <p>(a) The list of the facilities included in the program, by category and basin;</p> <p>(b) Schedules and frequency of inspection for listed facilities. Facility inspections may be carried out in conjunction with other municipal programs (e.g. pretreatment inspections of industrial users, health inspections, fire inspections, etc.), but must include random inspections for facilities not normally visited by the municipality;</p> <p>(c) The priorities for inspections and procedures used during inspections (e.g. inspection checklist, review for NPDES permit coverage; review of stormwater pollution prevention plan; etc.); and</p> <p>(d) Monitoring frequency, parameters and entity performing monitoring and analyses (MS4 permittees or subject facility). The monitoring program may include a waiver of monitoring for parameters at individual facilities based on a “no-exposure” certification;</p>		
<p><b>4.5. Enhance the program to include requirements in Part I.D.5.d.(vii):</b></p> <p>(vii) The permittee may:</p> <p>(a) Use analytical monitoring data, on a parameter-by-parameter basis, that a facility has collected to comply with or apply for a State or NPDES discharge permit (other than this permit), so as to avoid unnecessary cost and duplication of effort;</p> <p>(b) Allow the facility to test only one (1) outfall and to report that the</p>		

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<p>quantitative data also apply to the substantially identical outfalls if:</p> <p>A. A Type 1 or Type 2 industrial facility has two (2) or more outfalls with substantially identical effluents, and</p> <p>B. Demonstration by the facility that the stormwater outfalls are substantially identical, using one (1) or all of the following methods for such demonstration. The NPDES Stormwater Sampling Guidance Document (EPA 833-B-92-001), available on EPA’s website at provides detailed guidance on each of the three options: (1) submission of a narrative description and a site map; (2) submission of matrices; or (3) submission of model matrices.</p> <p>(c) Accept a copy of a “no exposure” certification from a facility made to EPA under 40 CFR §122.26(g), in lieu of analytic monitoring.</p>		
<p><b>4.6. Describe other proposed activities to address the Industrial and High Risk Runoff Measure:</b></p>		

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**ILLCIT DISCHARGES AND IMPROPER DISPOSAL**

Permit Activity	Proposed Plan	Measurable Goal	Status
<p>5.1. Mapping as required in Part I.D.5.e.(i)(a);</p> <p>(i) The permittee shall develop, revise, implement, and enforce a program to detect and eliminate illicit discharges (as defined at 40 CFR 122.26(b)(2)) entering the MS4. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The permittee must:</p> <p>(a) Develop, if not already completed, a storm sewer system map, showing the names and locations of all outfalls as well as the names and locations of all waters of the United States that receive discharges from those outfalls. Identify all discharge points into major drainage channels draining more than twenty (20) percent of the MS4 area;</p>	<p>(see Proposed Plan listed for permit Acitivity 5.2 below)</p> <ul style="list-style-type: none"> <li>UNM completed a campus utility map in 2013 which includes its storm sever map. UNM will continue to revise and update its storm sewer system map as necessary..</li> </ul>	<ul style="list-style-type: none"> <li>Updates to the map will be reported in the annual report.</li> </ul>	<p>UNM continued to implement its activities to detect and eliminate illicit discharges, and also revised its written IDDE plan.</p> <p>UNM does not have what would be considered outfalls as defined in Part VII of the permit. UNM has identified discharge points into major drainage channels.</p>
<p><b>5.2. Ordinance (or other control method) as required in Part I.D.5.e.(i)(b):</b></p> <p>(b) To the extent allowable under State, Tribal or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-stormwater discharges into the MS4, and implement appropriate enforcement procedures and actions;</p>	<ul style="list-style-type: none"> <li>To the extent possible, SRS will work with other departments to develop mechanisms to control, non-stormwater discharges into the MS4, and implement appropriate enforcement procedures and actions by June 2017.</li> </ul>		<p>UNM’s Construction Safety Manual and the SRS design guidelines and contractor requirements prohibit non-stormwater discharges into the MS4. UNM has implemented an IDDE program which regulates non-stormwater discharges into the MS4. UNM does not have formal regulatory or enforcement power, but can utilize contractual and employee disciplinary mechanisms to discourage non-stormwater discharges from contractors and employees respectively.</p>
<p><b>5.3. Develop and implement a IDDE plan as required in Part I.D.5.e.(i)(c):</b></p> <p>(c) Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, to the MS4. The permittee must include the following</p>	<ul style="list-style-type: none"> <li>UNM continues to implement efforts to detect and eliminate illicit discharges and improper disposal that may impact the quality of storm water discharged from the campus. IDDE efforts at UNM have historically identified and eliminated at least one non-storm water</li> </ul>	<ul style="list-style-type: none"> <li>SRS will implement an IDDE program on a third of UNM’s MS4 system by 4/1/16 and 100% of the UNM MS4 by 6/20/2017.</li> </ul>	<p>UNM has revised and began implementing its IDDE program.</p>

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<p>elements in the plan:</p> <p>A. Procedures for locating priority areas likely to have illicit discharges including field test for selected pollutant indicators (ammonia, boron, chlorine, color, conductivity, detergents, E. coli, enterococci, total coliform, fluoride, hardness, pH, potassium, conductivity, surfactants), and visually screening outfalls during dry weather;</p> <p>B. Procedures for enforcement, including enforcement escalation procedures for recalcitrant or repeat offenders;</p> <p>C. Procedures for removing the source of the discharge;</p> <p>D. Procedures for program evaluation and assessment; and</p> <p>E. Procedures for coordination with adjacent municipalities and/or state, tribal, or federal regulatory agencies to address situations where investigations indicate the illicit discharge originates outside the MS4 jurisdiction.</p>	<p>discharge to our MS4. SRS Department investigates IDDE problems within 48-hours of being reported. UNM then eliminates illicit discharges or improper disposal on campus within 30 days. If more time is needed then SRS Department develops an elimination schedule within six months.</p> <ul style="list-style-type: none"> <li>In addition, any newly discovered non-storm water discharges will be assessed for their potential impact to the Rio Grande. SRS will review compliance records to check for similar incidents and will prioritize preventing repeat issues by increased awareness. SRS will manage UNM’s IDDE Program and maintain maps applicable to the campus.</li> <li>SRS will check both wet and dry storm water discharges. Initial assessments of storm water quality will occur by visual and olfactory methods. If suspicious water quality conditions are encountered visually, then water quality samples may be tested with field instrumentation, e.g., conductivity, pH, temperature and perhaps dissolved oxygen or turbidity.</li> <li>If visual and field instrumentation assessment is unsatisfactory and other contamination is suspected (e.g., heavier than normal oil sheen), then grab samples may be collected for potentially applicable lab analysis by EPA methods, e.g., TPH, BTEX, E. Coli, nitrates/nitrite, etc.</li> <li>If unusual levels of water quality contaminants are observed, UNM will analyze</li> </ul>	<ul style="list-style-type: none"> <li>If the systematic IDDE process identifies a significant illicit discharge or improper disposal on campus, then that finding and a brief explanation of any potential hazard will be posted on a SRS website page to inform any interested members of the campus or local communities.</li> <li>SRS will incorporate that finding into storm water quality training for the associated UNM staff that can best control the problem.</li> <li><del>SRS will conduct at least visual IDDE assessment during at least one storm per month during the July-August monsoon season for rainfall occurring during normal 9am to 5pm business hours.</del></li> <li><del>SRS will conduct one other visual IDDE assessment during one rainstorm outside of the July-August monsoon season for rainfall occurring during normal 9am to 5pm business hours.</del></li> <li><del>SRS-UNM will conduct one visual IDDE assessment of snow melt during at least one snowstorm occurring during</del></li> </ul>	
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	<p>the above information to try to track back to the source on campus or where up-gradient contamination enters campus. UNM will notify up-gradient MS4 entities if we encounter contamination from their jurisdiction entering campus.</p>	<p><del>normal 9am to 5pm business hours.</del> <u>IDDE screening and inspections will be conducted at the frequency outlined in UNM's written IDDE program and incorporated by reference into this SWMPP.</u></p>	
<p><b>5.4. Develop an education program as required in Part I.D.5.e.(i)(d):</b> (d) Develop an education program to promote, publicize, and facilitate public reporting of illicit connections or discharges, and distribution of outreach materials. The permittee shall inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.</p>	<ul style="list-style-type: none"> <li>By June 20, 2016, SRS will include in its education program, information to promote and facilitate anonymous reporting of illicit connections or discharges by the campus community.</li> </ul>		<p>A written education program has been completed and is incorporated by reference into this SWMPP. Copies are available upon request.</p> <p>The SRS 27/7 Duty Officer pager number is posted on the SRS website.</p>
<p><b>5.5. Establish a hotline as required in Part I.D.5.e.(i)(e):</b> (e) Establish a hotline to address complaints from the public.</p>	<ul style="list-style-type: none"> <li>Complaints from the public can be directed to SRS, which will conduct an investigation or notify the appropriate parties.</li> </ul>	<ul style="list-style-type: none"> <li>Complaints from the public will be tracked, recorded and reported.</li> </ul>	<p>SRS has a 24/7 Duty Officer program where complaints can be reported.</p>
<p><b>5.6. Investigate suspected significant/severe illicit discharges as required in Part I.D.5.e.(i)(f);</b> (f) Investigate suspected significant/severe illicit discharges within forty-eight (48) hours of detection and all other discharges as soon as practicable; elimination of such discharges as expeditiously as possible; and, requirement of immediate cessation of illicit discharges upon confirmation of responsible parties.</p>	<ul style="list-style-type: none"> <li>SRS will investigate all suspected significant/severe illicit discharges within forty-eight (48) hours of detection and all other discharges as soon as practicable; eliminate such discharges as expeditiously as possible; and, require immediate cessation of illicit discharges upon confirmation of responsible parties. A review of the inspection process will be completed by June 20, 2016.</li> </ul>	<ul style="list-style-type: none"> <li>An update will be provided in the annual report.</li> </ul>	<p>A review of the investigation process was completed as part of the updates to the IDDE plan and is included in the IDDE plan. During the reporting period there were no reported suspected significant/severe illicit discharges.</p>
<p><b>5.7. Review complaint records and develop a targeted source reduction program as required in Part I.D.5.e.(i)(g):</b> (g) Review complaint records for the last permit term and develop a targeted source reduction program for those</p>	<ul style="list-style-type: none"> <li>SRS will maintain a log of complaint records from the last permit term and target source reduction efforts to repeat discharge incidents.</li> </ul>	<ul style="list-style-type: none"> <li>An update will be provided in the annual report.</li> </ul>	<p>SRS did not receive any complaints during the reporting period.</p>

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<p>illicit discharge/improper disposal incidents that have occurred more than twice in two (2) or more years from different locations. (Applicable only to class A and B permittees)</p>			
<p><b>5.8. Screening of system as required in Part I.D.5.e.(iii) as follows:</b>          (iii) The permittee must screen the entire jurisdiction at least once every five (5) years and high priority areas at least once every year. High priority areas include any area where there is ongoing evidence of illicit discharges or dumping, or where there are citizen complaints on more than five (5) separate events within twelve (12) months. The permittee must:</p> <p>(a) Include in its SWMP document a description of the means, methods, quality assurance and controls protocols, and schedule for successfully implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis evaluation of data collected.</p> <p>(b) Comply with the dry weather screening program established in Table 6 and the monitoring requirements specified in Part III.A.2.</p> <p>(c) If applicable, implement the priority ranking system develop in previous permit term.</p>	<ul style="list-style-type: none"> <li>The screening will occur as part of the IDDE program by SRS. Screening will be done according to the schedule in the permit.</li> </ul>	<ul style="list-style-type: none"> <li>An update will be provided in the annual report.</li> </ul>	
<p><b>5.9. Develop, update, and implement a Waste Collection Program as required in Part I.D.5.e.(iv):</b>          (iv) Waste Collection Programs: The permittee must develop, update, and implement programs to collect used motor vehicle fluids (at a minimum, oil and antifreeze) for recycle, reuse, or proper disposal, and to collect household hazardous waste materials (including paint, solvents, fertilizers, pesticides, herbicides, and other hazardous materials) for recycle, reuse, or proper disposal. Where available, collection programs operated by third parties may be a component of the programs. Permittees shall enhance these programs by establishing the following</p>	<ul style="list-style-type: none"> <li>PPD's O&amp;M program will identify waste disposal standard operating procedures (SOPs), including SOPs for motor vehicle fluids, toxic paints, solvents, fertilizers, pesticides, herbicides and any other hazmat. This will include a list of opportunities for recycling substances. Also standard operating procedures will address the removal of sediments, debris, floatables and litter including pet wastes. This will be completed by June 20, 2017.</li> </ul>	<ul style="list-style-type: none"> <li>The annual report will include a discussion on any updates to an existing PPD O&amp;M program and SOPs or development of new program and SOPs.</li> </ul>	<p>UNM's Stormwater O&amp;M Program contains a description of waste management operations. PPD continued to operate a waste collection program that includes recycling. SRS continued to operate its hazardous waste collection and disposal program across campus.</p>

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<p>elements as a goal in the SWMP:</p> <p>A. Increasing the frequency of the collection days hosted;</p> <p>B. Expanding the program to include commercial fats, oils and greases; and</p> <p>C. Coordinating program efforts between applicable permittee departments.</p>			
<p><b>5.10. Develop, update and implement a Spill Prevention and Response program to prevent, contain, and respond to spills that may discharge into the MS4 as required in Part I.D.5.e.(v):</b>  (v) Spill Prevention and Response. The permittee must develop, update and implement a program to prevent, contain, and respond to spills that may discharge into the MS4. The permittees must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The Spill Prevention and Response program shall include:</p> <p>(a) Where discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage, the permittee(s) shall take, or insure the party responsible for the spill takes, all reasonable steps to control or prevent any adverse effects to human health or the environment: and</p> <p>(b) The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's municipal jurisdiction.</p>	<ul style="list-style-type: none"> <li>UNM's SRS department has developed and regularly updates spill prevention and response programs, and has staff trained to respond to chemical spills. SRS also has a 27/4 Duty Officer pager number where all spills are reported. A complete review of these programs will be completed by June 20, 2017.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to spills that have the potential to impact water quality will be reported in the annual report.</li> </ul>	<p>SRS maintained a 24/7 spill response team and an on-call spill response contractor. SRS also maintained the 27/7 Duty Officer program through which spills and other emergencies can be reported to SRS personnel.</p> <p>UNM also updated its SPCC plan during the reporting period. The updated plan is available upon request.</p> <p>There were no updates to the spill prevention and response program during the reporting period. During the reporting period, there was no response to spills that have the potential to impact water quality.</p>
<p><b>5.11. Enhance the program to include requirements in Part I.D.5.e.(ix):</b>  (ix) The permittee may:</p> <p>(a) Divide the jurisdiction into assessment areas where monitoring at fewer locations would still provide</p>	<ul style="list-style-type: none"> <li>SRS will look at the different subbasins and where feasible, divide them into different assessment areas. These assessment areas may be ranked in order of priority for screening purposes.</li> </ul>	<ul style="list-style-type: none"> <li>An update on progress will be included in the annual report.</li> </ul>	<p>UNM's IDDE plan has identified locations throughout campus where screening for illicit discharges will take place.</p>

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<p>sufficient information to determine the presence or absence of illicit discharges within the larger area;</p> <p>(b) Downgrade high priority areas after the area has been screened at least once and there are citizen complaints on no more than five (5) separate events within a twelve (12) month period;</p> <p>(c) Rely on a cooperative program with other MS4s for detection and elimination of illicit discharges and illegal dumping;</p> <p>(d) If participating in a cooperative program with other MS4s, required detection program frequencies may be based on the combined jurisdictional area rather than individual jurisdictional areas and may use assessment areas crossing jurisdictional boundaries to reduce total number of screening locations (e.g., a shared single screening location that would provide information on more than one jurisdiction); and</p> <p>(e) After screening a non-high priority area once, adopt an “in response to complaints only” IDDE for that area provided there are citizen complaints on no more than two (2) separate events within a twelve (12) month period.</p> <p>(f) Enhance the program to utilize procedures and methodologies consistent with those described in “Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments.”</p>			
<p><b>5.12. Describe other proposed activities to address the Illicit Discharges and Improper Disposal Measure:</b></p>	<ul style="list-style-type: none"> <li>No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Illicit Discharges and Improper Disposal Measure.</li> </ul>	<ul style="list-style-type: none"> <li>Additional proposed activities will be reported in the annual report.</li> </ul>	

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**CONTROL OF FLOATABLES DISCHARGES**

Permit Activity	Proposed Plan	Measurable Goal	Status
<p><b>6.1. Develop a schedule to implement the program as required in Part I.D.5.f.(i)(a):</b></p> <p>(i) The permittee must develop, update, and implement a program to address and control floatables in discharges into the MS4. The floatables control program shall include source controls and, where necessary, structural controls. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The following elements must be included in the program:</p> <p>(a) Develop a schedule for implementation of the program to control floatables in discharges into the MS4 (Note: AMAFCA and the City of Albuquerque should update the schedule according to the findings of the 2005 AMAFCA/COA Floatable and Gross Pollutant Study and other studies); and</p>	<ul style="list-style-type: none"> <li>• <del>UNM installed water quality inlets in new facilities on the campus to control floatables discharge.</del> Additionally, <del>UNM may have the most intensive litter removal and street and sidewalk sweeping program in the Albuquerque metro area that removes floatables from the campus grounds before they can come into contact with storm water. These activities are continuous.</del></li> <li>• <del>By June 2016 UNM will finalize a schedule to implement new floatable controls in new campus building projects that involve modification of storm water inlets or other MS4 system improvements. Floatable controls will be designed to capture the kinds of floatables present at UNM. UNM's approach is to control floatables at the source. UNM has a robust trash collection system, with a dense network of trash collection stations across campus. UNM may have the most intensive litter removal and street and sidewalk sweeping program in the Albuquerque metro area that removes floatables from the campus grounds before they can come into contact with storm water. These activities are continuous.</del></li> <li>• <del>Furthermore, UNM has installed grates in stormwater inlets across campus to control floatables discharge.</del></li> <li>• PDD will continue to track and report the estimated volume of floatables and trash removed from our control facilities. Beginning in June 2017, PPD will start characterizing the types of floatables removed from control facilities.</li> </ul>	<p>To implement a schedule for implementation of controls <u>of floatables in discharges into the MS4SRS becomes aware of construction projects and as funding is identified.</u></p> <p>Include discussion of volume and type of trash removed in Annual Reports.</p>	<p>UNM grounds and landscaping personnel continued implementing cleaning and maintenance on stormwater inlets that trap floatables and other debris. PPD has identified a list of storm drain inlets that are cleaned at least quarterly. PPD does street sweeping every day and each UNM street is swept on average 2 times a week. The frequency is sweeping reduces in the winter months. The amount of debris collected from street sweeping is still to be determined.</p>

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**WASTE COLLECTION PROGRAMS**

Permit Activity	Proposed Plan	Measurable Goal	
	<ul style="list-style-type: none"> <li>UNM carefully collects and disposes of all wastes that could be hazardous to storm water quality. For instance, the SRS Department picks up and properly disposes of UNM’s hazardous wastes in compliance with RCRA requirements. SRS, PPD and other UNM departments properly manage and dispose of regulated universal wastes and other special wastes. UNM policy UBPP 7780 forbids automotive maintenance activities on campus outside of the fleet and equipment maintenance operations at the PPD Automotive Center. UNM is expanding its waste collection program to include fats, oils and greases. UNM continues to coordinate waste collection efforts amongst departments.</li> </ul>	<ul style="list-style-type: none"> <li><del>Incorporation of Household Hazardous Waste location/schedule information on educational brochures.</del></li> </ul>	
<p><b>6.2. Describe the plan to estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type as required in Part I.D.5.f.(i)(b):</b>            (b) Estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type.</p>	<ul style="list-style-type: none"> <li><del>UNM does not own or operate any major stormwater quality control facilities. PPD recycling will continue to track and report the estimated volume of floatables and trash and recyclable materials removed from our control facilities collected from around campus. Beginning in October 2016, PPD will start characterizing the types of floatables removed from control facilities.</del></li> </ul>	<p>The progress and estimated volume of <del>floatables-trash and recyclable materials</del> will be reported in the annual report.</p>	<p>The volume of trash and recyclable materials for the reporting period is still being determined.</p>
<p><b>6.3. Describe other proposed activities to address the Control of Floatables Discharges Measure:</b></p>	<ul style="list-style-type: none"> <li>No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Control of Floatables Discharges Measure.</li> </ul>	<p>Additional proposed activities will be reported in the annual report.</p>	

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**PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS**

Permit Activity	Proposed Plan	Measurable Goal	
<p><b>7.1. Develop, revise, implement, and maintain an education and outreach program as required in Part I.D.5.g.(i) and Part I.D.5.g.(ii):</b></p> <p>(i) The permittee shall, individually or cooperatively, develop, revise, implement, and maintain a comprehensive stormwater program to educate the community, employees, businesses, and the general public of hazards associated with the illegal discharges and improper disposal of waste and about the impact that stormwater discharges on local waterways, as well as the steps that the public can take to reduce pollutants in stormwater. Permittees previously covered under NMS000101 and NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit.</p> <p>(ii) The permittee must implement a public education program to distribute educational knowledge to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff. The permittee must:</p> <p>(a) Define the goals and objectives of the program based on high priority community-wide issues;</p> <p>(b) Develop or utilize appropriate educational materials, such as printed materials, billboard and mass transit advertisements, signage at select locations, radio advertisements, television advertisements, and websites;</p> <p>(c) Inform individuals and households about ensuring proper septic system maintenance, ensuring the proper use and</p>	<ul style="list-style-type: none"> <li>UNM is actively involved in providing public education and outreach regarding storm water impacts in the Albuquerque area watershed. UNM’s efforts are aimed to educate the public about storm water pollution and how citizens can control the impact of storm water pollution. Some activities that UNM is involved in include: (1) posting storm water information on the SRS Department website; (2) publishing storm water information in the UNM Today, UNM New Minute or The Daily Lobo publications; (3) participating in new faculty orientation and new student orientation; and (4) providing Stormwater training to UNM staff. The information that UNM provides includes the proper handling, disposal and recycling of used motor vehicle fluids, household hazardous wastes, grass clippings, car wash water, use of fertilizers, pesticides and herbicides, oil and toxics on roadways and the steps to report illicit discharges and improper disposal. Further, UNM educates pet owners about proper disposal of pet wastes.</li> <li>UNM’s SRS Department works with PPD to maintain pet waste collection stations on its Main Campus. SRS also educates owners and operators of UNM-related facilities regarding their responsibility to control pollutants in storm water discharges from their property to the MS4 by including storm water pollution prevention training to UNM Building Coordinators and staff. SRS is also including storm water education in its Basic Annual Safety Training required to be taken annually by all UNM employees.</li> </ul>	<ul style="list-style-type: none"> <li>Discussion of additional education and outreach activities performed by UNM staff will be provided in the Annual Reports.</li> <li>Outreach efforts will continue to be summarized in the Annual Reports.</li> </ul>	<p>SRS has developed a written education and outreach program with is incorporated into this SWMPP by reference. During the reporting period, SRS continued to maintain storm drain caps on storm drain inlets across campus with the message “No Dumping, only Rain in the Drain.” SRS participated in “Welcome back days” at the beginning of the UNM academic semester, and handed out fliers with Stormwater education literature.</p> <p>In April 2018, SRS had a booth at the UNM Sustainability Expo on and presented the Rolling River watershed model.</p> <p>In May and June 2018, SRS did separate stormwater runoff P2 presentations to the University Heights Neighborhood Association board, Central United Methodist Church, ABQ Peace &amp; Justice Center, St. Thomas of Canterbury Episcopal Church, First Congregational United Church of Christ. In June 2018, SRS also displayed an</p>

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<p>disposal of landscape and garden chemicals including fertilizers and pesticides, protecting and restoring riparian vegetation, and properly disposing of used motor oil or household hazardous wastes;</p> <p>(d) Inform individuals and groups how to become involved in local stream and beach restoration activities as well as activities that are coordinated by youth service and conservation corps or other citizen groups;</p> <p>(e) Use tailored public education program, using a mix of locally appropriate strategies, to target specific audiences and communities. Examples of strategies include distributing brochures or fact sheets, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs targeted at school age children, and conducting community-based projects such as storm drain stenciling, and watershed cleanups; and</p> <p>(f) Use materials or outreach programs directed toward targeted groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts. For example, providing information to restaurants on the impact of grease clogging storm drains and to garages on the impact of oil discharges. The permittee may tailor the outreach program to address the viewpoints and concerns of all communities, particularly minority and disadvantaged communities, as well as any special concerns relating to children. The permittee must make information available for non-English speaking residents, where appropriate.</p>			<p>educational ad about dog waste collection on television monitors at various UNM locations, including: Johnson Center, Student Union Building, Anderson School of Management, Bookstore, Continuing Education, Dane Smith Hall, College of Education, Centennial Engineering, Libraries, Popejoy Hall, Residence Life &amp; Student Housing.</p>
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<p><b>7.2. Enhance the program to include requirements in Part I.D.5.g.(v) through Part I.D.5.g.(viii):</b></p> <p>(v) Where necessary to comply with the Minimum Control Measures established in Part I.D.5.g.(i) and Part I.D.5.g.(ii), the permittee should develop a program or modify/revise an existing education and outreach program to:</p> <p>(a) Promote, publicize, and facilitate the use of Green Infrastructure (GI)/Low Impact Development (LID)/Sustainability practices; and</p> <p>(b) Include an integrated public education program (including all permittee departments and programs within the MS4) regarding litter reduction, reduction in pesticide/herbicide use, recycling and proper disposal (including yard waste, hazardous waste materials, and used motor vehicle fluids), and GI/LID/Sustainable practices (including xeriscaping, reduced water consumption, water harvesting practices allowed by the New Mexico State Engineer Office).</p> <p>(vi) The permittee may collaborate or partner with other MS4 operators to maximize the program and cost effectiveness of the required outreach.</p> <p>(vii) The education and outreach program may use citizen hotlines as a low-cost strategy to engage the public in illicit discharge surveillance.</p> <p>(viii) The permittee may use stormwater educational materials provided by the State, Tribe, EPA, environmental, public interest or trade organizations, or other MS4s. The permittee may also integrate the education and outreach program with existing education and outreach programs in the Middle Rio Grande area. Example of existing programs include:</p>			

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<p>(a) Classroom education on stormwater;</p> <p>A. Develop watershed map to help students visualize area impacted. B. Develop pet-specific education</p> <p>(b) Establish a water committee/advisor group;</p> <p>(c) Contribute and participate in Stormwater Quality Team;</p> <p>(d) Education/outreach for commercial activities;</p> <p>(e) Hold regular employee trainings with industry groups</p> <p>(f) Education of lawn and garden activities; (g) Education on sustainable practices;</p> <p>(h) Education/outreach of pet waste management;</p> <p>(i) Education on the proper disposal of household hazardous waste;</p> <p>(j) Education/outreach programs aimed at minority and disadvantaged communities and children;</p> <p>(k) Education/outreach of trash management;</p> <p>(l) Education/outreach in public events;</p> <p>A. Participate in local events—brochures, posters, etc.</p> <p>B. Participate in regional events (i.e., State Fair, Balloon Fiesta).</p> <p>(m) Education/outreach using the media (e.g. publish local newsletters);</p> <p>(n) Education/outreach on water conservation practices designed to reduce pollutants in storm water for home residences.</p> <p><b>7.3. Describe other proposed activities to address the Public Education and Outreach on Stormwater</b></p>			
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<b>Impacts Measure:</b>			
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**PUBLIC INVOLVEMENT AND PARTICIPATION**

Permit Activity	Proposed Plan	Measurable Goal	Status
<p><b>8.1. Develop (or update), implement, and maintain a public involvement and participation plan as required in Part I.D.5.h.(ii) and Part I.D.5.h.(iii):</b></p> <p>(ii) The permittee shall develop, revise, implement and maintain a plan to encourage public involvement and provide opportunities for participation in the review, modification and implementation of the SWMP; develop and implement a process by which public comments to the plan are received and reviewed by the person(s) responsible for the SWMP; and, make the SWMP available to the public and to the operator of any MS4 or Tribal authority receiving discharges from the MS4. Permittee previously covered under NMS000101 or NMR040000 must continue existing public involvement and participation programs while updating those programs, as necessary, to comply with the requirements of this permit.</p> <p>(iii) The plan required in Part I.D.5.h.(ii) shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The permittee must include the following elements in the plan:</p> <p>(a) A detailed description of the general plan for informing the public of involvement and participation opportunities, including types of activities; target audiences; how interested parties may access the SWMP; and how the public was involved in development of the SWMP;</p> <p>(b) The development and implementation of at least one (1) assessment of public behavioral change following a public education and/or participation event;</p>	<ul style="list-style-type: none"> <li>• UNM continues to welcome public participation in its SWMP. The SRS Department continues involving other UNM departments, e.g., PPD, OCP, etc., as stakeholders in the development and revision of UNM’s SWMP. UNM also participates in local Albuquerque area public forums where active public involvement occurs, e.g., the Technical Advisory Group on Stormwater issues.</li> <li>• SRS Department regularly trains and updates other UNM Departments about storm water issues and solicits input and participation. In 2015, SRS provided a presentation at the Loss Prevention &amp; Control Safety Committee Meeting to insure that all UNM stakeholders are aware of the SWMP and its requirements.</li> </ul>	<p>Discussion of public input and their comments will be provided in the Annual Report.</p>	<p>UNM requested public participation in its SWMP. The SRS Department continues involving other UNM departments, e.g., PPD, OCP, etc., as stakeholders in the development and revision of UNM’s SWMP. SRS also participated in local Albuquerque area public forums where active public involvement occurs, e.g., the Technical Advisory Group on Stormwater issues.</p>

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<p>(c) A process to solicit involvement by environmental groups, environmental justice communities, civic organizations or other neighborhoods/organizations interested in water quality-related issues, including but not limited to the Middle Rio Grande Water Quality Work Group, the Middle Rio Grande Bosque Initiative, the Middle Rio Grande Endangered Species Act Collaborative Program, the Middle Rio Grande-Albuquerque Reach Watershed Group, the Pueblos of Santa Ana, Sandia and Isleta, Albuquerque Bernalillo County Water Utility Authority, UNM Colleges and Schools, and Chartered Student Organizations; and</p> <p>(d) An evaluation of opportunities to utilize volunteers for stormwater pollution prevention activities and awareness throughout the area.</p>			
<p><b>8.2. Describe the plan to comply with State, Tribal, and local notice requirements when implementing a Public Involvement and Participation Program as required in Part I.D.5.h.(iv):</b></p> <p>(iv) The permittee shall comply with State, Tribal and local public notice requirements when implementing a public involvement/ participation program.</p>	<ul style="list-style-type: none"> <li>• UNM provided public notice of its plan to submit a NOI and SWMP to the EPA. The notice was published in the Albuquerque Journal. The draft NOI and SWMP were published on the SRS website, with copies available at the Zimmerman Library, and the public was allowed 30 days to submit written comments.</li> </ul>		
<p><b>8.3. Describe a plan to include elements as required in Part I.D.5.h.(v):</b></p> <p>(v) The public participation process must reach out to all economic and ethnic groups. Opportunities for members of the public to participate in program development and implementation include serving as citizen representatives on a local stormwater management panel, attending public hearings, working as citizen volunteers to educate other individuals about the program, assisting in program coordination with other pre- existing programs, or participating in volunteer monitoring efforts.</p>			
<p><b>8.4. As required in Part I.D.5.h.(viii) provide the internet site (or website) where the SWMP document, Annual Reports, and other documents will be available to</b></p>	<p>SRS will publish UNM’s SWMP and Annual Reports on its website and provide a forum to seek and address input from the public.</p>		

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<p><b>the public:</b></p> <p>(viii) The permittee must provide public accessibility of the Storm Water Management Program (SWMP) document and Annual Reports online via the Internet and during normal business hours at the MS4 operator’s main office, a local library, posting on the internet and/or other readily accessible location for public inspection and copying consistent with any applicable federal, state, tribal, or local open records requirements. Upon a showing of significant public interest, the MS4 operator is encouraged to hold a public meeting (or include in the agenda of in a regularly scheduled city council meeting, etc.) on the NOI, SWMP, and Annual Reports. (See Part III B)</p>			
<p><b>8.5. Enhance the program to include requirements in Part I.D.5.h.(ix):</b></p> <p>(ix) The permittee may integrate the public Involvement and participation program with existing education and outreach programs in the Middle Rio Grande area. Example of existing programs include: Adopt-A- Stream Programs; Attitude Surveys; Community Hotlines ( e.g. establishment of a “311”-type number and system established to handle storm-water-related concerns, setting up a public tracking/reporting system, using phones and social media); Revegetation Programs; Storm Drain Stenciling Programs; Stream cleanup and Monitoring program/events.</p>			
<p><b>8.6. Describe other proposed activities to address the Public Involvement and Participation Measure:</b></p>			

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**DISCHARGES TO IMPAIRED WATERS**

Permit Activity	Proposed Plan	Measurable Goal	Status
<p><b>2.b)</b> The permittee shall control the discharges of pollutant(s) of concern to impaired waters and waters with approved TMDLs as provided in sections (i) and (ii) below, and shall assess the success in controlling those pollutants.</p> <p><b>(i) Discharges to Water Quality Impaired Water Bodies with an Approved TMDL</b> If the permittee discharges to an impaired water body with an approved TMDL (see Appendix B of permit), where stormwater has the potential to cause or contribute to the impairment, the permittee shall include in the SWMP controls targeting the pollutant(s) of concern along with any additional or modified controls required in the TMDL and this section. The SWMP and required annual reports must include information on implementing any focused controls required to reduce the pollutant(s) of concern.</p> <p><b>(ii) Discharges Directly to Water Quality Impaired Water Bodies without an Approved TMDL:</b> The permittee shall also determine whether the permitted discharge is directly to one or more water quality impaired water bodies where a TMDL has not yet been approved by NMED and EPA. If the permittee discharges directly into an impaired water body without an approved TMDL, the permittee shall perform certain activities (see permit for full description of such activities).</p>	<p>UNM continues to implement practices that reduce bacterial contamination of storm water. Most of these practices have multi-purpose benefits in addition to storm water pollution prevention and bacterial reduction. These ongoing practices involve the structural best management practices (BMPs) in the operation of our facilities and grounds as well as our public education and outreach efforts. The following describes UNM’s program to minimize contamination of storm water.</p> <p>UNM is aware of the bacterial source tracking study in the local Middle Rio Grande watershed which identified the various source animal enteric bacteria contributions. The study indicated that birds contributed the most at roughly a third of the bacteria loading. Dogs were the second largest source. Therefore, UNM’s efforts have been focused on controlling bird and dog waste impacts on storm water.</p> <ul style="list-style-type: none"> <li>a) <b>Dog Poop Stations</b> - UNM’s campus is open to the public and people do walk their dogs on campus. This activity is centered around the green spaces, e.g., the Duck Pond on the Central Campus and Golf Course on North Campus. PPD has installed and maintains dog poop disposal bag dispensers on the east and west sides of the Duck Pond area. The North Campus Neighborhood Association has been stocking shopping bags for similar purposes on the southeast corner of the North Golf Course where many folks begin on the perimeter jogging trail. This is also a notable example of public involvement with storm water pollution prevention on campus.</li> <li>b) <b>Bird Controls</b> - UNM continues bird control efforts, especially related to roosting pigeons on UNM buildings. Bird control efforts range from netting at Coronado dormitory trash storage area, equipment bird skirting at the Business Center and bird control wires on the Electrical Engineering &amp; Computer Engineering building window sills. UNM also has an ongoing trapping program that captures hundreds of pigeons a year on many campus roof tops or wherever there may be a roosting problem.</li> <li>c) <b>Street and Sidewalk Sweeping</b> - UNM makes a great effort to keep the campus grounds beautiful. PPD efforts include regular street sweeping and sidewalk sweeping. UNM’s street sweeping schedule may be among the most frequent in the metro area, and</li> </ul>	<p>Submission of water quality monitoring results in DMRs and Annual Reports. <del>UNM relies upon the COA and USGS work pursuant to an existing MOU Agreement, until this MOU is replaced by a new cooperative monitoring program agreement. WLA to be submitted with annual report.</del></p>	<p>UNM entered into a monitoring cooperative and signed an intergovernmental agreement with several agencies during the reporting cycle. It also provided the EPA a monitoring plan and certification to start monitoring stormwater. Monitoring results (DMRs) will be reported by one of the co-permittees (AMAFCA) on behalf of the cooperative.</p>

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	<p>this serves to protect storm water quality from contaminants, including bacteria laden animal wastes on hard-scaping.</p> <p>d) <b>Trash &amp; Litter Controls</b> -The local bacterial tracking study also indicated that humans are one of the smaller sources of bacterial contamination to storm water. In addition to the homeless population in the metro area that may not be using bathrooms, it was recognized that leaking trash dumpsters and compactors may contribute to some of the human contamination. Therefore, lids are installed and kept closed on UNM's large trash dumpsters to keep storm water out. The multitude of small trash receptacles along campus sidewalks, at building entrances, etc. are also always lined with trash bags and usually topped with lids that allow trash in and keep it inside. Bagging and lids also prevent wind from blowing trash out of dumpsters and receptacles.</p> <p>e) <b>Leaked Fluid</b>-If trash compactors leak fluids, the standard practice at UNM is to absorb the leaked fluids and dispose of the absorbent with the other solid waste. Litter is picked up daily, Monday through Friday, all over campus and is disposed of properly with other solid wastes. Litter pickup includes scooping visible dog poop as well as floatables/litter. UNM notifies the COA about problems with pet wastes being left from occupants of neighboring apartment complexes who bring their dogs onto campus property to defecate.</p> <p>f) <b>Storm water Retention Ponds</b> - UNM has a few storm water retention ponds on the South Campus and on the North Campus. In addition to reducing peak flow into the local MS4, these ponds act to settle out suspended solids and expose bacteria to solar UV radiation. Solar UV disinfection and settling out suspended solids both help to reduce bacteria levels in storm water discharged from campus.</p> <p>g) <b>Public Education and Outreach &amp; Campus Training</b> - Storm water pollution prevention training and test questions will become part of UNM's Mandatory Basic Annual Safety Training (BAST) program for all UNM employees. Additionally, UNM's Safety &amp; Risk Services (SRS) department conducts specialized storm water pollution prevention training to PPD employees. SRS's specialized training includes an emphasis on pet waste pickup and measures to minimize bacterial, nutrient and sediment contamination. At UNM's Welcome Back Days event at the beginning of each</p>		
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<p>semester, SRS has had booths with handouts on storm water pollution prevention including pet wastes and measures to minimize bacterial contamination. SRS's website also has information on storm water pollution prevention including pet wastes and measures to minimize bacterial contamination.</p> <p>UNM continues to operate pursuant to the COA bacterial program as necessary for consistency with the new E-Coli TMDL. UNM, as a Phase 1 MS4 participant in a cooperative monitoring program with the COA, AMAFCA and New Mexico Department of Transportation continues to pay a share of the monitoring costs for storm water monitoring work. UNM remains involved in the decisions and reports that this monitoring cooperative generates until such time when a new monitoring cooperative is formed. UNM will calculate WLA for impaired waters and may coordinate efforts with other watershed permittees.</p>		
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**WET WEATHER MONITORING**

Permit Activity	Proposed Plan	Measurable Goal	Status
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<p>As described in Part III, A.1, permittees shall conduct wet weather monitoring to gather information on the response of receiving waters to wet weather discharges from the MS4 during both wet season (July 1 through October 31) and dry Season (November 1 through June 30).</p> <p>Wet Weather Monitoring shall be conducted at outfalls, internal sampling stations, and/or in-stream monitoring locations at each water of the US that runs in each entity or entities' jurisdiction(s).</p> <p>Permittees may choose either Option A (individual monitoring) or Option B (coopererative monitoring program). As described in Part III A.1.b:</p> <p>Coopererative monitoring program will monitor waters coming into the watershed (upstream) and leaving the watershed (downstream).</p> <p>Include sampling for TSS, TDS, COD, BOD5, DO, oil and grease, E.coli, pH, total kjeldahl nitrogen, nitrate plus nitrite, dissolved phosphorus, total ammonia plus organic nitrogen, total phosphorus, PCBs and Gross alpha.</p> <p>Monitoring for temperature at outfalls and/or Rio Grande monitoring locations.</p> <p>Include additional parameters from monitoring conducted under permits NMS000101, NMR040000 or/and NMR04000I whose mean values are at or above a WQS.</p> <p>Sample the pollutants for a minimum of 7 storm events per location during the permit term with at least 3 events wet season and 2 events in dry season.</p>	<p>All discharges during a storm event are collected at outfall locations.</p> <ul style="list-style-type: none"> <li>• UNM and its current MS4 partners have hired the USGS to perform sample collection at 5 representative outfall locations. If new wet weather monitoring sites are installed, certification that they are operational, and actual monitoring at these sites will be provided by April 15, 2016. A detailed description of the monitoring scheme will be submitted for EPA and NMED approval by December 2015. Samples will be analyzed for all of the parameters in Part III A.1.b according to the schedule in Part III A.1.b for wet weather.</li> <li>• Composite samples are collected using an automated ISCO sampling device. Grab samples are collected by USGS personnel. Temperature probes continuously record air and water temperatures. Sondes are used to monitor D.O., water temperature, and conductivity.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide results of the assessment in each annual report.</li> </ul>	<p>UNM entered into a monitoring cooperative and signed an intergovernmental agreement with several agencies during the reporting cycle. It also provided the EPA a monitoring plan and certification to start monitoring stormwater. Monitoring results (DMRs) will be reported by one of the co-permittees (AMAFCA) on behalf of the cooperative.</p>
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**DRY WEATHER DISCHARGE SCREENING OF MS4**

Permit Activity	Proposed Plan	Measurable Goal	Status
<p>As described in part III.A.2, permittee shall:</p> <p>Identify, investigate, and address areas within its jurisdiction that may be contributing excessive levels of pollutants to the Municipal Separate Storm Sewer System as a result of dry weather discharges (i.e., discharges from separate storm sewers that occur without the direct influence of runoff from storm events, e.g. illicit discharges, allowable non-stormwater, groundwater infiltration, etc.). Due to the arid and semi-arid conditions of the area, the dry weather discharges screening program may be carried out during both wet season (July 1 through October 31) and dry Season (November 1 through June 30). This program may be coordinated with the illicit discharge detection and elimination program required in Part I.D.5.e.</p> <p>Include sufficient screening points to adequately assess pollutant levels from all areas of the MS4.</p> <p>Screen for, at a minimum, BOD5, sediment or a parameter addressing sediment (e.g., TSS or turbidity), <i>E. coli</i>, Oil and Grease, nutrients, any pollutant that has been identified as cause of impairment of a waterbody receiving discharges from that portion of the MS4, including temperature.</p> <p>Specify the sampling and non-sampling techniques to be issued for initial screening and follow-up purposes. Sample collection and analysis need not conform to the requirements of 40 CFR Part 136; and</p> <p>Perform monitoring only when an antecedent dry period of at least seventy-two (72) hours after a rain event greater than 0.1 inch in magnitude is satisfied.</p>	<ul style="list-style-type: none"> <li>There are no perennial streams in the Albuquerque Metropolitan area. As such, the dry weather screening program serves a dual purpose as an illicit discharge screening analysis. Seventeen locations, which screen 100% of the MS4 and target industrial areas, have been chosen. Should any discharge be present in a quantity sufficient for analysis, it will be screened for BOD5, sediment or a parameter addressing sediment (e.g., TSS or turbidity), <i>E. coli</i>, Oil and Grease, and nutrients. Any discharge collected will be a grab sample.</li> </ul>	<ul style="list-style-type: none"> <li>Provide results of the assessment in each annual report.</li> </ul>	<p>UNM entered into a monitoring cooperative and signed an intergovernmental agreement with several agencies during the reporting cycle. It also provided the EPA a monitoring plan and certification to start monitoring stormwater. Monitoring results (DMRs) will be reported by one of the co-permittees (AMAFCA) on behalf of the cooperative. Dry weather screening at UNM is done as part of the IDDE.</p>

Proposed revisions to this SWMP are tracked in red text.

Table 1

**UNM Storm Drain Inlets for Quarterly Maintenance and Measurement Operations**

<u>Inlet #</u>	<u>LOCATION</u>
1.	West of Centennial Engineering (Bldg.122) in roadway along West Curb line
2.	West of Hibben Center (Bldg. 15) in bump out on West side of road (2-inlets)
3.	North of Zimmerman (Bldg. 53) in parking lot
4.	Walkway east of Zimmerman (Bldg. 53) and East of Collage of Education (Bldg. 57)
5.	SE of Hokona Zia (Bldg. 58) in Redondo Way
6.	NE of Simpson Hall (Bldg. 66) in Redondo Way
7.	South of Santa Clara (Bldg. 61) in Redondo Way
8.	North of SRC Commons (Bldg. 88)
9.	NE of Mesa Vista (Bldg. 56) at Area 3
10.	South side of Duck Pond
11.	SE side of Scholes Hall (Bldg. 10)
12.	SW of Chapel (Bldg. 25)
13.	East of Bandelier Hall East (Bldg. 8) at Rose Garden
14.	North side of EECE (Bldg. 46) in south end of parking lot
15.	NW of Ford Utilities (Bldg. 116) in parking lot
16.	SW corner of Novitski Hall (Bldg. 249) in SW corner of south parking lot
17.	South side Of HSSB (Bldg. 266) in walkway
18.	NW of HSSB (Bldg. 266) in lawn area
19.	NW of Novitski Hall (Bldg. 249) in SE corner of north parking lot (2-inlets)
20.	NW of Observatory (Bldg. 208) in NW corner of parking lot.

Created by PPD

Version Date: Sept. 1, 2012

# SAFETY & RISK SERVICES CONSTRUCTION SITE MANAGEMENT AND INSPECTION PROGRAM

## INTRODUCTION:

In compliance with provisions of the Clean Water Act, construction activities that will disturb one or more acres of land or will disturb less than one acre of land but are part of a common plan of development or sale that will ultimately disturb one or more acres of land, prior to commencing construction activities, are required to submit a Notice of Intent (NOI) to the EPA and to prepare and comply with a Stormwater Pollution Prevention Plan (SWPPP). Construction activities that will disturb less than one acre of land are not required to submit a NOI. However, the University of New Mexico (UNM) requires that such projects develop a SWPPP specific to the construction site and adhere to the SRS Contractor Requirements with regards to stormwater pollution control.

## PURPOSE

1. Standardize procedures for conducting, documenting and tracking inspections, for stormwater compliance at UNM construction sites.
2. Establish which personnel are responsible for performing and documenting and tracking stormwater compliance inspections.
3. Establish areas of responsibility when it comes to compliance with UNM's NPDES permit as it relates to construction sites.

## SCOPE

- Construction sites with disturbed area less than one acre.
- Construction sites with disturbed area greater than one acre.

## DEFINITIONS

**Best Management Practices (BMPs)** means activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Storm Water Pollution Prevention Plan** is a written plan that documents the selection and implementation of BMPs for a particular facility or construction project.

## RESPONSIBILITIES

### UNM Project Managers

- Include SWPPP specifications in contractor bids and contracts. Ensures the contractors develop and submit for their approval a site specific SWPPP.
- Provide a copy of the SWPPP to SRS for review
- Ensure that contractor complies with the SWPPP

### Safety & Risk Services Department

- Review contractor SWPPP and report discrepancies to the Project Manager.
- Inspect construction sites to ensure compliance with SWPPP and environmental laws and regulations.
- Report discrepancies to the UNM Project Manager.

### Contractor

- Develop a site specific SWPPP
- Develop and implement strategies which include a combination of structural and/or nonstructural BMPs.
- Develop and incorporate post construction BMPs into the project.
- Perform ongoing storm water pollution prevention inspections throughout the period of construction.
- Take corrective action whenever necessary to prevent storm water or other runoff from the construction site into the stormwater system or gutters and culverts leading to that system.

## CONSTRUCTION SITE INSPECTIONS/DOCUMENTATION

The Safety & Risk Services Department is responsible for completing construction site inspections and follow-up inspections.

## **SAFETY & RISK SERVICES CONSTRUCTION SITE MANAGEMENT AND INSPECTION PROGRAM**

- Use the attached Storm water Compliance Inspection checklist.
- Take photos of identified deficiencies.
- Email a PDF copy of the completed inspection checklist and photos to the UNM Project Manager and request that any deficiencies be addressed immediately.

### **Frequency of inspections:**

- Conduct inspections at least monthly, and within 24 hours of a storm event.
- Consider current and past SWPPP compliance. If there is a history of noncompliance then the site will be inspected more frequently until compliance is met.
- Conduct routine inspections during construction activity (at the minimum frequency identified above). Use the first section of the inspection checklist.
- Conduct a final inspection of the site once the contractor has completed the project, or where applicable, when contractor has filed a Notice of Termination (NOT) with the EPA. Use the second section of the inspection checklist.

### **INSPECTION LOG**

Update the inspection log after each inspection. The inspection log should include a list of construction sites, scheduled inspection dates, and other SWPPP related information. All construction sites are to be included in the log. The inspection log is attached.

Priority construction sites are identified using the following criteria:

- Current and past SWPPP compliance.
  1. If owner operator has a history of negligence then the site will be inspected more frequently until compliance is met
- Sites greater than 1 acre and sites where there is active construction during monsoon season and during high wind season should be given priority.

### **ENFORCEMENT ACTION**

The UNM project manager is responsible for enforcement. They can seek damages or withhold payment to contractors.

### **DOCUMENTATION**

- SRS personnel conducting inspections are responsible for updating the SWPPP Inspection log and for storing all SWPPP inspection reports, photos and other documentation electronically on the SRS share drive.
- Records of inspections and enforcement shall be kept for 5 years or until construction is completed, whichever is longer.

**UNIVERSITY OF NEW MEXICO STORM WATER COMPLIANCE INSPECTION CHECKLIST**

<b>PROJECT NAME:</b>				
<b>STORM WATER COMPLIANCE INSPECTION – DURING CONSTRUCTION</b>				
		<b>YES</b>	<b>NO</b>	<b>NA</b>
1	The contractor has posted the EPA Permit or the Notice of Intent form and the name of the site contact person at the entrance to the construction site.			
2	The contractor has provided a copy of the completed Notice of Intent and the Storm Water Pollution Prevention Plan (SWP3) to UNM.			
3	An up to date copy of the SWP3 is available on site.			
4	The Contractor has adhered to the sequence of soil disturbance activities identified in the SWP3.			
5	The Contractor has been instructed in the emergency procedures to follow in the event of a hazardous material release, if required.			
6	The Contractor has recorded the dates of major construction activities involving grading, stabilization, and work suspension.			
7	The Contractor has scheduled inspections of storm water control measures and discharge points; and the inspections are being performed by qualified personnel at the frequency stated in the SWP3.			
8	The Contractor has filed completed, signed inspection reports with the SWP3 that identify the dates of inspection, weather conditions, findings, and corrective actions.			
9	When an inspection reveals a requirement to amend the SWP3, the Contractor revises the SWP3 and provides the amended SWP3 to UNM within seven days.			
<b>Site Checks:</b>				
10	Have disturbed areas been stabilized?			
11	Are storm drains protected?			
12	Are material stockpiles stabilized or isolated?			
13	Is sediment or debris visible at drains or discharge locations?			
14	Has sediment or loose gravel from the site entrance gotten on the street?			
15	Are any oils or chemicals stored near storm drains, discharge locations, or surface waters?			
16	Are runoff control measures (filter fabric, hay bales, silt fencing, etc.) being adequately maintained?			
17	Are any sediment ponds / traps silted to 1/4 capacity or more?			
Additional Comments / Observations:				
Inspector's Name:				
Inspection Date/Time:				
Weather Conditions:				
Inspector's Signature:				

**UNIVERSITY OF NEW MEXICO STORM WATER COMPLIANCE INSPECTION CHECKLIST**

<b>STORM WATER COMPLIANCE INSPECTION – POST CONSTRUCTION FINAL</b>				
		<b>YES</b>	<b>NO</b>	<b>NA</b>
18	Contractor has completed all soil disturbing activities at the site.			
19	All storm water discharges associated with construction activity have been eliminated.			
20	The Contractor has removed all temporary erosion and sediment control measures, or will provide for their removal at the appropriate time as identified in the SWP3.			
21	The Contractor has achieved final stabilization of all areas of the construction site for which he is responsible, where soil disturbing activities have been performed.			
22	Contractor has completed and submitted a Notice of Termination (NOT) to EPA within 30 days after:			
a	Final stabilization of all portions of the site for which the Contractor is responsible; or			
b	Another Operator has assumed control of all areas of the site that have not been finally stabilized; or			
c	Coverage under an alternate NPDES permit has been obtained.			
23	The Contractor has provided a copy of the Notice of Termination to UNM			
Additional Comments / Observations:				
Inspector's Name:				
Inspection Date/Time:				
Weather Conditions: Overcast.				
Inspector's Signature:				



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## MEMORANDUM

**DATE:** July 3, 2018

**TO:** Jerry Lovato, PE, AMAFCA  
Patrick Chavez, PE, AMAFCA

**FROM:** Craig Hoover, PE *CH*  
Sarah Ganley, PE *SG*

**SUBJECT:** **CMC Wet Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting FY 2018 Dry Season (November 1, 2017 to June 30, 2018) Task 28 Memo**

### Notification of In-Stream Water Quality Exceedances

No CMC samples were able to be collected in the FY 2018 dry season (November 1, 2017 to June 30, 2018). Therefore, there are no in-stream water quality exceedances to report for the Compliance Monitoring Cooperative (CMC) monitoring program.

### Overview of Stormwater Monitoring Activity

Bohannon Huston, Inc. (BHI) has been tasked to perform water quality services for the CMC Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2018 (July 1, 2017 to June 30, 2018). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is being conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this on-call task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

As identified in the CMC Monitoring Plan, the WSB MS4 Permit requires a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 3 with at least three (3) events in the wet season and two (2) events in the dry season. Four (4) samples were collected in FY 2017 toward the WSB MS4 Permit requirements – three (3) in the wet season and one (1) in the dry season. In addition, two (2) samples were collected during the FY 2018 wet season (July 1, 2017 to October 31, 2017); reporting for these samples is in the February 2, 2018, CMC Wet Season, Wet Weather Stormwater Monitoring Memo. No CMC samples were able to be collected in the FY 2018 dry season (November 1, 2017 to June 30, 2018). Therefore, one (1) dry season storm event remains to be sampled by the CMC

to meet WSB MS4 Permit requirements. The CMC samples obtained to date are summarized in Table 1 below:

**Table 1: CMC Sample Summary  
 Compared to WSB MS4 Requirements**

No. of Storm Events Required to Sample	CMC-WSB MS4 Permit Required Samples per Season	FY (Date) Sample Obtained at Rio Grande North and Rio Grande South
1	#1 Wet Season	FY 2017 (8/10/2016)
2	#2 Wet Season	FY 2017 (9/12/2016)
3	#3 Wet Season	FY 2017 (9/21/2016)
4	#1 Dry Season	FY 2017 (11/21/2016)
5	#2 Dry Season	Remaining Sample for CMC to Obtain
6	Any Season	FY 2018 (Wet Season - 7/27/2017)
7	Any Season	FY 2018 (Wet Season - 9/27/2017)

**Stormwater Quality Database for CMC**

As stated previously, there were no qualifying storm events sampled for the CMC during the FY 2018 dry season, wet weather monitoring. However, some details were added to the CMC Excel database regarding the Water Quality Criterion. This updated database is included with this memo.

**Data Entry for Discharge Monitoring Reports**

As required in the WSB MS4 Permit, verified stormwater quality data must be submitted annually to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. For this Task, BHI has completed data entry related to the EPA CMC DMRs for the FY 2018 wet season. DMRs with this data are due to EPA on December 1, 2018, and these forms will be submitted to EPA by AMAFCA as the delegated data entry member for the CMC.

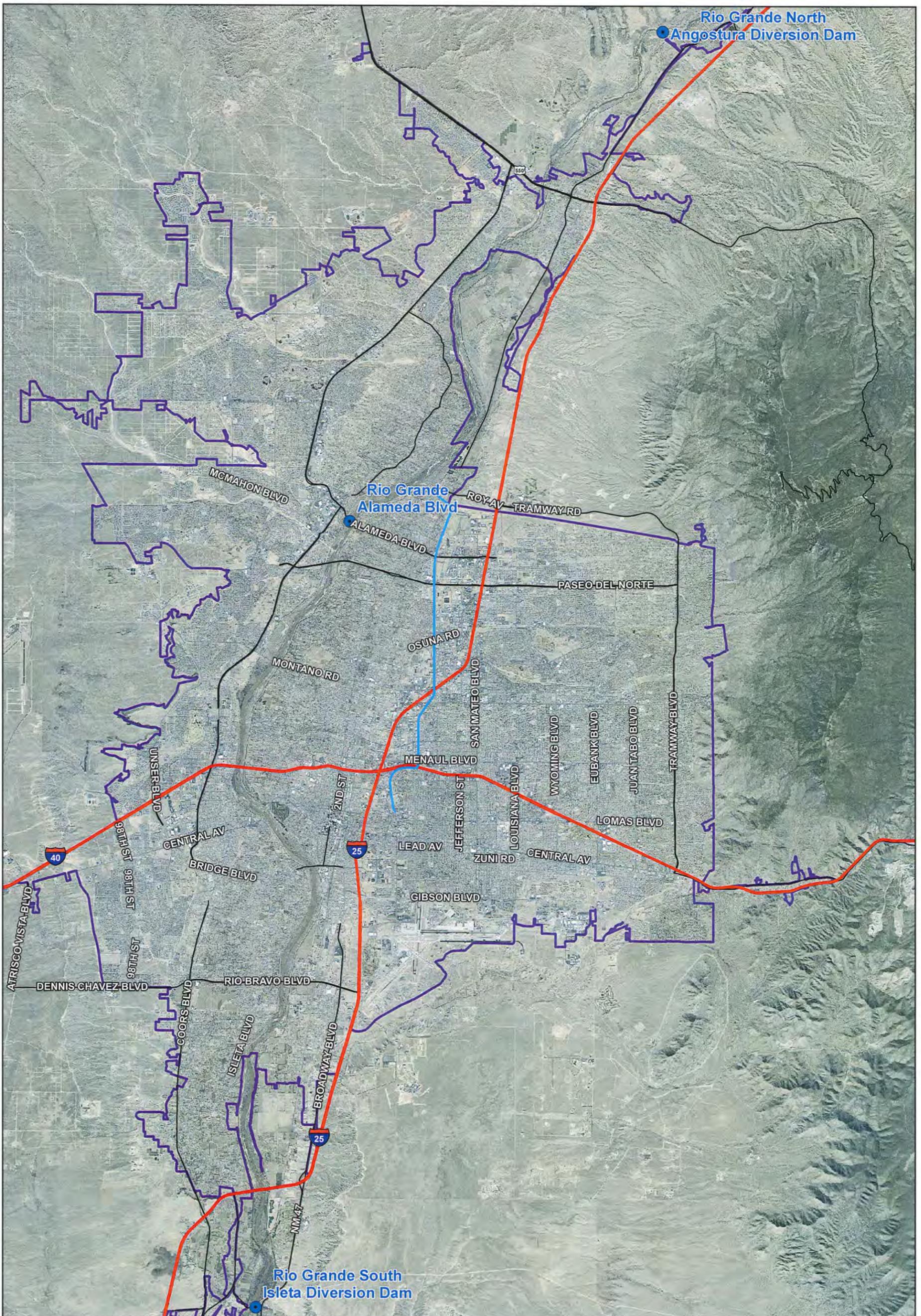
**Conclusions and Planning**

To summarize:

- With the two FY 2018 wet season samples, six (6) of the seven (7) required samples in the WSB MS4 Permit Wet Weather Monitoring section have been obtained. The CMC has met the required WSB MS4 Permit minimum of three (3) events during the wet season.
- Only one (1) dry season sample remains to be obtained to meet the WSB MS4 Permit requirements for the CMC members.

SG/le

Spreadsheet Included Separately: Excel CMC Spreadsheet updated with water quality criterion details.



**Legend**

- CMC Monitoring Locations
- North Diversion Channel
- Interstate Highway
- U.S. Highway
- State Highway
- Albuquerque Urbanized Area



**CMC Monitoring**

**Figure 1**  
**Monitoring Locations**



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## MEMORANDUM

**DATE:** February 20, 2018

**TO:** Jerry Lovato, PE, AMAFCA  
Patrick Chavez, PE, AMAFCA

**FROM:** Craig Hoover, PE  
Sarah Ganley, PE  
Evan Burn, PE

**SUBJECT:** **CMC Wet Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting FY 2018 Wet Season (July 1, 2017, to October 31, 2017) Task 28 Reissued Memo**

### Notification of In-Stream Water Quality Exceedances

For downstream notification purposes, the following parameters for in-stream samples taken in the Rio Grande for the FY 2018 wet season had results that exceeded applicable water quality standards for one or more samples: E. coli, Polychlorinated Biphenyls (PCBs), and Gross Alpha. Table 1 summarizes the samples with exceedances and the applicable water quality standard (WQS) that was exceeded. Additional details on the sampling results are provided in this memo.

**Table 1: Parameters Detected Above Applicable Water Quality Standards  
CMC FY 2018 Wet Season Monitoring**

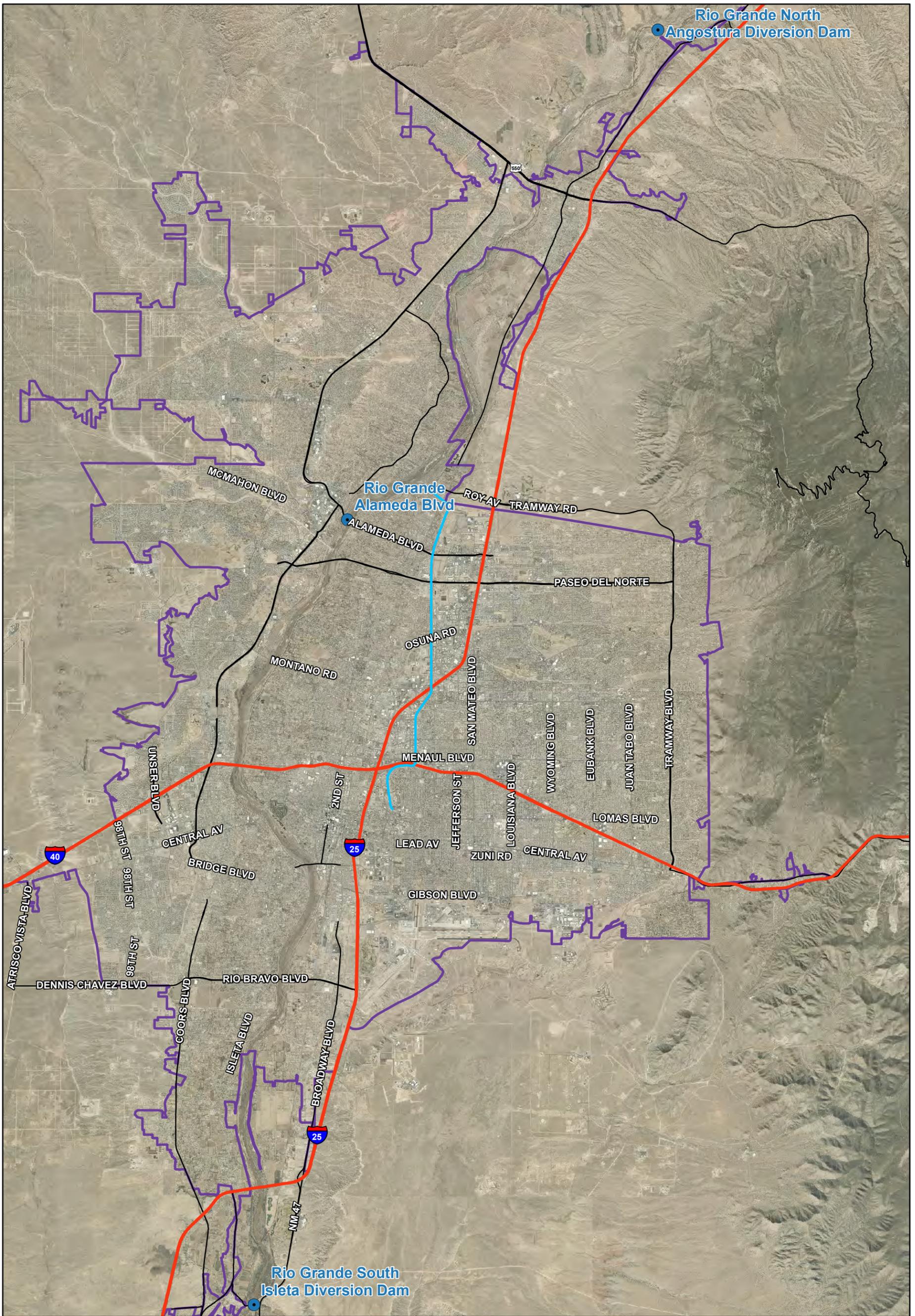
Sampling Date Location	Parameters, Applicable Water Quality Standard (WQS), and Results Exceeding Applicable WQS		
	E. coli	PCBs	Gross Alpha
	WQS: 88 CFU/100 ml Pueblo of Isleta Primary Contact Ceremonial & Recreational	WQS: 0.00017 ug/L Pueblo of Isleta Human Health Criteria (based on fish consumption only)	WQS: 15 pCi/L Pueblo of Isleta (General Standards) and NM domestic water supply and livestock watering
7/28/17 Rio Grande South Isleta Diversion Dam	236 CFU/100ml	0.000215 ug/L	No Exceedance
9/27/17 Rio Grande North Angostura Diversion Dam	733 CFU/100ml	0.00021 ug/L	No Exceedance
9/28/17 Rio Grande South Isleta Diversion Dam	6,131 CFU/100ml	0.00104 ug/L	20.9 pCi/L

### **Overview of Stormwater Monitoring Activity**

Bohannon Huston, Inc. (BHI) has been tasked to perform water quality services for the Compliance Monitoring Cooperative (CMC) Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2018 (July 1, 2017, to June 30, 2018). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is being conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this on-call task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

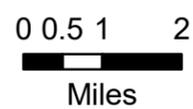
As identified in the CMC Monitoring Plan, the WSB MS4 Permit requires a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 3). Four (4) samples were collected in FY 2017 toward the WSB MS4 Permit requirements. This task assumes the remaining three (3) storm events, weather permitting, will be sampled in FY 2018 (July 1, 2017, to June 30, 2018) at both the Rio Grande North and Rio Grande South locations identified in the CMC Monitoring Plan. In addition, a mid-point E. coli sample may be obtained in the Rio Grande at Alameda Blvd. for each of these events.

Of these three (3) remaining storm events, two (2) samples were collected during the FY 2018 wet season (July 1, 2017, to October 31, 2017). The CMC collected one FY 2018 wet season sample on July 27-28, 2017, and one on September 27-28, 2017.



**Legend**

- CMC Monitoring Locations
- North Diversion Channel
- Interstate Highway
- U.S. Highway
- State Highway
- Albuquerque Urbanized Area



**CMC Monitoring**

**Figure 1  
Monitoring Locations**



The CMC Excel based database (created under Task 20) will be updated with the FY 2018 wet weather monitoring data as results are received. The database contains sample location, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Qualification Levels (MQL) and results. Any unusable data will be identified.

## Summary of the CMC Sampling Plan

### *Sampling Parameters:*

Samples from both the Rio Grande North and Rio Grande South monitoring locations were analyzed for the parameters defined in the EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016. The parameter list for both locations, which is intended to characterize stormwater discharges into the river, is as follows:

- Total Suspended Solids (TSS)
- Total Dissolved Solids (TDS)
- Chemical Oxygen Demand (COD)
- Biological Oxygen Demand – 5-day (BOD<sub>5</sub>)
- Dissolved Oxygen (DO)
- Oil & grease (N-Hexane Extractable Material)
- E. coli
- pH
- Total Kjeldahl Nitrogen (TKN)
- Nitrate plus Nitrite
- Dissolved Phosphorus
- Ammonia plus Organic Nitrogen (Nitrogen, Ammonia and Nitrogen, Total)
- Phosphorous (Total Phosphorous)
- Polychlorinated Biphenyls (PCBs - Method 1668A)
- Gross Alpha
- Tetrahydrofuran
- Benzo(a)pyrene
- Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
- Benzo(k)fluoranthene
- Chrysene
- Indeno(1,2,3-cd)pyrene
- Dieldrin
- Pentachlorophenol
- Benzidine
- Benzo(a)anthracene
- Dibenzofuran
- Dibenzo(a, h)anthracene
- Chromium VI (Hexavalent)
- Copper- Dissolved
- Lead- Dissolved
- Bis(2-ethylhexyl)phthalate
- Conductivity
- Temperature

Hardness (as CaCO<sub>3</sub>) was added to the parameter list to allow dissolved metal results to be compared to the applicable WQSs. DO, pH, conductivity, and temperature are required by the WSB MS4 Permit to be analyzed in the field during sample collection, which was conducted by DBS&A, within fifteen (15) minutes of sample collection. All E. coli samples were submitted to the laboratory within six (6) hours of collection in order to meet the specified hold time.

*Sampling Locations:*

The sampling locations are shown in Figure 1, page 3.

Rio Grande North – In-stream sampling within the Rio Grande was performed upstream of the Angostura Diversion Dam at the north end of the watershed. The location is upstream of all inputs from the Urban Area (UA) to the river and provides the background water conditions.

Rio Grande South – In-stream sampling within the Rio Grande was performed at the Isleta Bridge at the south end of the watershed. The location is downstream of all inputs from the UA to the river and provides the downstream water conditions. These locations have been accepted by EPA and New Mexico Environment Department (NMED) to meet the WSB MS4 Permit requirements in Part III.A.

During this FY 2018 wet season, an E. coli only sampling point was added within the Rio Grande at Alameda Blvd. This is the location of the NMED defined stream segment divide. This sample point was added after discussion with NMED in February 2017 regarding potential refinements to E. coli loading calculations.

*Sample Collection:*

As mentioned previously, sample collection for the CMC is being conducted by DBS&A (through a separate on-call contract) as well as by CMC members. Since BHI was not involved, this task and memo do not address the details of the methodologies regarding sampling, determining if an event was a qualifying storm event, or determining the timing of the hydrograph at the Rio Grande Alameda and Rio Grande South locations.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2018 wet season sampling. AMAFCA provided BHI the completed laboratory analysis reports from Hall Environmental Analysis Laboratory (HEAL) for this monitoring season.

*Quality Assurance Project Plan (QAPP):*

AMAFCA provided BHI with the Draft Quality Assurance Project Plan (QAPP) for the CMC dated June 14, 2016. DBS&A followed this QAPP during sample collection. BHI used this QAPP and the included standard operating procedures (SOPs) for the data verification and validation.

**Monitoring Activity & Lab Analysis Summary**

The list below provides a summary of the CMC comprehensive monitoring program activities completed for the FY 2018 wet season from July 2017 through October 2017. Two (2) qualifying storm events were sampled and analyzed during the FY 2018 wet season.

- **July 27-28, 2017 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 12:30 p.m. on July 27 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning July 27 was a qualifying storm event. A sample in the Rio Grande at Alameda Blvd. was obtained at 10:30 p.m. and tested for E. coli at the Bernalillo Waste Water Treatment Plant (WWTP). A Rio Grande South sample was collected beginning at 8:45 a.m. on July 28; the samples from the North (from July 27) and South locations were taken to the HEAL laboratory for full parameter testing.
- **September 27-28, 2017 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 12:00 p.m. on September 27 and sent to the laboratory for an E. coli only test. The CMC determined the storm event beginning September 27 was a qualifying storm event. A sample in the Rio Grande at Alameda Blvd. was obtained at 10:00 p.m. and tested for E. coli at the Bernalillo WWTP. A Rio Grande South sample was collected beginning at 1:40 p.m. on September 28; the samples from the North (from September 27) and South locations were taken to the laboratory for full parameter testing.

### **Stormwater Quality Database for CMC**

As stated previously, there were two (2) qualifying storm events during the FY 2018 wet season, wet weather monitoring which occurred July 27-28 and September 27-28. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as sampling comments have been received, and field results have been added to the database. Additionally, the HEAL and Bernalillo WWTP lab reports for the corresponding time period have been received, added to the database, and are provided with this memo (Attachment 1). The laboratory reports attached to this memo have BHI added comments including the field parameter measurements and other relevant notes related to the laboratory report.

#### *Database Data Entry:*

The CMC Excel database was updated with the FY 2018 wet season, wet weather monitoring data. The database contains sample locations, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. The database was updated under this Task to include the Rio Grande at Alameda sample location. Applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 as well as the Pueblo of Isleta WQSs are entered in the Excel database for comparison purposes with testing results. There is an indicator in the database to show if the monitoring results exceed the applicable surface WQS. An exceedance is not a violation of the WSB MS4 Permit, as the Permit does not have numeric discharge limitations. These ">WQ Standard" flags simply and quickly show the CMC members where the results of the lab data exceed the applicable WQS.

Upon receipt of the lab reports, water quality data was entered in to the database. All data entered in to the database is initially denoted with a "P" to indicate that it is provisional and has not been through the verification and validation process yet. Full parameter analyses of qualifying storm events for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli only samples from the Rio Grande Alameda location were also entered into the database.

*Data Verification and Validation:*

The HEAL laboratory analysis reports were provided to BHI by AMAFCA. The lab reports also contain the Chain of Custody for the submitted samples. Field data was requested by and provided to BHI by DBS&A. Data verification and validation (V&V) was conducted by BHI on all field notes, lab reports, and Chain of Custody documents in accordance with the CMC Water Quality Standard Operating Procedure (SOP) #2, which is part of the existing CMC QAPP, Draft June 14, 2016. These procedures are based on EPA Guidance for Environmental Data Verification and Validation (U.S. EPA, 2008).

As stated in the QAPP, the V&V process was completed by a different person than the one who entered the data into the database. The V&V process included use of the *Data Verification and Validation Worksheet* (provided in the QAPP). For this task, field data was verified first, confirming all field notes were complete. BHI handled field parameter questions directly with DBS&A. Chemical data verification began as soon as the lab reports were received, checking that all parameters were tested and looking for any obvious exceedances of WQS. Other steps listed on the *Data Verification and Validation Worksheet* were completed after all data from the laboratory was received and entered into the database. Sample blank results were reviewed to identify potential contamination during field processing or transport. Replica/duplicate samples were evaluated based on relative percent difference (as described in more detail in the QAPP) to determine the variability of the samples.

There were not any CMC FY 2018 wet season data that did not meet the appropriate QA/QC requirements. If there were any data that did not meet the appropriate QA/QC requirements, it would have been assigned an appropriate laboratory qualifier or validation codes. A summary of validation codes is provided in the QAPP.

Once the V&V process was completed, the worksheets were signed. Copies of the V&V worksheets are provided with this memo (Attachment 2). In the database, data that was checked during the V&V process was then changed from being denoted with a "P" for provisional to a "V" for verified, and laboratory qualifiers were added, as needed.

**CMC FY 2018 Wet Season Assessment and Evaluation of Monitoring Results**

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has thirty-three (33) parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these thirty-three (33) parameters, thirteen (13) parameters were not detected in either of the FY 2018 wet season samples at either the Rio Grande North or South locations. Refer to Table 2 for a list of the parameters that were not detected.

**Table 2: Parameters Not Detected  
 CMC FY 2018 Wet Season Monitoring**

Parameters Not Detected	
Tetrahydrofuran	Dieldren
Benzo(a)pyrene	Pentachlorophenol
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Benzidine
Benzo(k)fluoranthene	Benzo(a)anthracene
Chrysene	Dibenzofuran
Indeno(1,2,3-cd)Pyrene	Dibenzo(a,h)anthracene
Chromium VI (Hexavalent)	

For the remaining twenty (20) parameters on the CMC monitoring parameter list, only three parameters (E. coli, PCBs, and gross alpha) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta WQS during the FY 2018 wet season. These exceedances are summarized on Table 1, page 1 and discussed below in further detail.

*E. coli:*

The E. coli results collected during the FY 2018 wet season are summarized in Table 3.

**Table 3: E. coli Results  
 CMC FY 2018 Wet Season Monitoring**

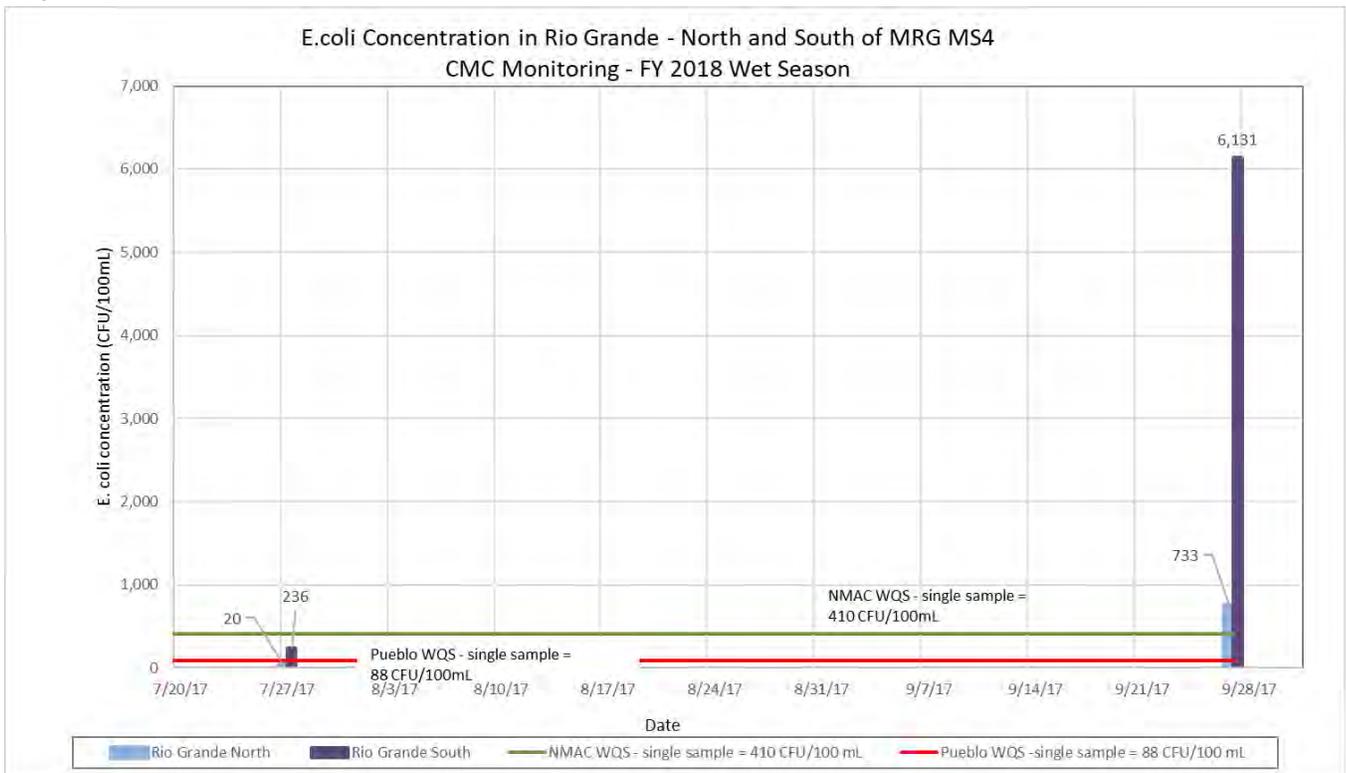
Date – Rio Grande Location	E. coli Results (CFU/100 ml)
July 27, 2017 – North	20
July 27, 2017 – Alameda	52
July 28, 2017 – South	236
Sept. 27, 2017 – North	733
Sept. 27, 2017 – Alameda	Result not usable
Sept. 28, 2017 – South	6,131

At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), two (2) samples were collected and tested for E. coli, and one (1) of the samples, the September 27-28, 2017 sample, had results that exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL) as well as the primary contact-single sample NMAC WQS (410 CFU/100 ml). At the Rio Grande South location (downstream of the MS4 UA), two (2) samples were collected and tested for E. coli, and both of these samples had results that exceeded the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL) and one (1) of the samples, the September 27-28, 2017 sample, also exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml).

In addition, the CMC added an E. coli sample point in the Rio Grande at Alameda. This added analysis point was based on discussions with NMED in February 2017 on collecting actual data at

the stream segment divide verses using an area percentage (as defined in the TMDL) for E. coli loading calculations. For both FY 2018 wet season storm events, a sample was collected during each storm event at the Alameda location, and this sample was tested by the Bernalillo WWTP. However, the September 27-28, 2017, storm event sample result was not usable for CMC E. coli loading calculations, as the lab reported the result as too numerous to count.

Monthly geometric mean values were not able to be calculated and compared to applicable WQSs because the CMC had only one (1) sample per location in each July and September. As a reminder, in January 2017 the CMC members clarified with NMED that the units MPN/100 mL and CFU/100 mL are considered to be interchangeable for the purposes of this stormwater quality monitoring reporting. The New Mexico and Pueblo WQS for E. coli are currently in units of CFU/100 mL while the lab reports are typically in units of MPN/100mL. The graph presented in this section uses units of CFU/100 mL to be consistent with the WQSs units. Refer to Figure 2 for a graphical representation of wet season E. coli results at the Rio Grande North and Rio Grande South locations

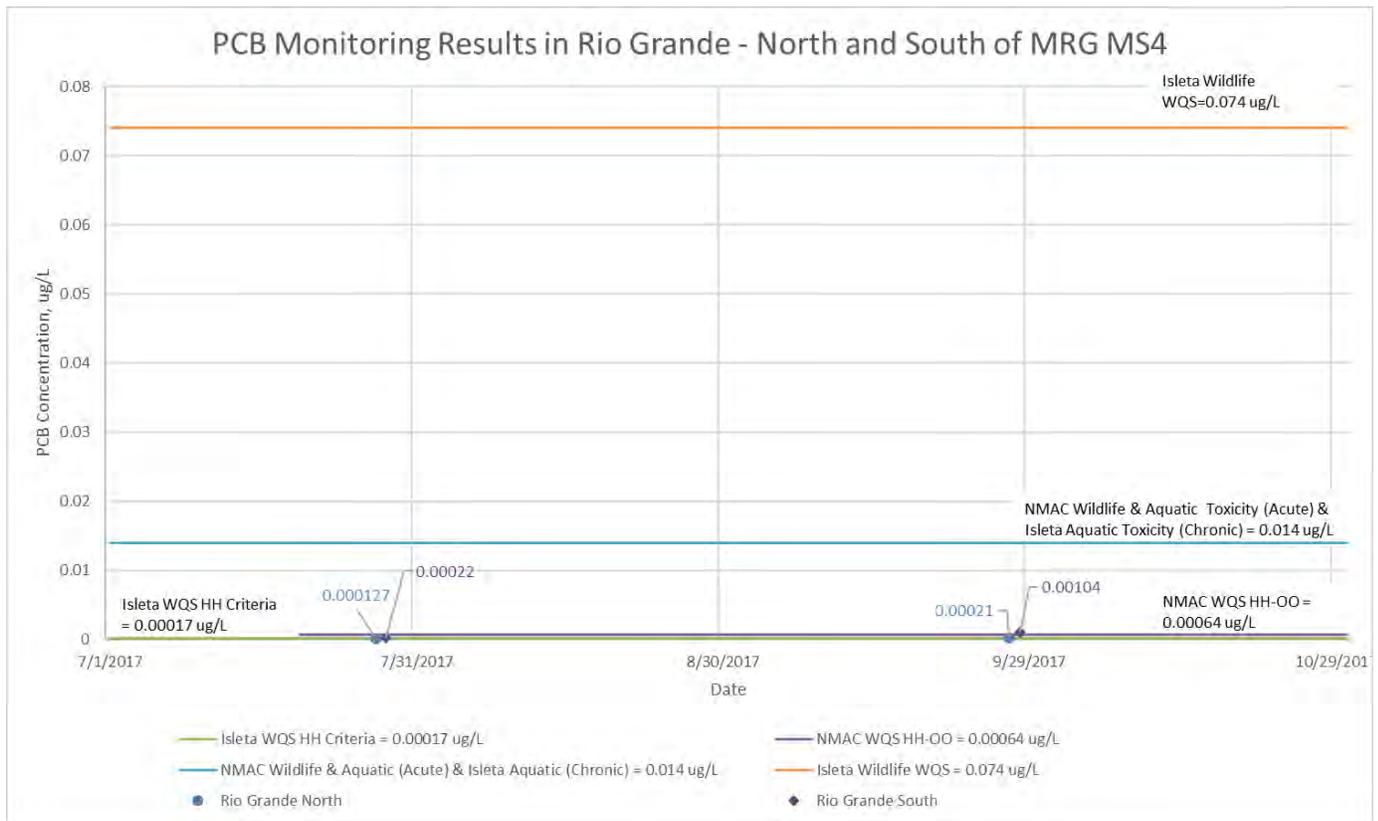


**Figure 2: E. coli Results  
 CMC Monitoring – FY 2018 Wet Season**

**PCBs:**

There are multiple surface water quality standard values listed for PCBs in both the Pueblo of Isleta and the State of New Mexico standards for the various designated uses. The PCBs measured in samples collected from the Rio Grande during the FY 2018 wet season stormwater events were all below the minimum quantification level (MQL) established in U.S. Environmental

Protection Agency (USEPA) standards for MS4 NPDES Permit (Appendix F, 0.2 ug/L for PCBs). The PCB results were also below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses including drinking water, wildlife habitat, acute aquatic life, and chronic aquatic life. However, three CMC samples from the Rio Grande were above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters, and one of these was also above the New Mexico human health-organism only (fish consumption only) WQS. The human health-organism only criterion is based upon human consumption of fish and other aquatic life that bioaccumulate contaminants over time. The FY 2018 wet season PCB results are shown in Figure 3 relative to various WQSs for PCBs.



**Figure 3: PCB Results  
 CMC Monitoring – FY 2018 Wet Season**

**Gross Alpha:**

The September 27-28, 2017, Rio Grande South sample results exceeded the New Mexico and Pueblo of Isleta WQS for gross alpha. The WQS for Gross Alpha is the same value for both the NMAC 20.6.4 Water Quality Criterion and Pueblo of Isleta; the WQS of 15 pCi/L (“pCi/L” means picocuries per liter) is a general standard for the Pueblo of Isleta, and for New Mexico it is based on Domestic Water Supply and Livestock Watering designated uses. Once lab results were obtained and reviewed, the CMC was made aware of this exceedance on December 7, 2017. Sampling collection discussions with DBS&A did not note any variances from typical sampling procedures that would have impacted the analytical results for gross alpha (refer to Attachment 3

for additional documentation). In surface water, the gross alpha analyses may be affected by a high content of suspended load, particularly where sediment sources may be derived from granitic terrain; gross alpha results may reflect the radioactivity of the natural elements in the sediment more than the surface water.

The September 27-28, 2017, Rio Grande South Gross Alpha analytical results are detailed below; the units are in picocuries per liter (abbreviated as pCi/L):

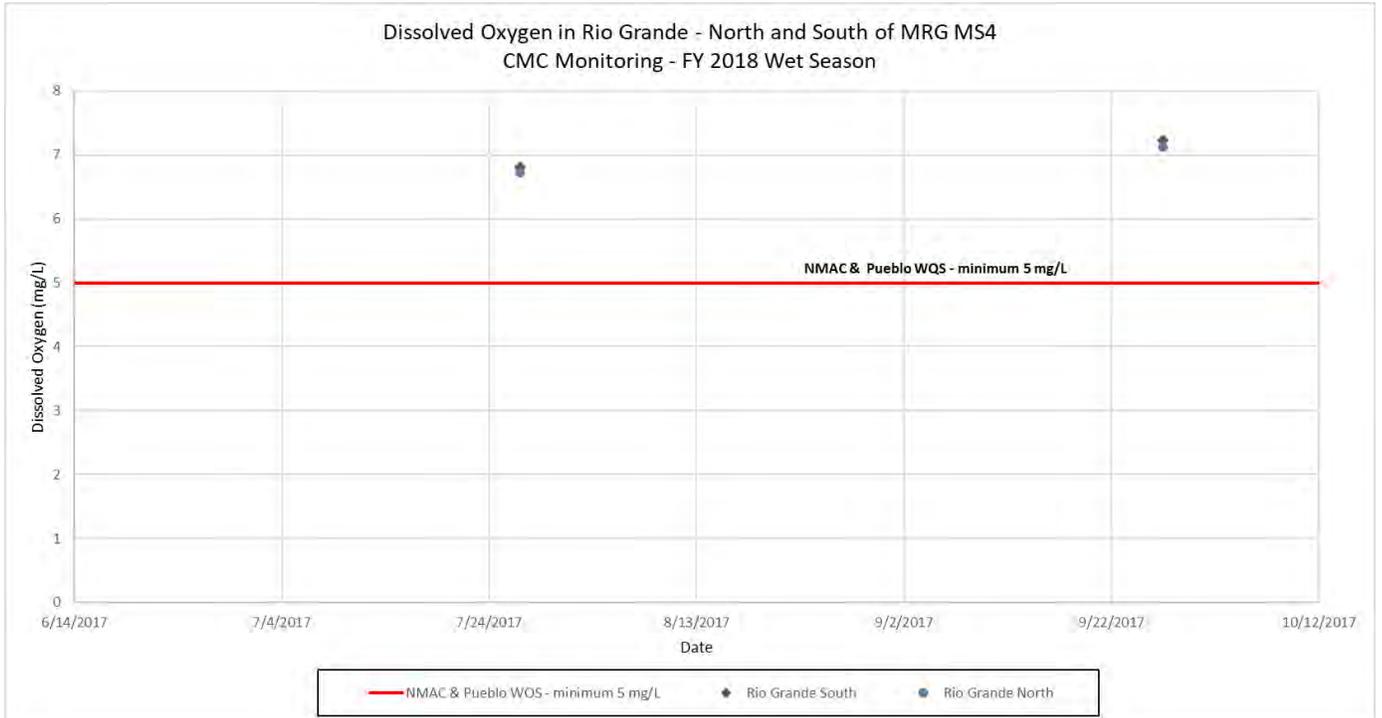
- Rio Grande South CMC sample result = 20.9 pCi/L
- WQS at the Rio Grande South (Isleta Diversion Dam) location = 15 pCi/L (NMAC 20.6.4 Water Quality Criterion for livestock watering and domestic water supply designated uses and general standard for Pueblo of Isleta)

This is the first time the analytical results from a CMC sample has had an exceedance in gross alpha. The CMC will continue to closely evaluate this parameter in future samples. If additional exceedances occur, the CMC will discuss the results further and may consult NMED for further guidance.

*Dissolved Oxygen and Temperature:*

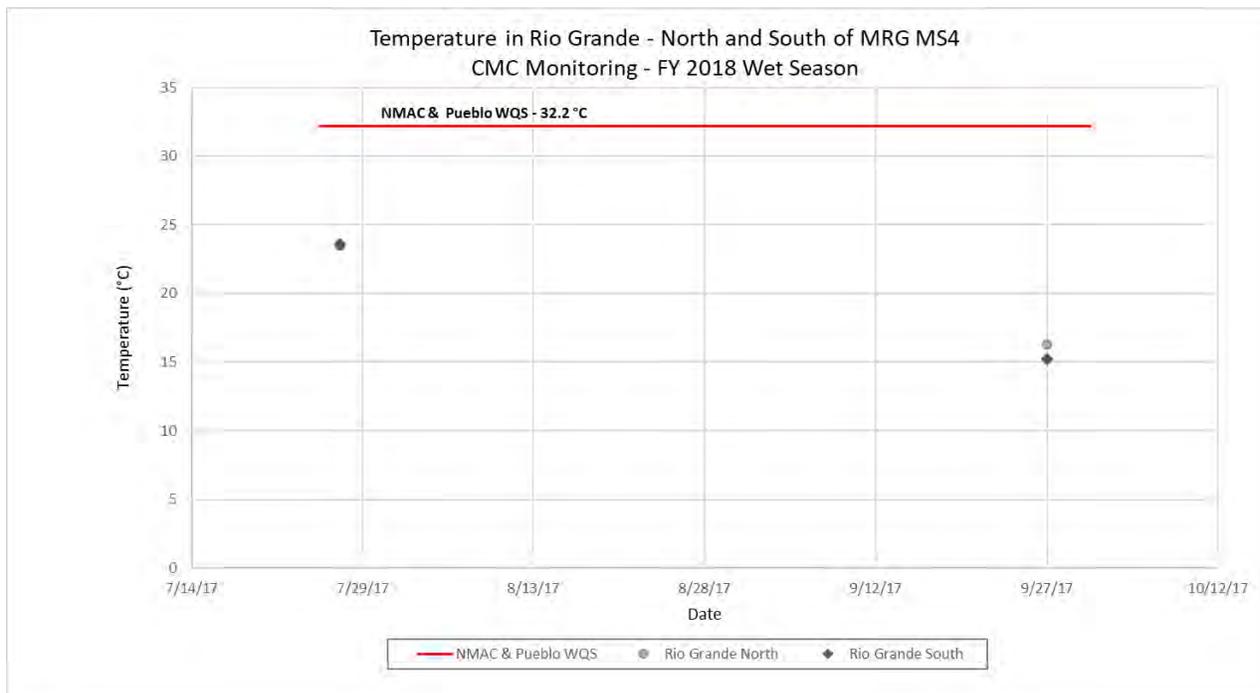
Two of the water quality parameters are specifically worth mentioning in this memo because they are listed in the WSB MS4 Permit, Part I.C.1 – Special Conditions: dissolved oxygen and temperature. These two parameters did not have any surface water quality exceedances during the FY 2018 wet season sampling.

Dissolved oxygen is a water quality concern in the Rio Grande if it is below 5 mg/L. None of the samples taken from the Rio Grande during the FY 2018 wet season monitoring had dissolved oxygen values below 5 mg/L. This provides the MS4s with specific monitoring data showing that stormwater did not cause or contribute to exceedances of applicable dissolved oxygen water quality standards in the Rio Grande during the FY 2018 wet season. Refer to Figure 4 for dissolved oxygen results and comparison to applicable WQS.



**Figure 4: Dissolved Oxygen Results for Rio Grande  
 CMC Monitoring – FY 2018 Wet Season**

Temperature is listed in the WSB MS4 Permit as a special condition (currently only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED has proven that stormwater discharges into the Rio Grande are not raising the Rio Grande temperature above the WQS. The data collected during this FY 2018 wet season monitoring supports this conclusion. All the temperature field readings taken in the Rio Grande during the CMC FY 2018 wet season were below 32.2°C (90 °F) - the WQS for the State of New Mexico and for the Isleta and Sandia Pueblos. Refer to Figure 5 for temperature results and comparison to applicable WQS.



**Figure 5: Temperature Monitoring Results in Rio Grande  
 CMC Monitoring – FY 2018 Wet Season**

**CMC FY 2018 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)**

Related to assessing the stormwater results, BHI has calculated the E. coli loading and compared it to the aggregate Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the CMC group. A TMDL is the maximum amount of a pollutant (E. coli in this case) that a water body (Rio Grande) can assimilate on a daily basis without violating applicable surface WQS. The total TMDL for a stream segment consists of the multiple WLA for point sources, non-point sources, and natural sources, plus a margin of safety. The CMC MS4 allotted WLA was determined in the US EPA Approved, Total Maximum Daily Load for the Middle Rio Grande Watershed, June 30, 2010, and subsequent communications with NMED. The WLA varies by flow condition in the Rio Grande and by stream segment.

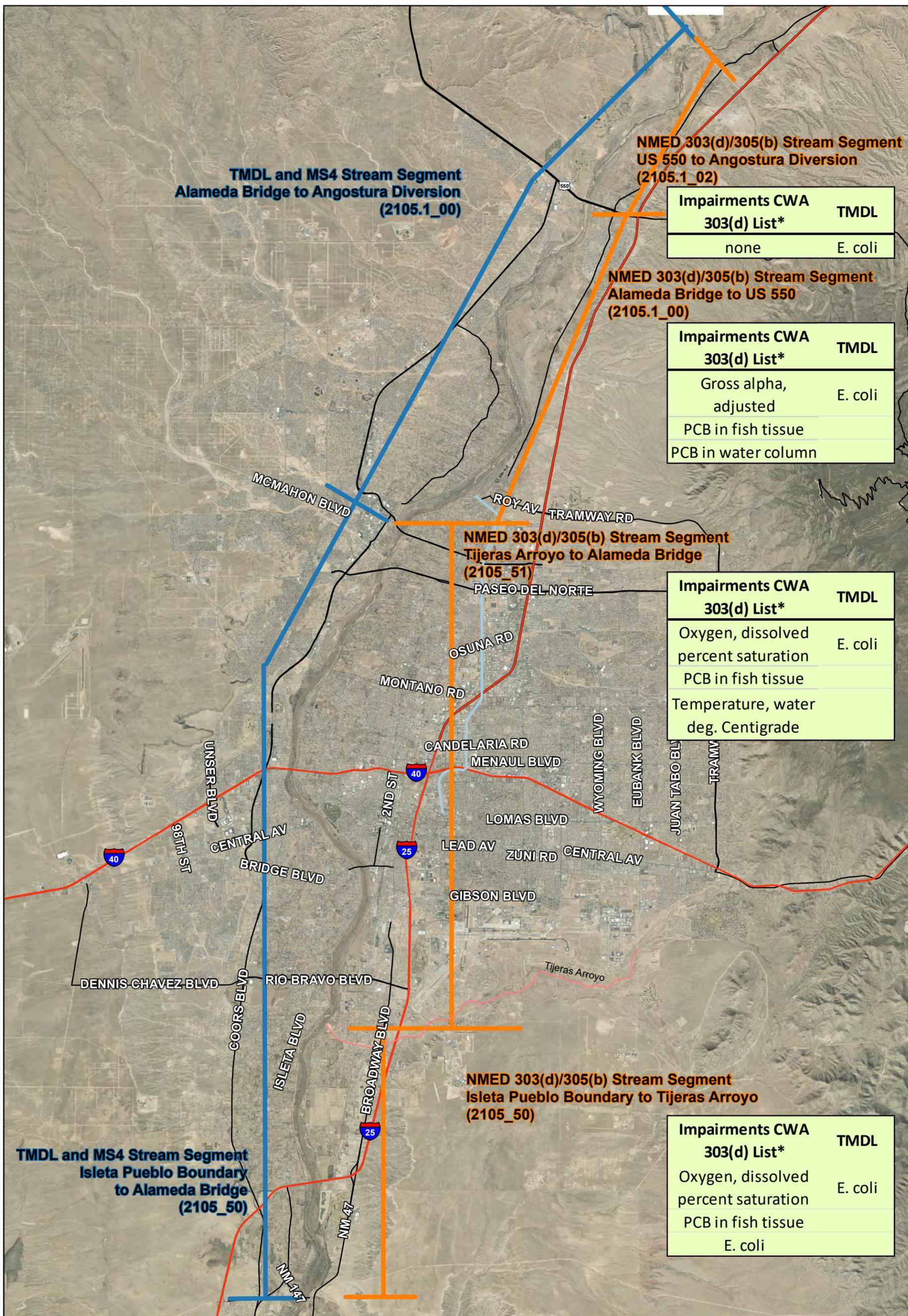
E. coli loading calculations and comparison to the WLA follows the WSB MS4 Permit requirements in "Discharges to Water Quality Impaired Water Bodies with an Approved TMDL," Part I.C.2.b.(i).(c).B, Appendix B-Total Maximum Daily Loads (TMDLs) Tables of the WSB MS4 Permit, and the NMED guidance provided to the CMC. Attached to this memo is the WLA Calculation spreadsheet which steps through the E. coli loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED.

There are two (2) stream segments defined in the WSB MS4 Permit (Appendix B): Isleta Pueblo Boundary to Alameda Street Bridge (Stream Segment 2105\_50) and Non-Pueblo Alameda Bridge to Angostura Diversion (Stream Segment 2105.1\_00). These stream segments differ from NMED's current stream segments defined in "2016-2018 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report," September 23, 2016. NMED currently has four

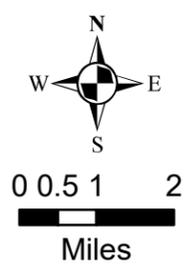
(4) stream segments instead of the two (2) WSB MS4 stream segments; of the four (4) segments, only one segment has an impairment for E. coli (2105\_50 Isleta Pueblo Boundary to Tijeras Arroyo). These various stream segment designations are shown in Figure 6, page 15.

The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently there is only one segment of the Rio Grande (Isleta to Tijeras) that was found to be impaired for E. coli. However, the TMDL for the other stream segments do not go away even if they are no longer impaired—the TMDL remains in place as a protective measure. TMDLs remain in effect after impairments are removed as protective measures.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the two (2) qualifying event wet season storm events—July 27-28 and September 27-28, 2017. For the July 27-28, 2017 event, the CMC obtained an E. coli sample in the Rio Grande at Alameda and used this to calculate the E. coli loading for the two river segments. Refer to Table 4 for a summary of the WLA comparison results. A spreadsheet is attached to this memo that provides the detailed calculations.



**Legend**  
 — TMDL/MS4 Stream Segments — Interstate Highway  
 — NMED Stream Segments — U.S. Highway  
 — North Diversion Channel — State Highway



**CMC Monitoring**  
**Figure 6**  
**Rio Grande**  
**NMED and MS4 Permit**  
**Stream Segments**

\* Final 2016-2018 State of NM Clean Water Act Section 303(d)/Section 305(b) Integrated Report

**Table 4: Summary of CMC E. Coli Loading Compared to WLA for the CMC**

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) <i>range defined by NMED</i>	CMC Daily E. coli Loading (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions	Loading Compared to WLA Potential Exceedance or Acceptable
<b>July 27-28, 2017 –</b> Rio Grande North E. coli concentration = 20 CFU/100 mL, Rio Grande at Alameda E. coli concentration = 52 CFU/100 mL Rio Grande South E. coli Concentration = 236 CFU/100 mL					
Alameda to Angostura	545	Dry	2.50E+10	3.24E+10	WLA Acceptable
Isleta to Alameda	470	Dry	8.63E+10	1.57E+10	WLA Potential Exceedance
<b>September 27-28, 2017 –</b> Rio Grande North E. coli concentration = 733 CFU/100 mL and Rio Grande South E. coli Concentration = 6,131 CFU/100 mL					
Alameda to Angostura	983	Moist	7.34E+12	9.09E+10	WLA Potential Exceedance
Isleta to Alameda	1,190	Moist	2.18E+12	6.29E+10	WLA Potential Exceedance

As Table 4 illustrates, the E. coli loading for the July 27-28, 2017, storm event for the northern segment (Alameda to Angostura) was below the WLA for the CMC MS4s. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda. The E. coli loading for the southern segment for the July 27-28, 2017, and both segments for the Sept. 27-28, 2017, event all potentially exceeded the CMC allocated WLA.

The WSB MS4 Permit implies that the WLA is a measurable goal for the MS4s related to E. coli. Based on extensive review of the US EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, this seems to be an unattainable goal for MS4s. The 2010 TMDL Report states on page 40, "It is important to remember that the TMDL is a planning tool to be used to achieve water quality standards...Meeting the calculated TMDL may be a difficult objective." The TMDL/WLA was calculated by NMED to meet the Pueblo (Sandia and Isleta) geometric mean maximum of 47 CFU/100 mL which was done to be "protective of downstream waters" and "to provide an implicit margin of safety (MOS)." A single grab sample E. coli result meeting this very low geometric mean WQS will be very difficult for the MS4s to obtain.

The CMC members discussed the difficulty of using the WLA as a measurable goal with NMED on February 1, 2017. NMED explained that exceeding the WLA does not trigger enforcement. However, NMED strongly encouraged the MS4s to document what they are doing once they realize the WLA is potentially exceeded. The February 1, 2017, meeting and the February 16, 2017, CMC discussion with NMED demonstrate CMC members are working toward understanding the WLA. In addition, the CMC members began implementing a refinement to the sampling plan discussed with NMED by obtaining an E. coli sample in the Rio Grande at Alameda during the FY 2018 wet season. This demonstrates that the CMC is continuing to investigate the potential exceedances and make improvements to monitor E. coli in the Rio Grande.

### **Data Entry for Discharge Monitoring Reports**

As required in the WSB MS4 Permit, verified stormwater quality data must be submitted annually to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. For this Task, BHI has not completed any data entry related to the EPA DMRs for the FY 2018 wet season. DMRs with this data are due to EPA on December 1, 2018, and these forms will be completed as directed by AMAFCA, as the delegated data entry member for the CMC.

### **Conclusions and Planning**

During the FY 2018 wet season (July 1 to October 31, 2017), two (2) qualifying stormwater samples were obtained by the CMC. Lab results have been received for all of these samples. This data has been entered into the CMC Excel database. The lab data entered is marked in the spreadsheet as "V" (verified), and data V&V has been completed (refer to Attachment 2).

To summarize, monitoring results and E. coli loading calculations for the FY 2018 wet season show that:

- With the two FY 2018 wet season samples, six (6) of the seven (7) required samples in the WSB MS4 Permit Wet Weather Monitoring section have been obtained. Seven (7) samples are required during the 5-year Permit term, so this is significant progress for the CMC. The CMC has met the required Permit minimum of three (3) events during the wet season.
- 13 of the 33 parameters tested were not detected in any of the Rio Grande North or South samples.
- Several key parameters all met the applicable WQSs as they have for all the CMC samples to date:
  - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
  - All temperature results were less than 32.2 °C (maximum WQS).
- The PCB results were also below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses including drinking water, wildlife habitat, acute aquatic life, and chronic aquatic life. However, three CMC samples from the Rio Grande were above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters and one of these was also above the New Mexico human health-organism only (fish consumption only) WQS.
- The September 27-28, 2017, Rio Grande South sample results exceeded the WQS for gross alpha. This is the first time the analytical results from a CMC sample has had an exceedance in gross alpha. The CMC will continue to closely evaluate this parameter in future samples.
- The calculated E. coli loading for the July 27-28, 2017, storm event for the northern segment (Alameda to Angostura) was below the WLA for the CMC MS4s. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda. The E. coli loading for the southern segment for the July 27-28, 2017, and both segments for the September 27-28, 2017, event all potentially exceeded the CMC allocated WLA.

- Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the E. coli loading calculations serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
- This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term “potential exceedance” is used.
- The in-stream data does not provide the concentration of E. coli contributed by only the CMC MS4s or any of the other potential sources. By using this percentage calculation approach, if other contributors are in exceedance of the WLA, then the CMC will likely also be in exceedance since this approach relies on a percentage of a total.

For planning purposes for the CMC members, the FY 2018 dry season monitoring activity (weather permitting), analytical results, and E. coli loading calculations will be summarized by BHI for the CMC in a memo due August 15, 2018.

SG/le

Attachments:

Attachment 1 – Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2018 Wet Season

Attachment 2 – FY 2017 Wet Season Completed Data Verification and Validation Forms

Attachment 3 – Documentation from DBS&A Related to September 27-28, 2017, Sample Collection and Gross Alpha Analytical Result

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet

Excel CMC Spreadsheet with FY 2018 Wet Season Stormwater Quality Monitoring Results

**ATTACHMENT 1**  
**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
**REPORTS WITH BHI NOTES FOR FY 2018 WET SEASON**



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 11, 2017

Patrick Chavez  
AMAFCA  
2600 Prospect Ave NE  
Albuquerque, NM 87107  
TEL: (505) 884-2215  
FAX

July 27, 2017 Rio Grande  
North and Rio Grande at  
Alameda (pre storm) - E.  
coli results

RE: CMC

OrderNo.: 1707E07

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/27/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1707E07

Date Reported: 8/11/2017

CLIENT: AMAFCA

Client Sample ID: Alameda-20170727

Project: CMC

Collection Date: 7/27/2017 10:20:00 AM

Lab ID: 1707E07-001

Matrix: AQUEOUS

Received Date: 7/27/2017 1:30:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>							Analyst: SMS
E. Coli	50.4	1.000		MPN/100mL	1	7/28/2017 4:04:00 PM	33053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1707E07

Date Reported: 8/11/2017

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North-20170727

Project: CMC

Collection Date: 7/27/2017 12:30:00 PM

Lab ID: 1707E07-002

Matrix: AQUEOUS

Received Date: 7/27/2017 1:30:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>							Analyst: <b>SMS</b>
E. Coli	20	10.00		MPN/100mL	10	7/28/2017 4:04:00 PM	33053

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Client Name: AMAFCA

Work Order Number: 1707E07

RcptNo: 1

Received By: Anne Thorne

7/27/2017 1:30:00 PM

*Anne Thorne*

Completed By: Anne Thorne

7/27/2017 1:43:54 PM

*Anne Thorne*

Reviewed By:

7/27 @ 1:48

**Chain of Custody**

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Client

**Log In**

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA

Samples were collected the same day and chilled.

- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA

10. VOA vials have zero headspace? Yes  No  No VOA Vials

11. Were any sample containers received broken? Yes  No

12. Does paperwork match bottle labels? Yes  No   
 (Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody? Yes  No

14. Is it clear what analyses were requested? Yes  No

15. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

# of preserved bottles checked for pH:	_____
( <2 or >12 unless noted)	
Adjusted?	_____
Checked by:	_____

**Special Handling (if applicable)**

16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

**18. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	16.9	Good	Not Present			

# Chain-of-Custody Record

Client: **AMAFCA**

Mailing Address: **2600 Prospect Ave**

**ABQ NM 87107**

Phone #: **505-884-2215**

email or Fax#: **pchavez@AMAFCA.org**

QA/QC Package:

Standard  Level 4 (Full Validation)

Accreditation

NELAP  Other

EDD (Type)

Turn-Around Time:

Standard  Rush

Project Name:

**CMC**

Project #:

**-**

Project Manager:

**Patrick Chavez**

Sampler: **C. Sohamesen - DBSA**

On Ice:  Yes  No

Sample Temperature: **16.9**

Container Type and #

Preservative Type

HEAL No.

**1707507**

**201**

**202**

Sample Request ID

**1**

**Alameda - 20170727**

**AG Rio Grande - North - 20170727**

Date: **27-17 1330**

Relinquished by: **[Signature]**

Date: **27-17 1330**

Received by: **[Signature]**

Date: **20170717 1330**

Remarks:

**[Blank]**

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

BTEX + MTBE + TMBs (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH 8015B (GRO / DRO / MRO)	
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	<b>X</b>
	<b>X</b>
	<b>E. coli - Num</b>
Air Bubbles (Y or N)	

July 27, 2018  
 Rio Grande at Alameda E.  
 coli sample during storm  
 event

# Bernalillo WWTP

## E. coli WORKSHEET

Time of Sampling: 10:30 AM Time of Arrival: 10:47 PM  
 Type of Sample: Grab Sample Instantaneous Flow: \_\_\_\_\_ MGD  
 Exact Location: EFF WW River Sample  
 Method Used: Hach m-ColiBlue 24 EPA Approved Method

Refrigerator Temperature: 4 °C  
 (Samples must be stored at <6°C)

In Incubator:  
 Date: 7-27-17 Time: 11:07 PM Temp: 35.1 °C  
24 Hours ± 2 hours. 35.0 ± 0.5°C

Out of Incubator:  
 Date: 7-28-17 Time: 9:31 Temp: 35.1 °C  
24 Hours ± 2 hours. 35.0 ± 0.5°C

**\*\*Formula:** Calculate coliform density: Use all plates and filtered volumes that fall between the ideal range. Include duplicates and multiple dilutions.

$$\text{Colonies/100 mL} = \frac{(\text{coliform colonies counted}) \times (100)}{\text{mLs Sample filtered}}$$

**\*\*Formula:** If no plate falls in the ideal range, use all plates and filtered volumes not categorized as TNTC or Confluent Growth.

$$\text{Colonies/100 mL} = \frac{(\text{Sum of colonies in all samples}) \times (100)}{\text{Sum of volume (in mL) of all samples}}$$

(Use the worksheet below to calculate coliform density)

IF: The total number of colonies exceeds 200 per membrane, or the colonies are too indistinct for accurate counting, or exceed 60 blue colonies, report the results as "Too Numerous to Count (TNTC)" Or "confluent growth" as applies.

\*\*Use plates that fall in the ideal range for Quantitative Determinations for e-coli (20-60)

*E. coli*  
 Colonies Reported/100  
 mls

52

Sample	Volume	Blue Colonies
Blank I	100 mL	0
<del>MW-25</del> 10	<del>MW-25 mL</del> 10 mL	6
<del>MW-50A</del> 20A	<del>MW-50 mL</del> 20 mL	10
<del>MW-50B</del> 20B	<del>MW-50 mL</del> 20 mL	14
<del>MW-100</del> 50	<del>MW-100 mL</del> 50 mL	52
Blank II	100 mL	0

Sampled By: Mack Watson  
 Analyzed By: Mack Watson



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

September 21, 2017

Patrick Chavez  
AMAFCA  
2600 Prospect Ave NE  
Albuquerque, NM 87107  
TEL: (505) 884-2215  
FAX

July 27, 2018 Rio Grande North  
and  
July 28, 2017 Rio Grand South  
results

RE: CMC

OrderNo.: 1707E46

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/28/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook):

7/27/17 - Rio Grande North

DO = 6.73 mg/L, pH = 7.33, Conductivity = 247 umhos/cm, and Temperature = 23.47°C

7/28/17 - Rio Grande South

DO = 6.8 mg/L, pH = 8.13, Conductivity = 361 umhos/cm, and Temperature = 23.6°C



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

## Case Narrative

WO#: 1707E46  
Date: 9/21/2017

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CLIENT: AMAFCA  
Project: CMC

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### Analytical Notes Regarding EPA Method 8260:

Both samples in this report were analyzed by EPA Method 8260, however Tetrahydrofuran was not included in the list of reportable compounds. We have scanned the samples using the MS for Tetrahydrofuran and this compound was not detected.

### Analytical Notes Regarding EPA Method 8270:

Both samples in this report were analyzed by EPA Method 8270, however Benzidine and Dieldrin were not included in the list of reportable compounds. We have scanned the samples using the MS for Benzidine and Dieldrin and these compounds were not detected.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA  
 Project: CMC  
 Lab ID: 1707E46-001B

Client Sample ID: Rio Grande-North-20170727  
 Collection Date: 7/27/2017 12:30:00 PM  
 Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM	
Benz(a)anthracene	ND	3.9	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Benzo(a)pyrene	ND	4.0	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Benzo(b)fluoranthene	ND	4.0	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Benzo(k)fluoranthene	ND	4.4	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Bis(2-ethylhexyl)phthalate	5.5	4.8	10	J	µg/L	1	8/11/2017 4:39:12 PM	33127
Chrysene	ND	3.8	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Dibenz(a,h)anthracene	ND	4.6	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Dibenzofuran	ND	4.1	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Indeno(1,2,3-cd)pyrene	ND	4.2	10		µg/L	1	8/11/2017 4:39:12 PM	33127
Pentachlorophenol	ND	4.9	20		µg/L	1	8/11/2017 4:39:12 PM	33127
Surr: 2-Fluorophenol	52.2	0	15-88		%Rec	1	8/11/2017 4:39:12 PM	33127
Surr: Phenol-d5	40.6	0	15-72.4		%Rec	1	8/11/2017 4:39:12 PM	33127
Surr: 2,4,6-Tribromophenol	74.9	0	15-117		%Rec	1	8/11/2017 4:39:12 PM	33127
Surr: Nitrobenzene-d5	92.1	0	33.5-120		%Rec	1	8/11/2017 4:39:12 PM	33127
Surr: 2-Fluorobiphenyl	86.4	0	26.5-109		%Rec	1	8/11/2017 4:39:12 PM	33127
Surr: 4-Terphenyl-d14	64.2	0	21.7-98.7		%Rec	1	8/11/2017 4:39:12 PM	33127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-001C

Client Sample ID: Rio Grande-North-20170727
Collection Date: 7/27/2017 12:30:00 PM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: EPA METHOD 1664B, N-Hexane Extractable Material, 5.17, 3.77, 9.94, J, mg/L, 1, 8/1/2017, 33094. Analyst: MAB.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with 2 columns: Qualifiers and descriptions. Includes codes like \*, D, H, ND, PQL, S, B, E, J, P, RL, W and their corresponding definitions.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-001E

Client Sample ID: Rio Grande-North-20170727
Collection Date: 7/27/2017 12:30:00 PM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: SM5210B: BOD, Biochemical Oxygen Demand, DO Depletion<2.0, 2.0, 2.0, mg/L, 1, 8/2/2017 3:49:00 PM, 33070. Analyst: SMS

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified. Page 4 of 32

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA  
 Project: CMC  
 Lab ID: 1707E46-001F

Client Sample ID: Rio Grande-North-20170727  
 Collection Date: 7/27/2017 12:30:00 PM  
 Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>	
Nitrogen, Nitrite (As N)	ND	0.0069	0.10		mg/L	1	7/28/2017 3:28:31 PM	R44608
Nitrogen, Nitrate (As N)	0.050	0.022	0.10	J	mg/L	1	7/28/2017 3:28:31 PM	R44608
<b>SM 4500 NH3: AMMONIA</b>							Analyst: <b>CJS</b>	
Nitrogen, Ammonia	ND	0.40	1.0		mg/L	1	8/2/2017 2:36:00 PM	R44684
<b>SM4500-H+B: PH</b>							Analyst: <b>JRR</b>	
pH	8.19			H	pH units	1	7/31/2017 1:10:24 PM	R44651
<b>EPA METHOD 365.1: TOTAL PHOSPHOROUS</b>							Analyst: <b>CJS</b>	
Phosphorus, Total (As P)	0.062	0.010	0.010		mg/L	1	8/8/2017 12:25:00 PM	33215
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>SRM</b>	
Total Dissolved Solids	181	11.8	20.0		mg/L	1	8/3/2017 12:07:00 PM	33122
<b>SM 4500 NORG C: TKN</b>							Analyst: <b>smb</b>	
Nitrogen, Kjeldahl, Total	ND	0.44	1.0		mg/L	1	8/11/2017 11:11:00 AM	33282
<b>SM 2540D: TSS</b>							Analyst: <b>KS</b>	
Suspended Solids	32	3.9	4.0		mg/L	1	8/3/2017 2:30:00 PM	33138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-001G

Client Sample ID: Rio Grande-North-20170727
Collection Date: 7/27/2017 12:30:00 PM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Rows include EPA METHOD 200.7: METALS (Calcium, Magnesium) and SM2340B: HARDNESS (Hardness (As CaCO3)).

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-001H

Client Sample ID: Rio Grande-North-20170727
Collection Date: 7/27/2017 12:30:00 PM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Rows include EPA 200.8: DISSOLVED METALS, Copper, and Lead.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified.

**Analytical Report**

Lab Order: **1707E46**

Date Reported: **9/21/2017**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** AMAFCA  
**Project:** CMC  
**Lab ID:** 1707E46-002A

**Client Sample ID:** ABQRD-East  
**Collection Date:** 7/28/2017 7:15:00 AM  
**Matrix:** Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>							Analyst: <b>SMS</b>	
E. Coli	1296	10.00	10.00		MPN/100	10	7/29/2017 3:29:00 PM	33077

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA  
 Project: CMC  
 Lab ID: 1707E46-003B

Client Sample ID: Rio Grande-South-20170728  
 Collection Date: 7/28/2017 8:45:00 AM  
 Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 8270C: SEMIVOLATILES</b>								Analyst: DAM
Benzo(a)pyrene	ND	4.0	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Benzo(b)fluoranthene	ND	4.0	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Benzo(g,h,i)perylene	ND	4.0	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Benzo(k)fluoranthene	ND	4.4	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Bis(2-ethylhexyl)phthalate	ND	4.8	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Chrysene	ND	3.8	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Dibenz(a,h)anthracene	ND	4.6	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Dibenzofuran	ND	4.1	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Indeno(1,2,3-cd)pyrene	ND	4.2	10		µg/L	1	8/11/2017 6:03:09 PM	33127
Pentachlorophenol	ND	4.9	20		µg/L	1	8/11/2017 6:03:09 PM	33127
Surr: 2-Fluorophenol	43.3	0	15-88		%Rec	1	8/11/2017 6:03:09 PM	33127
Surr: Phenol-d5	32.4	0	15-72.4		%Rec	1	8/11/2017 6:03:09 PM	33127
Surr: 2,4,6-Tribromophenol	60.3	0	15-117		%Rec	1	8/11/2017 6:03:09 PM	33127
Surr: Nitrobenzene-d5	72.7	0	33.5-120		%Rec	1	8/11/2017 6:03:09 PM	33127
Surr: 2-Fluorobiphenyl	66.2	0	26.5-109		%Rec	1	8/11/2017 6:03:09 PM	33127
Surr: 4-Terphenyl-d14	55.0	0	21.7-98.7		%Rec	1	8/11/2017 6:03:09 PM	33127

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-003C

Client Sample ID: Rio Grande-South-20170728
Collection Date: 7/28/2017 8:45:00 AM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: EPA METHOD 1664B, N-Hexane Extractable Material, 3.70, 3.69, 9.73, J, mg/L, 1, 8/1/2017, 33094. Analyst: MAB.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-003D

Client Sample ID: Rio Grande-South-20170728
Collection Date: 7/28/2017 8:45:00 AM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: SM 9223B FECAL INDICATOR: E. COLI MPN, 235.9, 1.000, 1.000, MPN/100, 1, 7/29/2017 3:29:00 PM, 33077. Analyst: SMS

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified. Page 11 of 32

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-003E

Client Sample ID: Rio Grande-South-20170728
Collection Date: 7/28/2017 8:45:00 AM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: SM5210B: BOD, Biochemical Oxygen Demand, 2.0, 2.0, 2.0, mg/L, 1, 8/2/2017 3:49:00 PM, 33070. Analyst: SMS

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified. Page 12 of 32

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA  
 Project: CMC  
 Lab ID: 1707E46-003F

Client Sample ID: Rio Grande-South-20170728  
 Collection Date: 7/28/2017 8:45:00 AM  
 Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: MRA	
Nitrogen, Nitrite (As N)	ND	0.0069	0.10		mg/L	1	7/28/2017 3:53:21 PM	R44608
Nitrogen, Nitrate (As N)	0.88	0.022	0.10		mg/L	1	7/28/2017 3:53:21 PM	R44608
<b>SM 4500 NH3: AMMONIA</b>							Analyst: CJS	
Nitrogen, Ammonia	ND	0.40	1.0		mg/L	1	8/2/2017 2:36:00 PM	R44684
<b>SM4500-H+B: PH</b>							Analyst: JRR	
pH	8.20			H	pH units	1	7/31/2017 1:14:40 PM	R44651
<b>EPA METHOD 365.1: TOTAL PHOSPHOROUS</b>							Analyst: CJS	
Phosphorus, Total (As P)	0.33	0.010	0.010		mg/L	1	8/8/2017 1:10:00 PM	33215
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: SRM	
Total Dissolved Solids	248	11.8	20.0		mg/L	1	8/3/2017 12:07:00 PM	33122
<b>SM 4500 NORG C: TKN</b>							Analyst: smb	
Nitrogen, Kjeldahl, Total	0.84	0.44	1.0	J	mg/L	1	8/11/2017 11:11:00 AM	33282
<b>SM 2540D: TSS</b>							Analyst: KS	
Suspended Solids	63	3.9	4.0		mg/L	1	8/3/2017 2:30:00 PM	33138

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-003G

Client Sample ID: Rio Grande-South-20170728
Collection Date: 7/28/2017 8:45:00 AM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Rows include EPA METHOD 200.7: METALS (Calcium, Magnesium) and SM2340B: HARDNESS (Hardness (As CaCO3)).

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, D Sample Diluted Due to Matrix, H Holding times for preparation or analysis exceeded, ND Not Detected at the Reporting Limit, PQL Practical Quantitative Limit, S % Recovery outside of range due to dilution or matrix, B Analyte detected in the associated Method Blank, E Value above quantitation range, J Analyte detected below quantitation limits, P Sample pH Not In Range, RL Reporting Detection Limit, W Sample container temperature is out of limit as specified.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-003H

Client Sample ID: Rio Grande-South-20170728
Collection Date: 7/28/2017 8:45:00 AM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Rows include EPA 200.8: DISSOLVED METALS, Copper, and Lead.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, B Analyte detected in the associated Method Blank, D Sample Diluted Due to Matrix, E Value above quantitation range, H Holding times for preparation or analysis exceeded, J Analyte detected below quantitation limits, ND Not Detected at the Reporting Limit, P Sample pH Not In Range, PQL Practical Quantitative Limit, RL Reporting Detection Limit, S % Recovery outside of range due to dilution or matrix, W Sample container temperature is out of limit as specified.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-004A

Client Sample ID: Rio Grande-North-20170727 FIL
Collection Date: 7/27/2017 12:30:00 PM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: EPA METHOD 365.1: TOTAL PHOSPHOROUS, Analyst: JRR. Row 2: Phosphorus, Total (As P), 0.025, 0.010, 0.010, mg/L, 1, 8/11/2017 12:57:10 PM, 33306.

Dissolved phosphorous - filtered sample

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with columns: Qualifiers, \* Value exceeds Maximum Contaminant Level, B Analyte detected in the associated Method Blank, D Sample Diluted Due to Matrix, E Value above quantitation range, H Holding times for preparation or analysis exceeded, J Analyte detected below quantitation limits, ND Not Detected at the Reporting Limit, P Sample pH Not In Range, PQL Practical Quantitative Limit, RL Reporting Detection Limit, S % Recovery outside of range due to dilution or matrix, W Sample container temperature is out of limit as specified.

Analytical Report

Lab Order: 1707E46

Date Reported: 9/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1707E46-005A

Client Sample ID: Rio Grande-South-20170728 FIL
Collection Date: 7/28/2017 8:45:00 AM
Matrix: Aqueous

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: EPA METHOD 365.1: TOTAL PHOSPHOROUS, 0.25, 0.010, 0.010, mg/L, 1, 8/11/2017 12:58:40 PM, 33306. Analyst: JRR.

Dissolved phosphorous - filtered sample

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with 2 columns: Qualifiers and descriptions. Includes codes like \*, D, H, ND, PQL, S, B, E, J, P, RL, W and their corresponding definitions.



September 12, 2017

Mr. Andy Freeman  
Hall Environmental  
4901 Hawkins NE  
Suite D  
Albuquerque, New Mexico 87109

Re: Routine Analysis  
Work Order: 11143  
SDG: 1707E46

PCB lab report for July 27-28, 2017 was reissued to provide a reporting format consistent with other PCB reports provided for this CMC monitoring. Reissued lab report follows this completed lab report.

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 01, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins  
Project Manager

Purchase Order: IDIQ Pricing  
Enclosures



Collected date/time: 07/27/17 12:30

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
COD	19.9		10.0	1	08/01/2017 23:28	WG1004901

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Collected date/time: 07/27/17 12:30

L925975

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	08/04/2017 14:31	WG1006004

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

Al

<sup>8</sup> Sc



Collected date/time: 07/28/17 08:45

L925975

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	15.0		10.0	1	08/01/2017 23:28	<u>WG1004901</u>





Collected date/time: 07/28/17 08:45

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	mg/l ND		mg/l 0.000500	1	08/04/2017 14:47	<u>WG1006004</u>

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sl

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3238729-1 08/04/17 13:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Hexavalent Chromium	U		0.00015	0.000500

L925975-02 Original Sample (OS) • Duplicate (DUP)

(OS) L925975-02 08/04/17 14:31 • (DUP) R3238729-4 08/04/17 14:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	0.000	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3238729-2 08/04/17 13:31 • (LCSD) R3238729-3 08/04/17 13:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.00200	0.00200	0.00199	100	99	90-110			1	20

L926000-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L926000-03 08/04/17 15:28 • (MS) R3238729-5 08/04/17 15:36 • (MSD) R3238729-6 08/04/17 15:45

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.0500	0.0120	0.0628	0.0630	101	102	1	90-110			0	20

Tc

Ss

Cn

Sn

Qc

Gl

Al

Sc



Method Blank (MB)

(MB) R3237807-1 08/01/17 23:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
COD	U		3	10.0

L926102-01 Original Sample (OS) • Duplicate (DUP)

(OS) L926102-01 08/01/17 23:31 • (DUP) R3237807-7 08/01/17 23:31

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
COD	10.5	11.0	1	5		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3237807-2 08/01/17 23:26 • (LCSD) R3237807-3 08/01/17 23:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
COD	242	241	239	100	99	90-110			1	20

L925999-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L925999-01 08/01/17 23:28 • (MS) R3237807-5 08/01/17 23:29 • (MSD) R3237807-6 08/01/17 23:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
COD	400	92.8	471	477	95	96	1	80-120			1	20

1  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc



## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 1707E46  
Pace Project No.: 30225841

<b>Sample: 1707E46-001L Rio Grande-North-</b>		<b>Lab ID: 30225841001</b>	Collected: 07/27/17 12:30	Received: 08/01/17 09:55	Matrix: Water	
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	<b>2.06 ± 1.60 (2.88)</b> C:NA T:NA	pCi/L	08/16/17 08:36	12587-46-1	

<b>Sample: 1707E46-003L Rio Grande-South-</b>		<b>Lab ID: 30225841002</b>	Collected: 07/28/17 08:45	Received: 08/01/17 09:55	Matrix: Water	
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	<b>2.15 ± 1.31 (1.90)</b> C:NA T:NA	pCi/L	08/16/17 08:36	12587-46-1	

**REPORT OF LABORATORY ANALYSIS**

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without the written consent of Pace Analytical Services, LLC.



## QUALIFIERS

Project: 1707E46  
Pace Project No.: 30225841

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-33094</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 1664B</b>								
Client ID: <b>PBW</b>	Batch ID: <b>33094</b>	RunNo: <b>44643</b>								
Prep Date: <b>8/1/2017</b>	Analysis Date: <b>8/1/2017</b>	SeqNo: <b>1414653</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10.0								

Sample ID <b>LCS-33094</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 1664B</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>33094</b>	RunNo: <b>44643</b>								
Prep Date: <b>8/1/2017</b>	Analysis Date: <b>8/1/2017</b>	SeqNo: <b>1414654</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	35.8	10.0	40.00	0	89.5	78	114			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID	<b>MB-33360</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 200.7: Metals</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>33360</b>	RunNo:	<b>45008</b>					
Prep Date:	<b>8/14/2017</b>	Analysis Date:	<b>8/16/2017</b>	SeqNo:	<b>1424221</b>	Units:	<b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID	<b>LLCS-33360</b>	SampType:	<b>LCSLL</b>	TestCode:	<b>EPA Method 200.7: Metals</b>					
Client ID:	<b>BatchQC</b>	Batch ID:	<b>33360</b>	RunNo:	<b>45008</b>					
Prep Date:	<b>8/14/2017</b>	Analysis Date:	<b>8/16/2017</b>	SeqNo:	<b>1424222</b>	Units:	<b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.50	1.0	0.5000	0	101	50	150			J
Magnesium	0.51	1.0	0.5000	0	103	50	150			J

Sample ID	<b>LCS-33360</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 200.7: Metals</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>33360</b>	RunNo:	<b>45008</b>					
Prep Date:	<b>8/14/2017</b>	Analysis Date:	<b>8/16/2017</b>	SeqNo:	<b>1424223</b>	Units:	<b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	51	1.0	50.00	0	102	85	115			
Magnesium	49	1.0	50.00	0	98.5	85	115			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA  
**Project:** CMC

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>D44683</b>		RunNo: <b>44683</b>							
Prep Date:	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1413497</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	92.4	85	115			

Sample ID <b>LLLCS</b>	SampType: <b>LCSLL</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>D44683</b>		RunNo: <b>44683</b>							
Prep Date:	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1413500</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00048	0.00050	0.0005000	0	95.4	50	150			J

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>D44683</b>		RunNo: <b>44683</b>							
Prep Date:	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1413503</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>B44712</b>		RunNo: <b>44712</b>							
Prep Date:	Analysis Date: <b>8/3/2017</b>		SeqNo: <b>1414078</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	94.3	85	115			

Sample ID <b>LLLCS</b>	SampType: <b>LCSLL</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>BatchQC</b>	Batch ID: <b>B44712</b>		RunNo: <b>44712</b>							
Prep Date:	Analysis Date: <b>8/3/2017</b>		SeqNo: <b>1414079</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0014	0.0010	0.001000	0	144	50	150			

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA 200.8: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>B44712</b>		RunNo: <b>44712</b>							
Prep Date:	Analysis Date: <b>8/3/2017</b>		SeqNo: <b>1414080</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R44608</b>		RunNo: <b>44608</b>							
Prep Date:	Analysis Date: <b>7/28/2017</b>		SeqNo: <b>1410086</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R44608</b>		RunNo: <b>44608</b>							
Prep Date:	Analysis Date: <b>7/28/2017</b>		SeqNo: <b>1410087</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.93	0.10	1.000	0	93.2	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.7	90	110			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA  
**Project:** CMC

Sample ID 1707e46-001bms		SampType: MS		TestCode: EPA Method 8270C: Semivolatiles						
Client ID: Rio Grande-North-2		Batch ID: 33127		RunNo: 44929						
Prep Date: 8/2/2017		Analysis Date: 8/11/2017		SeqNo: 1421011			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	66	10	100.0	0	65.5	18.1	108			
4-Chloro-3-methylphenol	120	10	200.0	0	59.4	15	111			
2-Chlorophenol	130	10	200.0	0	65.0	15	113			
1,4-Dichlorobenzene	66	10	100.0	0	66.2	21	81.3			
2,4-Dinitrotoluene	57	10	100.0	0	57.4	27.4	101			
N-Nitrosodi-n-propylamine	74	10	100.0	0	73.7	24.9	107			
4-Nitrophenol	77	10	200.0	0	38.6	15	62.2			
Pentachlorophenol	100	20	200.0	0	51.5	15	96.9			
Phenol	71	10	200.0	0	35.6	15	64.7			
Pyrene	74	10	100.0	0	73.9	29.2	111			
1,2,4-Trichlorobenzene	76	10	100.0	0	75.8	22.9	94.8			
Surr: 2-Fluorophenol	94		200.0		46.8	15	88			
Surr: Phenol-d5	73		200.0		36.7	15	72.4			
Surr: 2,4,6-Tribromophenol	130		200.0		63.1	15	117			
Surr: Nitrobenzene-d5	82		100.0		81.5	33.5	120			
Surr: 2-Fluorobiphenyl	78		100.0		78.2	26.5	109			
Surr: 4-Terphenyl-d14	62		100.0		62.2	21.7	98.7			

Sample ID 1707e46-001bmsd		SampType: MSD		TestCode: EPA Method 8270C: Semivolatiles						
Client ID: Rio Grande-North-2		Batch ID: 33127		RunNo: 44929						
Prep Date: 8/2/2017		Analysis Date: 8/11/2017		SeqNo: 1421012			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	60	10	100.0	0	60.0	18.1	108	8.80	30.5	
4-Chloro-3-methylphenol	130	10	200.0	0	62.9	15	111	5.66	50	
2-Chlorophenol	97	10	200.0	0	48.6	15	113	28.9	36.3	
1,4-Dichlorobenzene	46	10	100.0	0	46.3	21	81.3	35.4	42.1	
2,4-Dinitrotoluene	53	10	100.0	0	52.6	27.4	101	8.58	28.5	
N-Nitrosodi-n-propylamine	61	10	100.0	0	60.6	24.9	107	19.5	25.4	
4-Nitrophenol	42	10	200.0	0	21.1	15	62.2	58.4	50	R
Pentachlorophenol	93	20	200.0	0	46.5	15	96.9	10.2	50	
Phenol	57	10	200.0	0	28.5	15	64.7	22.3	46.1	
Pyrene	71	10	100.0	0	71.0	29.2	111	4.06	34.3	
1,2,4-Trichlorobenzene	61	10	100.0	0	60.6	22.9	94.8	22.3	43.6	
Surr: 2-Fluorophenol	67		200.0		33.6	15	88	0	0	
Surr: Phenol-d5	55		200.0		27.7	15	72.4	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		59.9	15	117	0	0	
Surr: Nitrobenzene-d5	64		100.0		64.0	33.5	120	0	0	
Surr: 2-Fluorobiphenyl	63		100.0		62.8	26.5	109	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID	<b>1707e46-001bmsd</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8270C: Semivolatiles</b>					
Client ID:	<b>Rio Grande-North-2</b>	Batch ID:	<b>33127</b>	RunNo:	<b>44929</b>					
Prep Date:	<b>8/2/2017</b>	Analysis Date:	<b>8/11/2017</b>	SeqNo:	<b>1421012</b>	Units:	<b>µg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	56		100.0		55.6	21.7	98.7	0	0	

Sample ID	<b>ics-33127</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8270C: Semivolatiles</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>33127</b>	RunNo:	<b>44929</b>					
Prep Date:	<b>8/2/2017</b>	Analysis Date:	<b>8/11/2017</b>	SeqNo:	<b>1421015</b>	Units:	<b>µg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	70.8	41.2	98.9			
4-Chloro-3-methylphenol	160	10	200.0	0	78.6	29.1	111			
2-Chlorophenol	140	10	200.0	0	69.8	23.3	108			
1,4-Dichlorobenzene	66	10	100.0	0	65.6	29.4	84.5			
2,4-Dinitrotoluene	61	10	100.0	0	61.0	36.6	88.7			
N-Nitrosodi-n-propylamine	83	10	100.0	0	82.7	46.9	106			
4-Nitrophenol	100	10	200.0	0	52.2	15	74.7			
Pentachlorophenol	130	20	200.0	0	63.2	28.1	85.4			
Phenol	100	10	200.0	0	52.2	15	78.2			
Pyrene	89	10	100.0	0	89.0	44.4	96.8			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.8	34.3	89			
Surr: 2-Fluorophenol	120		200.0		58.1	15	88			
Surr: Phenol-d5	110		200.0		54.1	15	72.4			
Surr: 2,4,6-Tribromophenol	150		200.0		74.5	15	117			
Surr: Nitrobenzene-d5	87		100.0		86.6	33.5	120			
Surr: 2-Fluorobiphenyl	76		100.0		76.5	26.5	109			
Surr: 4-Terphenyl-d14	66		100.0		66.5	21.7	98.7			

Sample ID	<b>mb-33127</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8270C: Semivolatiles</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>33127</b>	RunNo:	<b>44929</b>					
Prep Date:	<b>8/2/2017</b>	Analysis Date:	<b>8/11/2017</b>	SeqNo:	<b>1421016</b>	Units:	<b>µg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA  
**Project:** CMC

Sample ID	mb-33127	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	33127	RunNo:	44929					
Prep Date:	8/2/2017	Analysis Date:	8/11/2017	SeqNo:	1421016	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	7.4	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								

**Qualifiers:**

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- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID	mb-33127	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	33127	RunNo:	44929					
Prep Date:	8/2/2017	Analysis Date:	8/11/2017	SeqNo:	1421016	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	100		200.0		51.0	15	88			
Surr: Phenol-d5	90		200.0		44.9	15	72.4			
Surr: 2,4,6-Tribromophenol	130		200.0		66.9	15	117			
Surr: Nitrobenzene-d5	71		100.0		71.1	33.5	120			
Surr: 2-Fluorobiphenyl	65		100.0		65.3	26.5	109			
Surr: 4-Terphenyl-d14	59		100.0		59.2	21.7	98.7			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-33070</b>	SampType: <b>MBLK</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>PBW</b>	Batch ID: <b>33070</b>		RunNo: <b>44761</b>							
Prep Date: <b>7/28/2017</b>	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1415455</b>				Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID <b>MB--33070</b>	SampType: <b>MBLK</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>PBW</b>	Batch ID: <b>33070</b>		RunNo: <b>44761</b>							
Prep Date: <b>7/28/2017</b>	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1415456</b>				Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID <b>LCS-33070</b>	SampType: <b>LCS</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>33070</b>		RunNo: <b>44761</b>							
Prep Date: <b>7/28/2017</b>	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1415457</b>				Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	150	2.0	198.0	0	74.0	58.5	126			

Sample ID <b>LCSD-33070</b>	SampType: <b>LCSD</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>LCSS02</b>	Batch ID: <b>33070</b>		RunNo: <b>44761</b>							
Prep Date: <b>7/28/2017</b>	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1415458</b>				Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	150	2.0	198.0	0	74.7	58.5	126	1.02	34.6	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

Client: AMAFCA

Project: CMC

Sample ID	MB-33077	SampType:	MBLK	TestCode:	SM 9223B Fecal Indicator: E. coli MPN					
Client ID:	PBW	Batch ID:	33077	RunNo:	44737					
Prep Date:	7/28/2017	Analysis Date:	7/29/2017	SeqNo:	1414707	Units:	MPN/100mL			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>SM 4500 NH3: Ammonia</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R44684</b>		RunNo: <b>44684</b>							
Prep Date:	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1412888</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>SM 4500 NH3: Ammonia</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R44684</b>		RunNo: <b>44684</b>							
Prep Date:	Analysis Date: <b>8/2/2017</b>		SeqNo: <b>1412889</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.9	1.0	10.00	0	99.4	80	120			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-33215</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>PBW</b>	Batch ID: <b>33215</b>		RunNo: <b>44794</b>							
Prep Date: <b>8/7/2017</b>	Analysis Date: <b>8/8/2017</b>		SeqNo: <b>1416272</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID <b>LCS-33215</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>33215</b>		RunNo: <b>44794</b>							
Prep Date: <b>8/7/2017</b>	Analysis Date: <b>8/8/2017</b>		SeqNo: <b>1416273</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.24	0.010	0.2500	0	94.2	90	110			

Sample ID <b>MB-33306</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>PBW</b>	Batch ID: <b>33306</b>		RunNo: <b>44899</b>							
Prep Date: <b>8/10/2017</b>	Analysis Date: <b>8/11/2017</b>		SeqNo: <b>1419952</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID <b>LCS-33306</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>33306</b>		RunNo: <b>44899</b>							
Prep Date: <b>8/10/2017</b>	Analysis Date: <b>8/11/2017</b>		SeqNo: <b>1419953</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.24	0.010	0.2500	0	94.4	90	110			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-33122</b>	SampType: <b>MBLK</b>	TestCode: <b>SM2540C MOD: Total Dissolved Solids</b>								
Client ID: <b>PBW</b>	Batch ID: <b>33122</b>	RunNo: <b>44703</b>								
Prep Date: <b>8/1/2017</b>	Analysis Date: <b>8/3/2017</b>	SeqNo: <b>1413722</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID <b>LCS-33122</b>	SampType: <b>LCS</b>	TestCode: <b>SM2540C MOD: Total Dissolved Solids</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>33122</b>	RunNo: <b>44703</b>								
Prep Date: <b>8/1/2017</b>	Analysis Date: <b>8/3/2017</b>	SeqNo: <b>1413723</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-33282</b>	SampType: <b>MBLK</b>	TestCode: <b>SM 4500 Norg C: TKN</b>								
Client ID: <b>PBW</b>	Batch ID: <b>33282</b>	RunNo: <b>44897</b>								
Prep Date: <b>8/9/2017</b>	Analysis Date: <b>8/11/2017</b>	SeqNo: <b>1419895</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID <b>LCS-33282</b>	SampType: <b>LCS</b>	TestCode: <b>SM 4500 Norg C: TKN</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>33282</b>	RunNo: <b>44897</b>								
Prep Date: <b>8/9/2017</b>	Analysis Date: <b>8/11/2017</b>	SeqNo: <b>1419896</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.9	1.0	10.00	0	99.4	80	120			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1707E46

21-Sep-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-33138</b>	SampType: <b>MBLK</b>		TestCode: <b>SM 2540D: TSS</b>							
Client ID: <b>PBW</b>	Batch ID: <b>33138</b>		RunNo: <b>44710</b>							
Prep Date: <b>8/2/2017</b>	Analysis Date: <b>8/3/2017</b>		SeqNo: <b>1413945</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID <b>LCS-33138</b>	SampType: <b>LCS</b>		TestCode: <b>SM 2540D: TSS</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>33138</b>		RunNo: <b>44710</b>							
Prep Date: <b>8/2/2017</b>	Analysis Date: <b>8/3/2017</b>		SeqNo: <b>1413946</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	87	4.0	91.10	0	95.5	84.63	120.75			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1707E46

RcptNo: 1

Received By: Sophia Campuzano 7/28/2017 10:47:00 AM

*Sophia Campuzano*

Completed By: Ashley Gallegos 7/28/2017 10:58:12 AM

*AG*

Reviewed By: ENM 7/28/17 @ 12:15

### Chain of Custody

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Client

### Log In

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA
- 10. VOA vials have zero headspace? Yes  No  No VOA Vials
- 11. Were any sample containers received broken? Yes  No
- 12. Does paperwork match bottle labels? Yes  No   
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
(If no, notify customer for authorization.)

# of preserved bottles checked for pH: 14  
 (≤ or >12 unless noted)  
 Adjusted? NO  
 Checked by: JMO

### Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	Alan Lewis	Date:	7/28/2017
By Whom:	Sophia Campuzano	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input checked="" type="checkbox"/> In Person
Regarding:	High Temp		
Client Instructions:	Proceed with analysis		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.6	Good	Not Present			

# Chain-of-Custody Record

Client: AMAFA

Mailing Address: 2600 Prospect Ave  
Albuquerque, NM 87107

Phone #: 505 884 2215

email or Fax#: pchavez@amafca.org

QA/QC Package:  
 Standard  Level 4 (Full Validation)

Accreditation  
 NELAP  Other \_\_\_\_\_  
 EDD (Type) \_\_\_\_\_

Turn-Around Time:  
 Standard  Rush

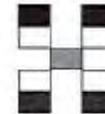
Project Name: CMC

Project #: -

Project Manager: PATRICK CHAVEZ

Sampler:  
On Ice:  Yes  No

Sample Temperature: 9.6



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

### Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. Coli - num	See attached	Diss Phos	Air Bubbles (Y or N)
											X			
											X			
											X			
													X	
													X	

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
7/27/17	1230	AQ	Rio Grande-North-20170727			-001
7/28/17	0715	AQ	ABQRD-East			-002
7/28/17	845	AQ	Rio Grande-South-20170728			-003
07/27	1230	L	Rio Grande North 20170727 Filtered			-004
07/28	845	L	Rio Grande South 20170728 Filtered			-005
			<del>07/28/17</del>			

Date: 7/28 Time: 1047 Relinquished by: ALAN LEWIS

Received by: Sophi Date: 07/28/17 Time: 1047

Remarks:  
High temp approved by client.  
See temp above. See 07/28/17  
\* -001 E. coli Enumeration for -001 submitted 07/27/17 07/28/17

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

**Collaborative Monitoring Cooperative - Analyses List**  
**Attach to Chain of Custody**

Analyte (Bold indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
Hardness (Ca + Mg)	NA	Total	200.7	2.4
<b>Lead</b>	7439-92-1	Dissolved	200.8	0.09
<b>Copper</b>	7440-50-8	Dissolved	200.8	1.06
Ammonia + organic nitrogen	7664-41-7	Total	350.1	31.32
Total Kjehldal Nitrogen	17778-88-0	Total	351.2	58.78
<b>Nitrate + Nitrite</b>	14797-55-8	Total	353.2	10.17
<b>Polychlorinated biphenyls (PCBs)</b>	<b>1336-36-3</b>	<b>Total</b>	<b>1668</b>	<b>0.014</b>
Tetrahydrofuran (THF)	109-99-9	Total	8260C	7.9
bis(2-Ethylhexyl)phthalate	117-81-7	Total	8270D	0.2
Dibenzofuran	132-64-9	Total	8270D	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	Total	8270D	0.2
Benzo(b)fluoranthene	205-99-2	Total	8270D	0.1
Benzo(k)fluoranthene	207-08-9	Total	8270D	0.1
Chrysene	218-01-9	Total	8270D	0.2
Benzo(a)pyrene	50-32-8	Total	8270D	0.3
Dibenzo(a,h)anthracene	53-70-3	Total	8270D	0.3
Benzo(a)anthracene	56-55-3	Total	8270D	0.2
Dieldrin	60-57-1	Total	8270D	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
Chemical Oxygen Demand	E1641638 <sup>2</sup>	Total	HACH	5100
<b>Gross alpha (adjusted)</b>	NA	Total	Method 900	0.1 pCi/L
Total Dissolved Solids	E1642222 <sup>2</sup>	Total	SM 2540C	60.4
Total Suspended Solids	NA	Total	SM 2540D	3450
Biological Oxygen Demand	N/A	Total	Standard Methods	930
Oil and Grease		Total	1664A	5000
Ecoli - num			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

**Appendix F - Minimum Quantification Levels (MQL's)**

The following Minimum Quantification Levels (MQL's) are to be used for reporting pollutant data for NPDES permit applications and/or compliance reporting.

POLLUTANTS	MQL µg/l	POLLUTANTS	MQL µg/l
<b>METALS, RADIOACTIVITY, CYANIDE and CHLORINE</b>			
Aluminum	2.5	Molybdenum	10
Antimony	60	Nickel	0.5
Arsenic	0.5	Selenium	5
Barium	100	Silver	0.5
Beryllium	0.5	Thallium	0.5
Boron	100	Uranium	0.1
Cadmium	1	Vanadium	50
Chromium	10	Zinc	20
Cobalt	50	Cyanide	10
Copper	0.5	Cyanide, weak acid dissociable	10
Lead	0.5	Total Residual Chlorine	33
Mercury (*)	0.0005 0.005		
<b>DIOXIN</b>			
2,3,7,8-TCDD	0.00001		
<b>VOLATILE COMPOUNDS</b>			
Acrolein	50	1,3-Dichloropropylene	10
Acrylonitrile	20	Ethylbenzene	10
Benzene	10	Methyl Bromide	50
Bromoform	10	Methylene Chloride	20
Carbon Tetrachloride	2	1,1,2,2-Tetrachloroethane	10
Chlorobenzene	10	Tetrachloroethylene	10
Chlorodibromomethane	10	Toluene	10
Chloroform	50	1,2-trans-Dichloroethylene	10
Dichlorobromomethane	10	1,1,2-Trichloroethane	10
1,2-Dichloroethane	10	Trichloroethylene	10
1,1-Dichloroethylene	10	Vinyl Chloride	10
1,2-Dichloropropane	10		
<b>ACID COMPOUNDS</b>			
2-Chlorophenol	10	2,4-Dinitrophenol	50
2,4-Dichlorophenol	10	Pentachlorophenol	5
2,4-Dimethylphenol	10	Phenol	10
4,6-Dinitro-o-Cresol	50	2,4,6-Trichlorophenol	10



November 02, 2017

Mr. Andy Freeman  
Hall Environmental  
4901 Hawkins NE  
Suite D  
Albuquerque, New Mexico 87109

Re: Routine Analysis  
Work Order: 11143  
SDG: 1707E46

Reissued Lab report for PCB testing of July 27-28, 2017 stormwater samples. Reissued to provide a consistent reporting format with previous CMC reporting.

Dear Mr. Freeman:

Cape Fear Analytical, LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 01, 2017. This revised data report has been prepared and reviewed in accordance with CFA's standard operating procedures. Refer to the fractional case narrative for revision details.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (910) 795-0421.

Sincerely,

Cynde Larkins  
Project Manager

Purchase Order: IDIQ Pricing  
Enclosures



**CHAIN OF CUSTODY RECORD**

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975  
 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

SUB CONTRACTOR: <b>Cape Fear Analytical</b>		COMPANY: <b>Cape Fear Analytical</b>	PHONE: (910) 795-0421	FAX:			
ADDRESS: <b>3306 Kitty Hawk Rd Ste 120</b>			ACCOUNT #:	EMAIL:			
CITY, STATE, ZIP: <b>Wilmington, NC 28405</b>							
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1707E46-001K	Rio Grande-North-20170727		Aqueous	7/27/2017 12:30:00 PM	1	PCB CONGENERS PREP 1668
2	1707E46-003K	Rio Grande-South-20170728		Aqueous	7/28/2017 8:45:00 AM	1	PCB CONGENERS PREP 1668

*CFA WO #11143*

**SPECIAL INSTRUCTIONS / COMMENTS:**

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: <i>ABJ</i>	Date: 7/28/2017	Time: 11:34 AM	Received By: <i>Cynde Larkin</i>	Date: 8/14/17	Time: 1000
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT:	Standard <input type="checkbox"/>	RUSH <input type="checkbox"/>	Next BD <input type="checkbox"/>	2nd BD <input type="checkbox"/>	3rd BD <input type="checkbox"/>

REPORT TRANSMITTAL DESIRED:  
 HARDCOPY (extra cost)  FAX  EMAIL  ONLINE

FOR LAB USE ONLY  
 Temp of samples 0.1 °C Attempt to Cool? \_\_\_\_\_  
 Comments: \_\_\_\_\_

**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: <u>HALL</u>	Work Order: <u>11143</u>
Shipping Company: <u>FedEx</u>	Date/Time Received: <u>01 AUG 17 1000</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		<input checked="" type="checkbox"/>	
Samples < 2x background?		<input checked="" type="checkbox"/>	

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: \_\_\_\_\_

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken    damaged container    leaking container    other(describe)
2 Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
3 Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>			Preservation Method: ice bags    blue ice    dry ice    none    other (describe) <u>3.0° - 2.9 = 0.1°C</u>
4 Aqueous samples found to have visible solids?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: <u>Minimal visible solids</u>
5 Samples requiring chemical preservation at proper pH?				Sample IDs, containers affected and pH observed:  If preservative added, Lot#:
6 Samples requiring preservation have no residual chlorine?				Sample IDs, containers affected:  If preservative added, Lot#:
7 Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
9 Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
10 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			List type and number of containers / Sample IDs, containers affected: <u>2 - 1L WMA per sample</u>
11 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

---

Checklist performed by: Initials: CJ Date: 01 AUG 17

# **PCB Congeners Analysis**

# Case Narrative

**PCBC Case Narrative  
Hall Environmental Analysis Laboratory (HALL)  
SDG 1707E46  
Work Order 11143**

**Revision 1**

This data package has been revised to report results with J flags to the EDL, and report non-detects as ND.

**Method/Analysis Information**

**Product:** PCB Congeners by EPA Method 1668A in Liquids  
Analytical Method: EPA Method 1668A  
Extraction Method: SW846 3520C  
Analytical Batch Number: 35299  
Clean Up Batch Number: 35298  
Extraction Batch Number: 35297

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

<b>Sample ID</b>	<b>Client ID</b>
11143001	1707E46-001K Rio Grande-North-20170727
11143002	1707E46-003K Rio Grande-South-20170728
12019228	Method Blank (MB)
12019229	Laboratory Control Sample (LCS)
12019230	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

**Calibration Information**

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

One surrogate recovered outside the acceptance limits. 12019230 (LCSD).

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

### **Technical Information**

#### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

The samples in this SDG did not require dilutions.

#### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

### **Miscellaneous Information**

**Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

**Manual Integrations**

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

**System Configuration**

This analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# **Sample Data Summary**

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Certificate of Analysis Report for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 1707E46 CFA Work Order: 11143

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

**Signature:** 

**Name:** Heather Patterson

**Date:** 02 NOV 2017

**Title:** Group Leader

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	8.16	21.8
2051-61-8	2-MoCB	U	ND	pg/L	7.75	21.8
2051-62-9	3-MoCB	U	ND	pg/L	6.55	21.8
13029-08-8	4-DiCB	U	ND	pg/L	27.7	21.8
16605-91-7	5-DiCB	U	ND	pg/L	16.7	21.8
25569-80-6	6-DiCB	U	ND	pg/L	13.6	21.8
33284-50-3	7-DiCB	U	ND	pg/L	15.0	21.8
34883-43-7	8-DiCB	U	ND	pg/L	12.5	21.8
34883-39-1	9-DiCB	U	ND	pg/L	16.1	21.8
33146-45-1	10-DiCB	U	ND	pg/L	15.7	21.8
2050-67-1	11-DiCB	J	47.1	pg/L	15.3	109
2974-92-7	12-DiCB	CU	ND	pg/L	14.6	43.6
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	14.6	21.8
2050-68-2	15-DiCB	U	ND	pg/L	14.2	21.8
38444-78-9	16-TrCB	U	ND	pg/L	6.48	21.8
37680-66-3	17-TrCB	U	ND	pg/L	6.70	21.8
37680-65-2	18-TrCB	CU	ND	pg/L	5.83	43.6
38444-73-4	19-TrCB	U	ND	pg/L	7.46	21.8
38444-84-7	20-TrCB	CJ	8.34	pg/L	4.87	43.6
55702-46-0	21-TrCB	CU	ND	pg/L	4.74	43.6
38444-85-8	22-TrCB	U	ND	pg/L	5.06	21.8
55720-44-0	23-TrCB	U	ND	pg/L	4.91	21.8
55702-45-9	24-TrCB	U	ND	pg/L	5.50	21.8
55712-37-3	25-TrCB	U	ND	pg/L	4.23	21.8
38444-81-4	26-TrCB	CU	ND	pg/L	4.71	43.6
38444-76-7	27-TrCB	U	ND	pg/L	5.00	21.8
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	8.25	21.8
38444-77-8	32-TrCB	U	ND	pg/L	4.58	21.8

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	5.15	21.8
37680-69-6	35-TrCB	U	ND	pg/L	6.13	21.8
38444-87-0	36-TrCB	U	ND	pg/L	5.94	21.8
38444-90-5	37-TrCB	U	ND	pg/L	6.20	21.8
53555-66-1	38-TrCB	U	ND	pg/L	6.09	21.8
38444-88-1	39-TrCB	U	ND	pg/L	5.83	21.8
38444-93-8	40-TeCB	CU	ND	pg/L	4.54	43.6
52663-59-9	41-TeCB	U	ND	pg/L	5.70	21.8
36559-22-5	42-TeCB	U	ND	pg/L	4.63	21.8
70362-46-8	43-TeCB	U	ND	pg/L	5.67	21.8
41464-39-5	44-TeCB	CJ	6.63	pg/L	4.58	65.5
70362-45-7	45-TeCB	CU	ND	pg/L	3.38	43.6
41464-47-5	46-TeCB	U	ND	pg/L	3.43	21.8
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	4.93	21.8
41464-40-8	49-TeCB	CU	ND	pg/L	4.26	43.6
62796-65-0	50-TeCB	CU	ND	pg/L	3.21	43.6
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	U	ND	pg/L	5.00	21.8
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	2.36	21.8
74338-24-2	55-TeCB	U	ND	pg/L	3.88	21.8
41464-43-1	56-TeCB	U	ND	pg/L	4.04	21.8
70424-67-8	57-TeCB	U	ND	pg/L	3.84	21.8
41464-49-7	58-TeCB	U	ND	pg/L	4.06	21.8
74472-33-6	59-TeCB	CU	ND	pg/L	3.73	65.5
33025-41-1	60-TeCB	U	ND	pg/L	3.86	21.8
33284-53-6	61-TeCB	CU	ND	pg/L	7.31	87.3
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	3.62	21.8
52663-58-8	64-TeCB	U	ND	pg/L	3.60	21.8

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 3 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	4.50	pg/L	3.64	21.8
73575-53-8	67-TeCB	U	ND	pg/L	3.45	21.8
73575-52-7	68-TeCB	U	ND	pg/L	3.64	21.8
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	3.64	21.8
74338-23-1	73-TeCB	U	ND	pg/L	3.93	21.8
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	3.51	21.8
70362-49-1	78-TeCB	U	ND	pg/L	3.34	21.8
41464-48-6	79-TeCB	U	ND	pg/L	3.16	21.8
33284-52-5	80-TeCB	U	ND	pg/L	3.36	21.8
70362-50-4	81-TeCB	U	ND	pg/L	3.40	21.8
52663-62-4	82-PeCB	U	ND	pg/L	3.47	21.8
60145-20-2	83-PeCB	U	ND	pg/L	4.10	21.8
52663-60-2	84-PeCB	U	ND	pg/L	3.95	21.8
65510-45-4	85-PeCB	CU	ND	pg/L	2.73	65.5
55312-69-1	86-PeCB	CJ	4.50	pg/L	2.90	131
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	3.67	43.6
73575-57-2	89-PeCB	U	ND	pg/L	3.80	21.8
68194-07-0	90-PeCB	CU	ND	pg/L	5.26	65.5
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	3.58	21.8
73575-56-1	93-PeCB	CU	ND	pg/L	3.69	43.6
73575-55-0	94-PeCB	U	ND	pg/L	3.93	21.8
38379-99-6	95-PeCB	U	ND	pg/L	3.56	21.8
73575-54-9	96-PeCB	U	ND	pg/L	1.57	21.8

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 4 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	3.75	43.6
38380-01-7	99-PeCB	U	ND	pg/L	3.30	21.8
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	3.43	21.8
56558-16-8	104-PeCB	U	ND	pg/L	1.62	21.8
32598-14-4	105-PeCB	U	ND	pg/L	2.68	21.8
70424-69-0	106-PeCB	U	ND	pg/L	2.58	21.8
70424-68-9	107-PeCB	U	ND	pg/L	2.55	21.8
70362-41-3	108-PeCB	CU	ND	pg/L	2.71	43.6
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	5.33	pg/L	2.55	43.6
39635-32-0	111-PeCB	U	ND	pg/L	2.51	21.8
74472-36-9	112-PeCB	U	ND	pg/L	2.60	21.8
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	2.84	21.8
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	4.34	21.8
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	2.29	21.8
56558-18-0	121-PeCB	U	ND	pg/L	2.79	21.8
76842-07-4	122-PeCB	U	ND	pg/L	2.77	21.8
65510-44-3	123-PeCB	U	ND	pg/L	2.77	21.8
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	2.68	21.8
39635-33-1	127-PeCB	U	ND	pg/L	2.51	21.8
38380-07-3	128-HxCB	CU	ND	pg/L	3.36	43.6

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 5 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	9.43	pg/L	3.78	65.5
52663-66-8	130-HxCB	U	ND	pg/L	4.32	21.8
61798-70-7	131-HxCB	U	ND	pg/L	4.98	21.8
38380-05-1	132-HxCB	U	ND	pg/L	4.60	21.8
35694-04-3	133-HxCB	U	ND	pg/L	4.21	21.8
52704-70-8	134-HxCB	U	ND	pg/L	5.41	21.8
52744-13-5	135-HxCB	CU	ND	pg/L	3.14	43.6
38411-22-2	136-HxCB	U	ND	pg/L	2.49	21.8
35694-06-5	137-HxCB	U	ND	pg/L	4.02	21.8
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	4.15	43.6
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	3.99	21.8
41411-61-4	142-HxCB	U	ND	pg/L	4.39	21.8
68194-15-0	143-HxCB	U	ND	pg/L	4.28	21.8
68194-14-9	144-HxCB	U	ND	pg/L	3.03	21.8
74472-40-5	145-HxCB	U	ND	pg/L	2.64	21.8
51908-16-8	146-HxCB	U	ND	pg/L	3.78	21.8
68194-13-8	147-HxCB	CJ	4.58	pg/L	4.19	43.6
74472-41-6	148-HxCB	U	ND	pg/L	3.03	21.8
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	2.53	21.8
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	2.47	21.8
35065-27-1	153-HxCB	CJ	8.53	pg/L	3.27	43.6
60145-22-4	154-HxCB	U	ND	pg/L	2.75	21.8
33979-03-2	155-HxCB	U	ND	pg/L	2.51	21.8
38380-08-4	156-HxCB	CU	ND	pg/L	3.64	43.6
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	2.75	21.8
39635-35-3	159-HxCB	U	ND	pg/L	2.79	21.8
41411-62-5	160-HxCB	U	ND	pg/L	3.12	21.8

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 6 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	3.06	21.8
39635-34-2	162-HxCB	U	ND	pg/L	2.88	21.8
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	3.08	21.8
74472-46-1	165-HxCB	U	ND	pg/L	3.54	21.8
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	2.71	21.8
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	2.64	21.8
35065-30-6	170-HpCB	J	4.87	pg/L	3.54	21.8
52663-71-5	171-HpCB	CU	ND	pg/L	3.86	43.6
52663-74-8	172-HpCB	U	ND	pg/L	3.73	21.8
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	3.82	21.8
40186-70-7	175-HpCB	U	ND	pg/L	2.95	21.8
52663-65-7	176-HpCB	U	ND	pg/L	2.49	21.8
52663-70-4	177-HpCB	U	ND	pg/L	3.93	21.8
52663-67-9	178-HpCB	U	ND	pg/L	3.14	21.8
52663-64-6	179-HpCB	U	ND	pg/L	2.47	21.8
35065-29-3	180-HpCB	CJ	14.5	pg/L	3.10	43.6
74472-47-2	181-HpCB	U	ND	pg/L	3.84	21.8
60145-23-5	182-HpCB	U	ND	pg/L	2.95	21.8
52663-69-1	183-HpCB	CU	ND	pg/L	3.69	43.6
74472-48-3	184-HpCB	U	ND	pg/L	2.49	21.8
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	2.64	21.8
52663-68-0	187-HpCB	J	4.02	pg/L	2.92	21.8
74487-85-7	188-HpCB	U	ND	pg/L	2.53	21.8
39635-31-9	189-HpCB	U	ND	pg/L	3.43	21.8
41411-64-7	190-HpCB	U	ND	pg/L	2.77	21.8
74472-50-7	191-HpCB	U	ND	pg/L	2.75	21.8
74472-51-8	192-HpCB	U	ND	pg/L	3.08	21.8

**Comments:****C** Congener has coeluters. When Cxxx, refer to congener number xxx for data**J** Value is estimated**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 7 of 8

SDG Number: 1707E46	Client: HALL001	Project: HALL00113
Lab Sample ID: 11143001	Date Collected: 07/27/2017 12:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 08/01/2017 10:00	
Client ID: 1707E46-001K <b>Rio Grande-North-2</b>		Prep Basis: As Received
Batch ID: 35299	Method: EPA Method 1668A	
Run Date: 08/13/2017 13:53	Analyst: MLS	Instrument: HRP791
Data File: c12aug17a_2-11		Dilution: 1
Prep Batch: 35297	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-AUG-17	Prep Aliquot: 916.4 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	4.60	pg/L	3.56	21.8
52663-78-2	195-OcCB	U	ND	pg/L	3.99	21.8
42740-50-1	196-OcCB	U	ND	pg/L	2.95	21.8
33091-17-7	197-OcCB	CU	ND	pg/L	2.47	43.6
68194-17-2	198-OcCB	CU	ND	pg/L	3.08	43.6
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	2.49	21.8
2136-99-4	202-OcCB	U	ND	pg/L	2.86	21.8
52663-76-0	203-OcCB	U	ND	pg/L	2.88	21.8
74472-52-9	204-OcCB	U	ND	pg/L	2.49	21.8
74472-53-0	205-OcCB	U	ND	pg/L	3.01	21.8
40186-72-9	206-NoCB	U	ND	pg/L	3.58	21.8
52663-79-3	207-NoCB	U	ND	pg/L	3.10	21.8
52663-77-1	208-NoCB	U	ND	pg/L	3.03	21.8
2051-24-3	209-DeCB	U	ND	pg/L	3.60	21.8
1336-36-3	Total PCB Congeners	J	127	pg/L	7.29	21.8

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1050	2180	pg/L	48.1	(15%-150%)
13C-3-MoCB		1220	2180	pg/L	56.0	(15%-150%)
13C-4-DiCB		1290	2180	pg/L	59.3	(25%-150%)
13C-15-DiCB		1690	2180	pg/L	77.2	(25%-150%)
13C-19-TrCB		1580	2180	pg/L	72.5	(25%-150%)
13C-37-TrCB		1840	2180	pg/L	84.1	(25%-150%)
13C-54-TeCB		1820	2180	pg/L	83.5	(25%-150%)
13C-77-TeCB		2580	2180	pg/L	118	(25%-150%)
13C-81-TeCB		2490	2180	pg/L	114	(25%-150%)
13C-104-PeCB		1820	2180	pg/L	83.5	(25%-150%)
13C-105-PeCB		2290	2180	pg/L	105	(25%-150%)
13C-114-PeCB		2230	2180	pg/L	102	(25%-150%)
13C-118-PeCB		2230	2180	pg/L	102	(25%-150%)
13C-123-PeCB		2250	2180	pg/L	103	(25%-150%)
13C-126-PeCB		2790	2180	pg/L	128	(25%-150%)
13C-155-HxCB		1360	2180	pg/L	62.2	(25%-150%)
13C-156-HxCB	C	4210	4360	pg/L	96.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2060	2180	pg/L	94.3	(25%-150%)
13C-169-HxCB		2440	2180	pg/L	112	(25%-150%)
13C-188-HpCB		1210	2180	pg/L	55.4	(25%-150%)
13C-189-HpCB		1650	2180	pg/L	75.5	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143001	<b>Date Collected:</b> 07/27/2017 12:30	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-001K Rio Grande-North-2		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/13/2017 13:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 916.4 mL	

CAS No.	Parname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-202-OcCB			1430	2180	pg/L	65.7 (25%-150%)
13C-205-OcCB			2040	2180	pg/L	93.5 (25%-150%)
13C-206-NoCB			2330	2180	pg/L	107 (25%-150%)
13C-208-NoCB			1880	2180	pg/L	86.0 (25%-150%)
13C-209-DeCB			2430	2180	pg/L	112 (25%-150%)
13C-28-TrCB			1710	2180	pg/L	78.4 (30%-135%)
13C-111-PeCB			2040	2180	pg/L	93.5 (30%-135%)
13C-178-HpCB			2100	2180	pg/L	96.0 (30%-135%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	5.56	22.1
2051-61-8	2-MoCB	U	ND	pg/L	5.23	22.1
2051-62-9	3-MoCB	U	ND	pg/L	4.41	22.1
13029-08-8	4-DiCB	U	ND	pg/L	14.3	22.1
16605-91-7	5-DiCB	U	ND	pg/L	7.31	22.1
25569-80-6	6-DiCB	U	ND	pg/L	5.63	22.1
33284-50-3	7-DiCB	U	ND	pg/L	6.16	22.1
34883-43-7	8-DiCB	U	ND	pg/L	4.90	22.1
34883-39-1	9-DiCB	U	ND	pg/L	6.58	22.1
33146-45-1	10-DiCB	U	ND	pg/L	7.35	22.1
2050-67-1	11-DiCB	U	ND	pg/L	48.4	110
2974-92-7	12-DiCB	CU	ND	pg/L	5.92	44.1
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	6.00	22.1
2050-68-2	15-DiCB	U	ND	pg/L	5.56	22.1
38444-78-9	16-TrCB	U	ND	pg/L	3.47	22.1
37680-66-3	17-TrCB	U	ND	pg/L	3.55	22.1
37680-65-2	18-TrCB	CU	ND	pg/L	4.52	44.1
38444-73-4	19-TrCB	U	ND	pg/L	4.22	22.1
38444-84-7	20-TrCB	CJ	5.76	pg/L	2.38	44.1
55702-46-0	21-TrCB	CU	ND	pg/L	2.32	44.1
38444-85-8	22-TrCB	U	ND	pg/L	2.38	22.1
55720-44-0	23-TrCB	U	ND	pg/L	2.47	22.1
55702-45-9	24-TrCB	U	ND	pg/L	2.83	22.1
55712-37-3	25-TrCB	U	ND	pg/L	2.10	22.1
38444-81-4	26-TrCB	CU	ND	pg/L	2.36	44.1
38444-76-7	27-TrCB	U	ND	pg/L	2.58	22.1
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	4.68	22.1
38444-77-8	32-TrCB	U	ND	pg/L	2.34	22.1

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	2.58	22.1
37680-69-6	35-TrCB	U	ND	pg/L	3.47	22.1
38444-87-0	36-TrCB	U	ND	pg/L	3.44	22.1
38444-90-5	37-TrCB	U	ND	pg/L	3.40	22.1
53555-66-1	38-TrCB	U	ND	pg/L	3.44	22.1
38444-88-1	39-TrCB	U	ND	pg/L	3.38	22.1
38444-93-8	40-TeCB	CU	ND	pg/L	3.55	44.1
52663-59-9	41-TeCB	U	ND	pg/L	4.55	22.1
36559-22-5	42-TeCB	U	ND	pg/L	3.82	22.1
70362-46-8	43-TeCB	U	ND	pg/L	4.64	22.1
41464-39-5	44-TeCB	CJ	7.73	pg/L	3.62	66.2
70362-45-7	45-TeCB	CJ	2.45	pg/L	2.19	44.1
41464-47-5	46-TeCB	U	ND	pg/L	2.32	22.1
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	4.02	22.1
41464-40-8	49-TeCB	CJ	3.93	pg/L	3.42	44.1
62796-65-0	50-TeCB	CU	ND	pg/L	2.07	44.1
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	8.45	pg/L	3.97	22.1
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.52	22.1
74338-24-2	55-TeCB	U	ND	pg/L	1.79	22.1
41464-43-1	56-TeCB	U	ND	pg/L	1.90	22.1
70424-67-8	57-TeCB	U	ND	pg/L	1.81	22.1
41464-49-7	58-TeCB	U	ND	pg/L	1.92	22.1
74472-33-6	59-TeCB	CU	ND	pg/L	2.94	66.2
33025-41-1	60-TeCB	U	ND	pg/L	1.77	22.1
33284-53-6	61-TeCB	CJ	7.33	pg/L	1.77	88.3
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	1.68	22.1
52663-58-8	64-TeCB	U	ND	pg/L	2.87	22.1

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 3 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	3.05	22.1
73575-53-8	67-TeCB	U	ND	pg/L	1.63	22.1
73575-52-7	68-TeCB	U	ND	pg/L	1.72	22.1
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	1.74	22.1
74338-23-1	73-TeCB	U	ND	pg/L	3.16	22.1
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	1.59	22.1
70362-49-1	78-TeCB	U	ND	pg/L	1.55	22.1
41464-48-6	79-TeCB	U	ND	pg/L	1.41	22.1
33284-52-5	80-TeCB	U	ND	pg/L	1.52	22.1
70362-50-4	81-TeCB	U	ND	pg/L	1.50	22.1
52663-62-4	82-PeCB	U	ND	pg/L	2.43	22.1
60145-20-2	83-PeCB	U	ND	pg/L	2.76	22.1
52663-60-2	84-PeCB	U	ND	pg/L	2.78	22.1
65510-45-4	85-PeCB	CU	ND	pg/L	1.90	66.2
55312-69-1	86-PeCB	CJ	5.85	pg/L	2.03	132
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	2.63	44.1
73575-57-2	89-PeCB	U	ND	pg/L	2.63	22.1
68194-07-0	90-PeCB	CU	ND	pg/L	9.78	66.2
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	2.47	22.1
73575-56-1	93-PeCB	CU	ND	pg/L	2.65	44.1
73575-55-0	94-PeCB	U	ND	pg/L	2.94	22.1
38379-99-6	95-PeCB	J	7.50	pg/L	2.54	22.1
73575-54-9	96-PeCB	U	ND	pg/L	1.13	22.1

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 4 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	2.69	44.1
38380-01-7	99-PeCB	U	ND	pg/L	3.11	22.1
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	2.47	22.1
56558-16-8	104-PeCB	U	ND	pg/L	0.905	22.1
32598-14-4	105-PeCB	U	ND	pg/L	2.94	22.1
70424-69-0	106-PeCB	U	ND	pg/L	1.72	22.1
70424-68-9	107-PeCB	U	ND	pg/L	1.68	22.1
70362-41-3	108-PeCB	CU	ND	pg/L	1.85	44.1
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	10.4	44.1
39635-32-0	111-PeCB	U	ND	pg/L	1.70	22.1
74472-36-9	112-PeCB	U	ND	pg/L	1.72	22.1
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	2.03	22.1
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	6.51	22.1
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	1.55	22.1
56558-18-0	121-PeCB	U	ND	pg/L	1.90	22.1
76842-07-4	122-PeCB	U	ND	pg/L	1.85	22.1
65510-44-3	123-PeCB	U	ND	pg/L	1.92	22.1
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	2.03	22.1
39635-33-1	127-PeCB	U	ND	pg/L	1.59	22.1
38380-07-3	128-HxCB	CU	ND	pg/L	2.30	44.1

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 5 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	21.1	pg/L	2.58	66.2
52663-66-8	130-HxCB	U	ND	pg/L	2.94	22.1
61798-70-7	131-HxCB	U	ND	pg/L	3.44	22.1
38380-05-1	132-HxCB	J	5.78	pg/L	3.29	22.1
35694-04-3	133-HxCB	U	ND	pg/L	2.94	22.1
52704-70-8	134-HxCB	U	ND	pg/L	3.95	22.1
52744-13-5	135-HxCB	CJ	7.68	pg/L	1.90	44.1
38411-22-2	136-HxCB	U	ND	pg/L	2.03	22.1
35694-06-5	137-HxCB	U	ND	pg/L	2.96	22.1
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	2.91	44.1
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	4.55	pg/L	2.67	22.1
41411-61-4	142-HxCB	U	ND	pg/L	3.16	22.1
68194-15-0	143-HxCB	U	ND	pg/L	2.91	22.1
68194-14-9	144-HxCB	U	ND	pg/L	1.77	22.1
74472-40-5	145-HxCB	U	ND	pg/L	1.66	22.1
51908-16-8	146-HxCB	J	3.24	pg/L	2.54	22.1
68194-13-8	147-HxCB	CJ	16.0	pg/L	2.96	44.1
74472-41-6	148-HxCB	U	ND	pg/L	1.83	22.1
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.59	22.1
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.55	22.1
35065-27-1	153-HxCB	CJ	23.8	pg/L	2.30	44.1
60145-22-4	154-HxCB	U	ND	pg/L	1.63	22.1
33979-03-2	155-HxCB	U	ND	pg/L	1.17	22.1
38380-08-4	156-HxCB	CJ	2.14	pg/L	2.05	44.1
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	2.16	22.1
39635-35-3	159-HxCB	U	ND	pg/L	1.48	22.1
41411-62-5	160-HxCB	U	ND	pg/L	2.23	22.1

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 6 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	2.14	22.1
39635-34-2	162-HxCB	U	ND	pg/L	1.50	22.1
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	2.05	22.1
74472-46-1	165-HxCB	U	ND	pg/L	2.43	22.1
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	1.55	22.1
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.50	22.1
35065-30-6	170-HpCB	J	8.45	pg/L	2.38	22.1
52663-71-5	171-HpCB	CJ	2.87	pg/L	2.56	44.1
52663-74-8	172-HpCB	U	ND	pg/L	2.47	22.1
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	7.50	pg/L	2.49	22.1
40186-70-7	175-HpCB	U	ND	pg/L	1.52	22.1
52663-65-7	176-HpCB	U	ND	pg/L	1.35	22.1
52663-70-4	177-HpCB	U	ND	pg/L	5.14	22.1
52663-67-9	178-HpCB	U	ND	pg/L	2.14	22.1
52663-64-6	179-HpCB	U	ND	pg/L	3.38	22.1
35065-29-3	180-HpCB	CJ	24.1	pg/L	2.07	44.1
74472-47-2	181-HpCB	U	ND	pg/L	2.52	22.1
60145-23-5	182-HpCB	U	ND	pg/L	1.52	22.1
52663-69-1	183-HpCB	CJ	6.91	pg/L	2.49	44.1
74472-48-3	184-HpCB	U	ND	pg/L	1.32	22.1
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.39	22.1
52663-68-0	187-HpCB	J	9.40	pg/L	1.52	22.1
74487-85-7	188-HpCB	U	ND	pg/L	1.24	22.1
39635-31-9	189-HpCB	U	ND	pg/L	1.48	22.1
41411-64-7	190-HpCB	J	2.52	pg/L	1.85	22.1
74472-50-7	191-HpCB	U	ND	pg/L	1.83	22.1
74472-51-8	192-HpCB	U	ND	pg/L	2.03	22.1

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 7 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	5.92	pg/L	1.48	22.1
52663-78-2	195-OcCB	U	ND	pg/L	1.88	22.1
42740-50-1	196-OcCB	J	3.18	pg/L	1.63	22.1
33091-17-7	197-OcCB	CU	ND	pg/L	1.37	44.1
68194-17-2	198-OcCB	CJ	4.99	pg/L	1.70	44.1
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.37	22.1
2136-99-4	202-OcCB	U	ND	pg/L	1.50	22.1
52663-76-0	203-OcCB	J	3.93	pg/L	1.61	22.1
74472-52-9	204-OcCB	U	ND	pg/L	1.37	22.1
74472-53-0	205-OcCB	U	ND	pg/L	1.28	22.1
40186-72-9	206-NoCB	J	2.27	pg/L	1.41	22.1
52663-79-3	207-NoCB	U	ND	pg/L	1.19	22.1
52663-77-1	208-NoCB	U	ND	pg/L	1.13	22.1
2051-24-3	209-DeCB	U	ND	pg/L	2.30	22.1
1336-36-3	Total PCB Congeners	J	215	pg/L	7.37	22.1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		990	2210	pg/L	44.9	(15%-150%)
13C-3-MoCB		1200	2210	pg/L	54.3	(15%-150%)
13C-4-DiCB		1300	2210	pg/L	59.0	(25%-150%)
13C-15-DiCB		2240	2210	pg/L	101	(25%-150%)
13C-19-TrCB		1800	2210	pg/L	81.7	(25%-150%)
13C-37-TrCB		1980	2210	pg/L	89.6	(25%-150%)
13C-54-TeCB		1720	2210	pg/L	78.1	(25%-150%)
13C-77-TeCB		2570	2210	pg/L	117	(25%-150%)
13C-81-TeCB		2510	2210	pg/L	114	(25%-150%)
13C-104-PeCB		1880	2210	pg/L	85.3	(25%-150%)
13C-105-PeCB		2040	2210	pg/L	92.4	(25%-150%)
13C-114-PeCB		2040	2210	pg/L	92.4	(25%-150%)
13C-118-PeCB		2070	2210	pg/L	93.9	(25%-150%)
13C-123-PeCB		2100	2210	pg/L	95.3	(25%-150%)
13C-126-PeCB		2400	2210	pg/L	109	(25%-150%)
13C-155-HxCB		1600	2210	pg/L	72.3	(25%-150%)
13C-156-HxCB	C	3970	4410	pg/L	89.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1970	2210	pg/L	89.3	(25%-150%)
13C-169-HxCB		2260	2210	pg/L	102	(25%-150%)
13C-188-HpCB		1440	2210	pg/L	65.1	(25%-150%)
13C-189-HpCB		1670	2210	pg/L	75.6	(25%-150%)

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 8 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 11143002	<b>Date Collected:</b> 07/28/2017 08:45	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668A Water	<b>Date Received:</b> 08/01/2017 10:00	
<b>Client ID:</b> 1707E46-003K Rio Grande-South-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/14/2017 00:19	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 906.1 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-202-OcCB			1570	2210	pg/L	71.3 (25%-150%)
13C-205-OcCB			2040	2210	pg/L	92.3 (25%-150%)
13C-206-NoCB			2340	2210	pg/L	106 (25%-150%)
13C-208-NoCB			1940	2210	pg/L	87.8 (25%-150%)
13C-209-DeCB			2440	2210	pg/L	110 (25%-150%)
13C-28-TrCB			1700	2210	pg/L	77.0 (30%-135%)
13C-111-PeCB			1990	2210	pg/L	90.1 (30%-135%)
13C-178-HpCB			2130	2210	pg/L	96.7 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

# **Quality Control Summary**

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: 1707E46

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019229	LCS for batch 35297	13C-1-MoCB		44.5	(15%-140%)
		13C-3-MoCB		51.5	(15%-140%)
		13C-4-DiCB		52.6	(30%-140%)
		13C-15-DiCB		69.2	(30%-140%)
		13C-19-TrCB		62.6	(30%-140%)
		13C-37-TrCB		77.7	(30%-140%)
		13C-54-TeCB		75.1	(30%-140%)
		13C-77-TeCB		110	(30%-140%)
		13C-81-TeCB		106	(30%-140%)
		13C-104-PeCB		68.5	(30%-140%)
		13C-105-PeCB		89.9	(30%-140%)
		13C-114-PeCB		88.8	(30%-140%)
		13C-118-PeCB		88.3	(30%-140%)
		13C-123-PeCB		89.1	(30%-140%)
		13C-126-PeCB		115	(30%-140%)
		13C-155-HxCB		49.6	(30%-140%)
		13C-156-HxCB	C	84.3	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		80.4	(30%-140%)
		13C-169-HxCB		103	(30%-140%)
		13C-188-HpCB		40.6	(30%-140%)
		13C-189-HpCB		64.2	(30%-140%)
		13C-202-OcCB		50.0	(30%-140%)
		13C-205-OcCB		79.1	(30%-140%)
		13C-206-NoCB		92.4	(30%-140%)
		13C-208-NoCB		70.3	(30%-140%)
		13C-209-DeCB		96.1	(30%-140%)
		13C-28-TrCB		66.6	(40%-125%)
13C-111-PeCB		81.2	(40%-125%)		
13C-178-HpCB		80.7	(40%-125%)		
12019230	LCSD for batch 35297	13C-1-MoCB		51.4	(15%-140%)
		13C-3-MoCB		59.6	(15%-140%)
		13C-4-DiCB		59.3	(30%-140%)
		13C-15-DiCB		75.9	(30%-140%)
		13C-19-TrCB		73.5	(30%-140%)
		13C-37-TrCB		79.5	(30%-140%)
		13C-54-TeCB		84.8	(30%-140%)
		13C-77-TeCB		113	(30%-140%)
		13C-81-TeCB		111	(30%-140%)
		13C-104-PeCB		81.5	(30%-140%)
		13C-105-PeCB		108	(30%-140%)
		13C-114-PeCB		107	(30%-140%)
		13C-118-PeCB		104	(30%-140%)
		13C-123-PeCB		106	(30%-140%)
		13C-126-PeCB		141 *	(30%-140%)
		13C-155-HxCB		57.1	(30%-140%)
		13C-156-HxCB	C	107	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		100	(30%-140%)
		13C-169-HxCB		134	(30%-140%)
13C-188-HpCB		41.2	(30%-140%)		
13C-189-HpCB		73.7	(30%-140%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: 1707E46

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019230	LCSD for batch 35297	13C-202-OcCB		52.7	(30%-140%)
		13C-205-OcCB		93.1	(30%-140%)
		13C-206-NoCB		110	(30%-140%)
		13C-208-NoCB		79.9	(30%-140%)
		13C-209-DeCB		116	(30%-140%)
		13C-28-TrCB		74.7	(40%-125%)
		13C-111-PeCB		93.2	(40%-125%)
		13C-178-HpCB		95.2	(40%-125%)
12019228	MB for batch 35297	13C-1-MoCB		56.2	(15%-150%)
		13C-3-MoCB		61.6	(15%-150%)
		13C-4-DiCB		62.6	(25%-150%)
		13C-15-DiCB		84.6	(25%-150%)
		13C-19-TrCB		73.9	(25%-150%)
		13C-37-TrCB		95.7	(25%-150%)
		13C-54-TeCB		84.1	(25%-150%)
		13C-77-TeCB		130	(25%-150%)
		13C-81-TeCB		129	(25%-150%)
		13C-104-PeCB		80.5	(25%-150%)
		13C-105-PeCB		110	(25%-150%)
		13C-114-PeCB		107	(25%-150%)
		13C-118-PeCB		107	(25%-150%)
		13C-123-PeCB		108	(25%-150%)
		13C-126-PeCB		140	(25%-150%)
		13C-155-HxCB		58.5	(25%-150%)
		13C-156-HxCB		99.7	(25%-150%)
		13C-157-HxCB	C		
		13C-167-HxCB	C156L	96.2	(25%-150%)
		13C-169-HxCB		121	(25%-150%)
		13C-188-HpCB		46.8	(25%-150%)
		13C-189-HpCB		73.6	(25%-150%)
		13C-202-OcCB		58.3	(25%-150%)
		13C-205-OcCB		93.2	(25%-150%)
		13C-206-NoCB		109	(25%-150%)
		13C-208-NoCB		81.2	(25%-150%)
13C-209-DeCB		113	(25%-150%)		
13C-28-TrCB		76.8	(30%-135%)		
13C-111-PeCB		96.9	(30%-135%)		
13C-178-HpCB		96.3	(30%-135%)		
11143001	1707E46-001K Rio Grande-North-20170727	13C-1-MoCB		48.1	(15%-150%)
		13C-3-MoCB		56.0	(15%-150%)
		13C-4-DiCB		59.3	(25%-150%)
		13C-15-DiCB		77.2	(25%-150%)
		13C-19-TrCB		72.5	(25%-150%)
		13C-37-TrCB		84.1	(25%-150%)
		13C-54-TeCB		83.5	(25%-150%)
		13C-77-TeCB		118	(25%-150%)
		13C-81-TeCB		114	(25%-150%)
		13C-104-PeCB		83.5	(25%-150%)
		13C-105-PeCB		105	(25%-150%)
		13C-114-PeCB		102	(25%-150%)
13C-118-PeCB		102	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: 1707E46

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11143001	1707E46-001K Rio Grande-North-20170727	13C-123-PeCB		103	(25%-150%)
		13C-126-PeCB		128	(25%-150%)
		13C-155-HxCB		62.2	(25%-150%)
		13C-156-HxCB	C	96.3	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		94.3	(25%-150%)
		13C-169-HxCB		112	(25%-150%)
		13C-188-HpCB		55.4	(25%-150%)
		13C-189-HpCB		75.5	(25%-150%)
		13C-202-OcCB		65.7	(25%-150%)
		13C-205-OcCB		93.5	(25%-150%)
		13C-206-NoCB		107	(25%-150%)
		13C-208-NoCB		86.0	(25%-150%)
		13C-209-DeCB		112	(25%-150%)
		13C-28-TrCB		78.4	(30%-135%)
		13C-111-PeCB		93.5	(30%-135%)
		13C-178-HpCB		96.0	(30%-135%)
11143002	1707E46-003K Rio Grande-South-20170728	13C-1-MoCB		44.9	(15%-150%)
		13C-3-MoCB		54.3	(15%-150%)
		13C-4-DiCB		59.0	(25%-150%)
		13C-15-DiCB		101	(25%-150%)
		13C-19-TrCB		81.7	(25%-150%)
		13C-37-TrCB		89.6	(25%-150%)
		13C-54-TeCB		78.1	(25%-150%)
		13C-77-TeCB		117	(25%-150%)
		13C-81-TeCB		114	(25%-150%)
		13C-104-PeCB		85.3	(25%-150%)
		13C-105-PeCB		92.4	(25%-150%)
		13C-114-PeCB		92.4	(25%-150%)
		13C-118-PeCB		93.9	(25%-150%)
		13C-123-PeCB		95.3	(25%-150%)
		13C-126-PeCB		109	(25%-150%)
		13C-155-HxCB		72.3	(25%-150%)
		13C-156-HxCB	C	89.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		89.3	(25%-150%)
		13C-169-HxCB		102	(25%-150%)
		13C-188-HpCB		65.1	(25%-150%)
		13C-189-HpCB		75.6	(25%-150%)
		13C-202-OcCB		71.3	(25%-150%)
13C-205-OcCB		92.3	(25%-150%)		
13C-206-NoCB		106	(25%-150%)		
13C-208-NoCB		87.8	(25%-150%)		
13C-209-DeCB		110	(25%-150%)		
13C-28-TrCB		77.0	(30%-135%)		
13C-111-PeCB		90.1	(30%-135%)		
13C-178-HpCB		96.7	(30%-135%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: 1707E46

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 35297

Matrix: WATER

Lab Sample ID: 12019229

Instrument: HRP791

Analysis Date: 08/12/2017 14:59

Dilution: 1

Analyst: MLS

Prep Batch ID: 35297

Batch ID: 35299

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	500	469	93.9	50-150
2051-62-9	LCS 3-MoCB	500	521	104	50-150
13029-08-8	LCS 4-DiCB	500	444	88.7	50-150
2050-68-2	LCS 15-DiCB	500	584	117	50-150
38444-73-4	LCS 19-TrCB	500	475	95	50-150
38444-90-5	LCS 37-TrCB	500	461	92.2	50-150
15968-05-5	LCS 54-TeCB	1000	853	85.3	50-150
32598-13-3	LCS 77-TeCB	1000	923	92.3	50-150
70362-50-4	LCS 81-TeCB	1000	1000	100	50-150
56558-16-8	LCS 104-PeCB	1000	863	86.3	50-150
32598-14-4	LCS 105-PeCB	1000	1090	109	50-150
74472-37-0	LCS 114-PeCB	1000	1050	105	50-150
31508-00-6	LCS 118-PeCB	1000	1020	102	50-150
65510-44-3	LCS 123-PeCB	1000	987	98.7	50-150
57465-28-8	LCS 126-PeCB	1000	1080	108	50-150
33979-03-2	LCS 155-HxCB	1000	941	94.1	50-150
38380-08-4	LCS 156-HxCB	2000	C 2250	113	50-150
69782-90-7	LCS 157-HxCB		C156		
52663-72-6	LCS 167-HxCB	1000	1150	115	50-150
32774-16-6	LCS 169-HxCB	1000	1050	105	50-150
74487-85-7	LCS 188-HpCB	1000	927	92.7	50-150
39635-31-9	LCS 189-HpCB	1000	1090	109	50-150
2136-99-4	LCS 202-OcCB	1500	1460	97.4	50-150
74472-53-0	LCS 205-OcCB	1500	1430	95.5	50-150
40186-72-9	LCS 206-NoCB	1500	1330	88.8	50-150
52663-77-1	LCS 208-NoCB	1500	1460	97.7	50-150
2051-24-3	LCS 209-DeCB	1500	1450	97	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: 1707E46

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 35297

Matrix: WATER

Lab Sample ID: 12019230

Instrument: HRP791

Analysis Date: 08/12/2017 16:07

Dilution: 1

Analyst: MLS

Prep Batch ID: 35297

Batch ID: 35299

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	500	452	90.4	50-150	3.81	0-20
2051-62-9	LCSD 3-MoCB	500	528	106	50-150	1.35	0-20
13029-08-8	LCSD 4-DiCB	500	464	92.8	50-150	4.50	0-20
2050-68-2	LCSD 15-DiCB	500	673	135	50-150	14.1	0-20
38444-73-4	LCSD 19-TrCB	500	485	97	50-150	2.02	0-20
38444-90-5	LCSD 37-TrCB	500	468	93.5	50-150	1.42	0-20
15968-05-5	LCSD 54-TeCB	1000	901	90.1	50-150	5.54	0-20
32598-13-3	LCSD 77-TeCB	1000	948	94.8	50-150	2.67	0-20
70362-50-4	LCSD 81-TeCB	1000	1010	101	50-150	0.587	0-20
56558-16-8	LCSD 104-PeCB	1000	943	94.3	50-150	8.95	0-20
32598-14-4	LCSD 105-PeCB	1000	1100	110	50-150	0.303	0-20
74472-37-0	LCSD 114-PeCB	1000	1070	107	50-150	1.24	0-20
31508-00-6	LCSD 118-PeCB	1000	1030	103	50-150	0.671	0-20
65510-44-3	LCSD 123-PeCB	1000	985	98.5	50-150	0.172	0-20
57465-28-8	LCSD 126-PeCB	1000	1110	111	50-150	2.62	0-20
33979-03-2	LCSD 155-HxCB	1000	935	93.5	50-150	0.663	0-20
38380-08-4	LCSD 156-HxCB	2000	2260	113	50-150	0.0843	0-20
69782-90-7	LCSD 157-HxCB		C156				
52663-72-6	LCSD 167-HxCB	1000	1130	113	50-150	1.48	0-20
32774-16-6	LCSD 169-HxCB	1000	1060	106	50-150	0.252	0-20
74487-85-7	LCSD 188-HpCB	1000	913	91.3	50-150	1.55	0-20
39635-31-9	LCSD 189-HpCB	1000	1090	109	50-150	0.0976	0-20
2136-99-4	LCSD 202-OcCB	1500	1460	97.6	50-150	0.242	0-20
74472-53-0	LCSD 205-OcCB	1500	1430	95.1	50-150	0.439	0-20
40186-72-9	LCSD 206-NoCB	1500	1330	88.7	50-150	0.101	0-20
52663-77-1	LCSD 208-NoCB	1500	1470	98.1	50-150	0.412	0-20
2051-24-3	LCSD 209-DeCB	1500	1440	96.1	50-150	0.950	0-20

## Method Blank Summary

Page 1 of 1

SDG Number: 1707E46  
Client ID: MB for batch 35297  
Lab Sample ID: 12019228  
Column:

Client: HALL001  
Instrument ID: HRP791  
Prep Date: 08-AUG-17

Matrix: WATER  
Data File: c12aug17a-4  
Analyzed: 08/12/17 17:15

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 35297	12019229	c12aug17a-2	08/12/17	1459
02 LCSD for batch 35297	12019230	c12aug17a-3	08/12/17	1607
03 1707E46-001K Rio Grande-North-20170727	11143001	c12aug17a_2-11	08/13/17	1353
04 1707E46-003K Rio Grande-South-20170728	11143002	c12aug17a_3-9	08/14/17	0019

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 12019228		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35297		
<b>Client ID:</b> MB for batch 35297		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/12/2017 17:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	7.00	40.0
2051-61-8	2-MoCB	U	ND	pg/L	7.02	40.0
2051-62-9	3-MoCB	U	ND	pg/L	6.42	20.0
13029-08-8	4-DiCB	U	ND	pg/L	41.3	40.0
16605-91-7	5-DiCB	U	ND	pg/L	24.9	40.0
25569-80-6	6-DiCB	U	ND	pg/L	20.3	20.0
33284-50-3	7-DiCB	U	ND	pg/L	23.5	40.0
34883-43-7	8-DiCB	U	ND	pg/L	19.1	40.0
34883-39-1	9-DiCB	U	ND	pg/L	25.1	40.0
33146-45-1	10-DiCB	U	ND	pg/L	23.9	40.0
2050-67-1	11-DiCB	U	ND	pg/L	24.3	100
2974-92-7	12-DiCB	CU	ND	pg/L	23.7	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	23.2	40.0
2050-68-2	15-DiCB	U	ND	pg/L	23.3	20.0
38444-78-9	16-TrCB	U	ND	pg/L	7.84	20.0
37680-66-3	17-TrCB	U	ND	pg/L	7.70	20.0
37680-65-2	18-TrCB	CU	ND	pg/L	6.60	40.0
38444-73-4	19-TrCB	U	ND	pg/L	8.52	40.0
38444-84-7	20-TrCB	CU	ND	pg/L	5.58	40.0
55702-46-0	21-TrCB	CU	ND	pg/L	5.36	40.0
38444-85-8	22-TrCB	U	ND	pg/L	5.50	20.0
55720-44-0	23-TrCB	U	ND	pg/L	5.68	20.0
55702-45-9	24-TrCB	U	ND	pg/L	5.78	40.0
55712-37-3	25-TrCB	U	ND	pg/L	4.86	20.0
38444-81-4	26-TrCB	CU	ND	pg/L	5.40	40.0
38444-76-7	27-TrCB	U	ND	pg/L	5.82	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	4.98	20.0
38444-77-8	32-TrCB	U	ND	pg/L	5.18	20.0

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 12019228		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35297		
<b>Client ID:</b> MB for batch 35297		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/12/2017 17:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	5.86	20.0
37680-69-6	35-TrCB	U	ND	pg/L	6.32	40.0
38444-87-0	36-TrCB	U	ND	pg/L	5.90	20.0
38444-90-5	37-TrCB	U	ND	pg/L	6.38	20.0
53555-66-1	38-TrCB	U	ND	pg/L	6.14	20.0
38444-88-1	39-TrCB	U	ND	pg/L	6.00	20.0
38444-93-8	40-TeCB	CU	ND	pg/L	5.78	40.0
52663-59-9	41-TeCB	U	ND	pg/L	8.48	20.0
36559-22-5	42-TeCB	U	ND	pg/L	6.26	20.0
70362-46-8	43-TeCB	U	ND	pg/L	7.40	20.0
41464-39-5	44-TeCB	CU	ND	pg/L	6.06	60.0
70362-45-7	45-TeCB	CU	ND	pg/L	4.78	40.0
41464-47-5	46-TeCB	U	ND	pg/L	4.80	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	6.50	20.0
41464-40-8	49-TeCB	CU	ND	pg/L	5.66	40.0
62796-65-0	50-TeCB	CU	ND	pg/L	4.40	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	U	ND	pg/L	6.58	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	3.32	20.0
74338-24-2	55-TeCB	U	ND	pg/L	4.76	20.0
41464-43-1	56-TeCB	U	ND	pg/L	5.00	20.0
70424-67-8	57-TeCB	U	ND	pg/L	4.86	20.0
41464-49-7	58-TeCB	U	ND	pg/L	5.06	20.0
74472-33-6	59-TeCB	CU	ND	pg/L	4.92	60.0
33025-41-1	60-TeCB	U	ND	pg/L	4.72	20.0
33284-53-6	61-TeCB	CU	ND	pg/L	4.72	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	4.50	20.0
52663-58-8	64-TeCB	U	ND	pg/L	4.92	20.0

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 3 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 12019228		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35297		
<b>Client ID:</b> MB for batch 35297		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/12/2017 17:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	4.48	20.0
73575-53-8	67-TeCB	U	ND	pg/L	4.38	20.0
73575-52-7	68-TeCB	U	ND	pg/L	4.56	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	4.62	20.0
74338-23-1	73-TeCB	U	ND	pg/L	5.40	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	4.40	20.0
70362-49-1	78-TeCB	U	ND	pg/L	4.20	20.0
41464-48-6	79-TeCB	U	ND	pg/L	3.86	20.0
33284-52-5	80-TeCB	U	ND	pg/L	4.14	20.0
70362-50-4	81-TeCB	U	ND	pg/L	4.16	20.0
52663-62-4	82-PeCB	U	ND	pg/L	4.12	20.0
60145-20-2	83-PeCB	U	ND	pg/L	4.74	20.0
52663-60-2	84-PeCB	U	ND	pg/L	4.66	20.0
65510-45-4	85-PeCB	CU	ND	pg/L	3.30	60.0
55312-69-1	86-PeCB	CU	ND	pg/L	3.46	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	4.40	40.0
73575-57-2	89-PeCB	U	ND	pg/L	4.42	20.0
68194-07-0	90-PeCB	CJ	4.18	pg/L	3.62	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	4.10	20.0
73575-56-1	93-PeCB	CU	ND	pg/L	4.42	40.0
73575-55-0	94-PeCB	U	ND	pg/L	4.76	20.0
38379-99-6	95-PeCB	U	ND	pg/L	4.28	20.0
73575-54-9	96-PeCB	U	ND	pg/L	2.80	20.0

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 4 of 8

**SDG Number:** 1707E46  
**Lab Sample ID:** 12019228  
**Client Sample:** QC for batch 35297  
**Client ID:** MB for batch 35297  
**Batch ID:** 35299  
**Run Date:** 08/12/2017 17:15  
**Data File:** c12aug17a-4  
**Prep Batch:** 35297  
**Prep Date:** 08-AUG-17

**Client:** HALL001  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3520C  
**Prep Aliquot:** 1000 mL

**Project:** HALL00113  
**Matrix:** WATER  
**Prep Basis:** As Received  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	4.50	40.0
38380-01-7	99-PeCB	U	ND	pg/L	3.80	20.0
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	4.06	20.0
56558-16-8	104-PeCB	U	ND	pg/L	2.70	20.0
32598-14-4	105-PeCB	U	ND	pg/L	3.52	20.0
70424-69-0	106-PeCB	U	ND	pg/L	3.20	20.0
70424-68-9	107-PeCB	U	ND	pg/L	3.20	20.0
70362-41-3	108-PeCB	CU	ND	pg/L	3.48	40.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	3.02	40.0
39635-32-0	111-PeCB	U	ND	pg/L	2.88	20.0
74472-36-9	112-PeCB	U	ND	pg/L	2.94	20.0
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	3.66	20.0
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	3.46	20.0
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	2.66	20.0
56558-18-0	121-PeCB	U	ND	pg/L	3.24	20.0
76842-07-4	122-PeCB	U	ND	pg/L	3.50	20.0
65510-44-3	123-PeCB	U	ND	pg/L	3.60	20.0
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	3.26	20.0
39635-33-1	127-PeCB	U	ND	pg/L	2.96	20.0
38380-07-3	128-HxCB	CU	ND	pg/L	4.74	40.0

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data

**J** Value is estimated

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 5 of 8

**SDG Number:** 1707E46  
**Lab Sample ID:** 12019228  
**Client Sample:** QC for batch 35297  
**Client ID:** MB for batch 35297  
**Batch ID:** 35299  
**Run Date:** 08/12/2017 17:15  
**Data File:** c12aug17a-4  
**Prep Batch:** 35297  
**Prep Date:** 08-AUG-17

**Client:** HALL001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3520C  
**Prep Aliquot:** 1000 mL

**Project:** HALL00113  
**Matrix:** WATER  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	8.36	pg/L	5.34	60.0
52663-66-8	130-HxCB	U	ND	pg/L	6.20	20.0
61798-70-7	131-HxCB	U	ND	pg/L	7.22	20.0
38380-05-1	132-HxCB	U	ND	pg/L	6.96	20.0
35694-04-3	133-HxCB	U	ND	pg/L	6.26	20.0
52704-70-8	134-HxCB	U	ND	pg/L	8.22	20.0
52744-13-5	135-HxCB	CU	ND	pg/L	3.96	40.0
38411-22-2	136-HxCB	U	ND	pg/L	3.14	20.0
35694-06-5	137-HxCB	U	ND	pg/L	6.12	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	6.14	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	5.54	20.0
41411-61-4	142-HxCB	U	ND	pg/L	6.60	20.0
68194-15-0	143-HxCB	U	ND	pg/L	6.22	20.0
68194-14-9	144-HxCB	U	ND	pg/L	3.72	20.0
74472-40-5	145-HxCB	U	ND	pg/L	3.36	20.0
51908-16-8	146-HxCB	U	ND	pg/L	5.38	20.0
68194-13-8	147-HxCB	CU	ND	pg/L	6.30	40.0
74472-41-6	148-HxCB	U	ND	pg/L	4.04	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	3.24	40.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	3.20	20.0
35065-27-1	153-HxCB	CJ	8.08	pg/L	4.82	40.0
60145-22-4	154-HxCB	U	ND	pg/L	3.40	20.0
33979-03-2	155-HxCB	U	ND	pg/L	3.06	20.0
38380-08-4	156-HxCB	CU	ND	pg/L	4.76	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	3.94	20.0
39635-35-3	159-HxCB	U	ND	pg/L	3.64	20.0
41411-62-5	160-HxCB	U	ND	pg/L	4.52	20.0

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 6 of 8

**SDG Number:** 1707E46  
**Lab Sample ID:** 12019228  
**Client Sample:** QC for batch 35297  
**Client ID:** MB for batch 35297  
**Batch ID:** 35299  
**Run Date:** 08/12/2017 17:15  
**Data File:** c12aug17a-4  
**Prep Batch:** 35297  
**Prep Date:** 08-AUG-17

**Client:** HALL001  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3520C  
**Prep Aliquot:** 1000 mL

**Project:** HALL00113  
**Matrix:** WATER  
**Prep Basis:** As Received  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	4.52	20.0
39635-34-2	162-HxCB	U	ND	pg/L	3.72	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	4.24	20.0
74472-46-1	165-HxCB	U	ND	pg/L	5.16	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	3.68	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	3.24	20.0
35065-30-6	170-HpCB	U	ND	pg/L	4.62	40.0
52663-71-5	171-HpCB	CU	ND	pg/L	5.10	40.0
52663-74-8	172-HpCB	U	ND	pg/L	4.86	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	5.16	20.0
40186-70-7	175-HpCB	U	ND	pg/L	3.60	20.0
52663-65-7	176-HpCB	U	ND	pg/L	3.12	20.0
52663-70-4	177-HpCB	U	ND	pg/L	5.30	20.0
52663-67-9	178-HpCB	U	ND	pg/L	3.84	20.0
52663-64-6	179-HpCB	U	ND	pg/L	3.14	20.0
35065-29-3	180-HpCB	CJ	12.8	pg/L	4.06	40.0
74472-47-2	181-HpCB	U	ND	pg/L	5.12	20.0
60145-23-5	182-HpCB	U	ND	pg/L	3.58	40.0
52663-69-1	183-HpCB	CU	ND	pg/L	4.94	40.0
74472-48-3	184-HpCB	U	ND	pg/L	3.12	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	3.30	20.0
52663-68-0	187-HpCB	U	ND	pg/L	3.58	20.0
74487-85-7	188-HpCB	U	ND	pg/L	3.30	20.0
39635-31-9	189-HpCB	U	ND	pg/L	3.88	20.0
41411-64-7	190-HpCB	U	ND	pg/L	3.58	20.0
74472-50-7	191-HpCB	U	ND	pg/L	3.60	20.0
74472-51-8	192-HpCB	U	ND	pg/L	4.02	20.0

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 7 of 8

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 12019228		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35297		
<b>Client ID:</b> MB for batch 35297		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/12/2017 17:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	6.54	pg/L	3.64	40.0
52663-78-2	195-OcCB	U	ND	pg/L	4.04	20.0
42740-50-1	196-OcCB	U	ND	pg/L	4.08	20.0
33091-17-7	197-OcCB	CU	ND	pg/L	3.50	40.0
68194-17-2	198-OcCB	CJ	7.18	pg/L	4.28	40.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	3.52	20.0
2136-99-4	202-OcCB	U	ND	pg/L	4.22	20.0
52663-76-0	203-OcCB	J	5.54	pg/L	3.98	40.0
74472-52-9	204-OcCB	U	ND	pg/L	3.52	20.0
74472-53-0	205-OcCB	U	ND	pg/L	2.94	20.0
40186-72-9	206-NoCB	U	ND	pg/L	3.20	20.0
52663-79-3	207-NoCB	J	4.72	pg/L	2.92	20.0
52663-77-1	208-NoCB	U	ND	pg/L	2.98	20.0
2051-24-3	209-DeCB	J	4.82	pg/L	2.64	20.0
1336-36-3	Total PCB Congeners	J	62.2	pg/L	6.68	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1120	2000	pg/L	56.2	(15%-150%)
13C-3-MoCB		1230	2000	pg/L	61.6	(15%-150%)
13C-4-DiCB		1250	2000	pg/L	62.6	(25%-150%)
13C-15-DiCB		1690	2000	pg/L	84.6	(25%-150%)
13C-19-TrCB		1480	2000	pg/L	73.9	(25%-150%)
13C-37-TrCB		1910	2000	pg/L	95.7	(25%-150%)
13C-54-TeCB		1680	2000	pg/L	84.1	(25%-150%)
13C-77-TeCB		2600	2000	pg/L	130	(25%-150%)
13C-81-TeCB		2570	2000	pg/L	129	(25%-150%)
13C-104-PeCB		1610	2000	pg/L	80.5	(25%-150%)
13C-105-PeCB		2200	2000	pg/L	110	(25%-150%)
13C-114-PeCB		2140	2000	pg/L	107	(25%-150%)
13C-118-PeCB		2130	2000	pg/L	107	(25%-150%)
13C-123-PeCB		2170	2000	pg/L	108	(25%-150%)
13C-126-PeCB		2800	2000	pg/L	140	(25%-150%)
13C-155-HxCB		1170	2000	pg/L	58.5	(25%-150%)
13C-156-HxCB	C	3990	4000	pg/L	99.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1920	2000	pg/L	96.2	(25%-150%)
13C-169-HxCB		2420	2000	pg/L	121	(25%-150%)
13C-188-HpCB		936	2000	pg/L	46.8	(25%-150%)
13C-189-HpCB		1470	2000	pg/L	73.6	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 8 of 8

SDG Number: 1707E46	Client: HALL001	Project: HALL00113
Lab Sample ID: 12019228		Matrix: WATER
Client Sample: QC for batch 35297		
Client ID: MB for batch 35297		Prep Basis: As Received
Batch ID: 35299	Method: EPA Method 1668A	
Run Date: 08/12/2017 17:15	Analyst: MLS	Instrument: HRP791
Data File: c12aug17a-4		Dilution: 1
Prep Batch: 35297	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-AUG-17	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL	
<b>Surrogate/Tracer recovery</b>							
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>	<b>Acceptable Limits</b>
13C-202-OcCB			1170	2000	pg/L	58.3	(25%-150%)
13C-205-OcCB			1860	2000	pg/L	93.2	(25%-150%)
13C-206-NoCB			2170	2000	pg/L	109	(25%-150%)
13C-208-NoCB			1620	2000	pg/L	81.2	(25%-150%)
13C-209-DeCB			2260	2000	pg/L	113	(25%-150%)
13C-28-TrCB			1540	2000	pg/L	76.8	(30%-135%)
13C-111-PeCB			1940	2000	pg/L	96.9	(30%-135%)
13C-178-HpCB			1930	2000	pg/L	96.3	(30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 1707E46  
**Lab Sample ID:** 12019229  
**Client Sample:** QC for batch 35297  
**Client ID:** LCS for batch 35297  
**Batch ID:** 35299  
**Run Date:** 08/12/2017 14:59  
**Data File:** c12aug17a-2  
**Prep Batch:** 35297  
**Prep Date:** 08-AUG-17

**Client:** HALL001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3520C  
**Prep Aliquot:** 1000 mL

**Project:** HALL00113  
**Matrix:** WATER  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		469	pg/L	16.2	40.0
2051-62-9	3-MoCB		521	pg/L	13.1	20.0
13029-08-8	4-DiCB		444	pg/L	40.6	40.0
2050-68-2	15-DiCB		584	pg/L	26.5	20.0
38444-73-4	19-TrCB		475	pg/L	16.1	40.0
38444-90-5	37-TrCB		461	pg/L	15.2	20.0
15968-05-5	54-TeCB		853	pg/L	6.04	20.0
32598-13-3	77-TeCB		923	pg/L	17.4	20.0
70362-50-4	81-TeCB		1000	pg/L	17.1	20.0
56558-16-8	104-PeCB		863	pg/L	6.54	20.0
32598-14-4	105-PeCB		1090	pg/L	17.6	20.0
74472-37-0	114-PeCB		1050	pg/L	17.5	20.0
31508-00-6	118-PeCB		1020	pg/L	17.3	20.0
65510-44-3	123-PeCB		987	pg/L	17.6	20.0
57465-28-8	126-PeCB		1080	pg/L	16.5	20.0
33979-03-2	155-HxCB		941	pg/L	4.70	20.0
38380-08-4	156-HxCB	C	2250	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1150	pg/L	10.3	20.0
32774-16-6	169-HxCB		1050	pg/L	9.20	20.0
74487-85-7	188-HpCB		927	pg/L	5.48	20.0
39635-31-9	189-HpCB		1090	pg/L	5.48	20.0
2136-99-4	202-OcCB		1460	pg/L	4.96	20.0
74472-53-0	205-OcCB		1430	pg/L	4.02	20.0
40186-72-9	206-NoCB		1330	pg/L	4.02	20.0
52663-77-1	208-NoCB		1460	pg/L	3.52	20.0
2051-24-3	209-DeCB		1450	pg/L	2.90	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		890	2000	pg/L	44.5	(15%-140%)
13C-3-MoCB		1030	2000	pg/L	51.5	(15%-140%)
13C-4-DiCB		1050	2000	pg/L	52.6	(30%-140%)
13C-15-DiCB		1380	2000	pg/L	69.2	(30%-140%)
13C-19-TrCB		1250	2000	pg/L	62.6	(30%-140%)
13C-37-TrCB		1550	2000	pg/L	77.7	(30%-140%)
13C-54-TeCB		1500	2000	pg/L	75.1	(30%-140%)
13C-77-TeCB		2210	2000	pg/L	110	(30%-140%)
13C-81-TeCB		2120	2000	pg/L	106	(30%-140%)
13C-104-PeCB		1370	2000	pg/L	68.5	(30%-140%)
13C-105-PeCB		1800	2000	pg/L	89.9	(30%-140%)
13C-114-PeCB		1780	2000	pg/L	88.8	(30%-140%)
13C-118-PeCB		1770	2000	pg/L	88.3	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 12019229		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35297		
<b>Client ID:</b> LCS for batch 35297		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/12/2017 14:59	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-123-PeCB			1780	2000	pg/L	89.1 (30%-140%)
13C-126-PeCB			2310	2000	pg/L	115 (30%-140%)
13C-155-HxCB			993	2000	pg/L	49.6 (30%-140%)
13C-156-HxCB		C	3370	4000	pg/L	84.3 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			1610	2000	pg/L	80.4 (30%-140%)
13C-169-HxCB			2060	2000	pg/L	103 (30%-140%)
13C-188-HpCB			812	2000	pg/L	40.6 (30%-140%)
13C-189-HpCB			1280	2000	pg/L	64.2 (30%-140%)
13C-202-OcCB			1000	2000	pg/L	50.0 (30%-140%)
13C-205-OcCB			1580	2000	pg/L	79.1 (30%-140%)
13C-206-NoCB			1850	2000	pg/L	92.4 (30%-140%)
13C-208-NoCB			1410	2000	pg/L	70.3 (30%-140%)
13C-209-DeCB			1920	2000	pg/L	96.1 (30%-140%)
13C-28-TrCB			1330	2000	pg/L	66.6 (40%-125%)
13C-111-PeCB			1620	2000	pg/L	81.2 (40%-125%)
13C-178-HpCB			1610	2000	pg/L	80.7 (40%-125%)

**Comments:**  
**C Congener has coeluters. When Cxxx, refer to congener number xxx for data**

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 1707E46  
**Lab Sample ID:** 12019230  
**Client Sample:** QC for batch 35297  
**Client ID:** LCSD for batch 35297  
**Batch ID:** 35299  
**Run Date:** 08/12/2017 16:07  
**Data File:** c12aug17a-3  
**Prep Batch:** 35297  
**Prep Date:** 08-AUG-17

**Client:** HALL001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3520C  
**Prep Aliquot:** 1000 mL

**Project:** HALL00113  
**Matrix:** WATER  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		452	pg/L	17.5	40.0
2051-62-9	3-MoCB		528	pg/L	14.4	20.0
13029-08-8	4-DiCB		464	pg/L	38.9	40.0
2050-68-2	15-DiCB		673	pg/L	29.6	20.0
38444-73-4	19-TrCB		485	pg/L	14.8	40.0
38444-90-5	37-TrCB		468	pg/L	18.1	20.0
15968-05-5	54-TeCB		901	pg/L	8.04	20.0
32598-13-3	77-TeCB		948	pg/L	22.3	20.0
70362-50-4	81-TeCB		1010	pg/L	23.0	20.0
56558-16-8	104-PeCB		943	pg/L	9.18	20.0
32598-14-4	105-PeCB		1100	pg/L	20.1	20.0
74472-37-0	114-PeCB		1070	pg/L	20.1	20.0
31508-00-6	118-PeCB		1030	pg/L	20.6	20.0
65510-44-3	123-PeCB		985	pg/L	19.9	20.0
57465-28-8	126-PeCB		1110	pg/L	18.8	20.0
33979-03-2	155-HxCB		935	pg/L	6.88	20.0
38380-08-4	156-HxCB	C	2260	pg/L	19.7	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1130	pg/L	15.4	20.0
32774-16-6	169-HxCB		1060	pg/L	12.8	20.0
74487-85-7	188-HpCB		913	pg/L	378	20.0
39635-31-9	189-HpCB		1090	pg/L	6.14	20.0
2136-99-4	202-OcCB		1460	pg/L	6.86	20.0
74472-53-0	205-OcCB		1430	pg/L	5.26	20.0
40186-72-9	206-NoCB		1330	pg/L	4.00	20.0
52663-77-1	208-NoCB		1470	pg/L	3.74	20.0
2051-24-3	209-DeCB		1440	pg/L	2.70	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1030	2000	pg/L	51.4	(15%-140%)
13C-3-MoCB		1190	2000	pg/L	59.6	(15%-140%)
13C-4-DiCB		1190	2000	pg/L	59.3	(30%-140%)
13C-15-DiCB		1520	2000	pg/L	75.9	(30%-140%)
13C-19-TrCB		1470	2000	pg/L	73.5	(30%-140%)
13C-37-TrCB		1590	2000	pg/L	79.5	(30%-140%)
13C-54-TeCB		1700	2000	pg/L	84.8	(30%-140%)
13C-77-TeCB		2260	2000	pg/L	113	(30%-140%)
13C-81-TeCB		2230	2000	pg/L	111	(30%-140%)
13C-104-PeCB		1630	2000	pg/L	81.5	(30%-140%)
13C-105-PeCB		2170	2000	pg/L	108	(30%-140%)
13C-114-PeCB		2130	2000	pg/L	107	(30%-140%)
13C-118-PeCB		2070	2000	pg/L	104	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1707E46	<b>Client:</b> HALL001	<b>Project:</b> HALL00113
<b>Lab Sample ID:</b> 12019230		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35297		
<b>Client ID:</b> LCSD for batch 35297		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 35299	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 08/12/2017 16:07	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c12aug17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35297	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 08-AUG-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%      Acceptable Limits</b>
13C-123-PeCB			2110	2000	pg/L	106      (30%-140%)
13C-126-PeCB			2830	2000	pg/L	141 *      (30%-140%)
13C-155-HxCB			1140	2000	pg/L	57.1      (30%-140%)
13C-156-HxCB		C	4270	4000	pg/L	107      (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			2000	2000	pg/L	100      (30%-140%)
13C-169-HxCB			2680	2000	pg/L	134      (30%-140%)
13C-188-HpCB			824	2000	pg/L	41.2      (30%-140%)
13C-189-HpCB			1470	2000	pg/L	73.7      (30%-140%)
13C-202-OcCB			1050	2000	pg/L	52.7      (30%-140%)
13C-205-OcCB			1860	2000	pg/L	93.1      (30%-140%)
13C-206-NoCB			2200	2000	pg/L	110      (30%-140%)
13C-208-NoCB			1600	2000	pg/L	79.9      (30%-140%)
13C-209-DeCB			2330	2000	pg/L	116      (30%-140%)
13C-28-TrCB			1490	2000	pg/L	74.7      (40%-125%)
13C-111-PeCB			1860	2000	pg/L	93.2      (40%-125%)
13C-178-HpCB			1900	2000	pg/L	95.2      (40%-125%)

**Comments:**  
**C Congener has coeluters. When Cxxx, refer to congener number xxx for data**



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 02, 2017

Patrick Chavez  
AMAFCA  
2600 Prospect Ave NE  
Albuquerque, NM 87107  
TEL: (505) 884-2215  
FAX

Sept. 27, 2017 Rio Grande  
North - E. coli result

RE: CMC

OrderNo.: 1709F09

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/27/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1709F09

Date Reported: 10/2/2017

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North-20170927

Project: CMC

Collection Date: 9/27/2017 12:00:00 PM

Lab ID: 1709F09-001

Matrix: AQUEOUS

Received Date: 9/27/2017 12:30:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>						Analyst: SMS
E. Coli	733	10.00		MPN/100mL	10	9/28/2017 6:51:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1709F09**

RcptNo: **1**

Received By: **Anne Thorne**

9/27/2017 12:30:00 PM

*Anne Thorne*

Completed By: **Anne Thorne**

9/27/2017 12:45:42 PM

*Anne Thorne*

Reviewed By:

*AT 09/27/17*

### Chain of Custody

1. Custody seals intact on sample bottles? Yes  No  Not Present
2. Is Chain of Custody complete? Yes  No  Not Present
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes  No  NA
5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA   
Samples were collected the same day and chilled.
6. Sample(s) in proper container(s)? Yes  No
7. Sufficient sample volume for indicated test(s)? Yes  No
8. Are samples (except VOA and ONG) properly preserved? Yes  No
9. Was preservative added to bottles? Yes  No  NA
10. VOA vials have zero headspace? Yes  No  No VOA Vials
11. Were any sample containers received broken? Yes  No
12. Does paperwork match bottle labels? Yes  No   
 (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes  No
14. Is it clear what analyses were requested? Yes  No
15. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted) Adjusted? _____ Checked by: _____
--

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified: _____	Date: _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	17.9	Good	Not Present			





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 02, 2017

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

Sept. 27, 2017 Rio Grande  
at Alameda Pre-storm - E.  
coli result

RE: ALAMEDA CMC

OrderNo.: 1709F01

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/27/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1709F01

Date Reported: 10/2/2017

CLIENT: AMAFCA

Client Sample ID: ALAMEDA PRE STORM

Project: ALAMEDA CMC

Collection Date: 9/27/2017 10:30:00 AM

Lab ID: 1709F01-001

Matrix: AQUEOUS

Received Date: 9/27/2017 10:54:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>							Analyst: SMS
E. Coli	218	10.00		MPN/100mL	10	9/28/2017 2:48:00 PM	34107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1709F01

RcptNo: 1

Received By: **Sophia Campuzano** 9/27/2017 10:54:00 AM *Sophia Campuzano*  
 Completed By: **Sophia Campuzano** 9/27/2017 11:08:14 AM *Sophia Campuzano*  
 Reviewed By: **EUM** 9/27/17

### Chain of Custody

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Client

### Log In

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA   
**Samples were collected the same day and chilled.**
- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA
- 10. VOA vials have zero headspace? Yes  No  No VOA Vials
- 11. Were any sample containers received broken? Yes  No
- 12. Does paperwork match bottle labels? Yes  No   
 (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

### Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified: _____	Date: _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	13.3	Good	Not Present			



# Bernalillo WWTP

## E. coli WORKSHEET

Time of Sampling: 10:00 PM Time of Arrival: 10:23 PM  
 Type of Sample: Grab Sample Instantaneous Flow: MGD  
 Exact Location: EFF WW River flow  
 Method Used: Hach m-ColiBlue 24 EPA Approved Method

Refrigerator Temperature: 4 °C  
(Samples must be stored at <6°C)

In Incubator:  
 Date: 9/27/17 Time: 10:41 Temp: 35.1 °C  
24 Hours ± 2 hours 35.0 ± 0.5°C

Out of Incubator:  
 Date: 9/28/17 Time: 8:52 Temp: 35.1 °C  
24 Hours ± 2 hours 35.0 ± 0.5°C

**\*\*Formula:** Calculate coliform density: Use all plates and filtered volumes that fall between the ideal range. Include duplicates and multiple dilutions.

$$\text{Colonies/100 mL} = \frac{(\text{coliform colonies counted}) \times (100)}{\text{mLs Sample filtered}}$$

**\*\*Formula:** If no plate falls in the ideal range, use all plates and filtered volumes not categorized as TNTC or Confluent Growth.

$$\text{Colonies/100 mL} = \frac{(\text{Sum of colonies in all samples}) \times (100)}{\text{Sum of volume (in mL) of all samples}}$$

(Use the worksheet below to calculate coliform density)

IF: The total number of colonies exceeds 200 per membrane, or the colonies are too indistinct for accurate counting, or exceed 60 blue colonies, report the results as "Too Numerous to Count (TNTC)" Or "confluent growth" as applies.

**\*\*Use plates that fall in the ideal range for Quantitative Determinations for e-coli (20-60)**

*E. coli*  
Colonies Reported/100 mls

TNTC

Sample	Volume	Blue Colonies
Blank I	100 mL	0
25	<del>10 mL</del> <u>25 mL</u>	T
50A	<del>20 mL</del> <u>50 mL</u>	N
50B	<del>20 mL</del> <u>50 mL</u>	T
100	<del>50 mL</del> <u>100 mL</u>	C
Blank II	100 mL	0

Sampled By: Mark Woodan

Analyzed By: Mark Woodan





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4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 31, 2017

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

Sept. 27, 2017 Rio Grande North and Sept. 28, 2017 Rio Grande South results

RE: CMC

OrderNo.: 1709F81

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/28/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook):

9/27/17 - Rio Grande North

DO = 7.13 mg/L, pH = 7.83, Conductivity = 103.4 umhos/cm, and Temperature = 16.3°C

9/28/17 - Rio Grande South

DO = 7.23 mg/L, pH = 7.92, Conductivity = 192.2 umhos/cm, and Temperature = 15.2°C

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1709F81

Date Reported: 10/31/2017

CLIENT: AMAFCA

Client Sample ID: Rio Grande-South-20170928

Project: CMC

Collection Date: 9/28/2017 9:00:00 AM

Lab ID: 1709F81-001

Matrix: AQUEOUS

Received Date: 9/28/2017 1:40:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>								
Analyst: <b>MRA</b>								
Nitrogen, Nitrite (As N)	ND	0.034	0.50		mg/L	5	9/29/2017 10:01:11 AM	R46023
Nitrogen, Nitrate (As N)	0.46	0.11	0.50	J	mg/L	5	9/29/2017 10:01:11 AM	R46023
<b>EPA METHOD 200.7: METALS</b>								
Analyst: <b>pmf</b>								
Calcium	80	0.078	1.0		mg/L	1	10/16/2017 6:38:36 PM	34381
Magnesium	15	0.25	1.0		mg/L	1	10/16/2017 6:38:36 PM	34381
<b>EPA 200.8: DISSOLVED METALS</b>								
Analyst: <b>JLF</b>								
Copper	0.00098	0.00030	0.0010	J	mg/L	1	10/6/2017 8:08:32 PM	C46196
Lead	0.00047	0.00017	0.00050	J	mg/L	1	10/6/2017 8:08:32 PM	C46196
<b>SM2340B: HARDNESS</b>								
Analyst: <b>pmf</b>								
Hardness (As CaCO3)	260	2.5	6.6		mg/L	1	10/17/2017	R46397
<b>SM5210B: BOD</b>								
Analyst: <b>SMS</b>								
Biochemical Oxygen Demand	5.0	2.0	2.0		mg/L	1	10/4/2017 12:17:00 PM	34138
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>								
Analyst: <b>SMS</b>								
E. Coli	6131	10.00	10.00		MPN/100	10	9/29/2017 3:20:00 PM	34130
<b>EPA METHOD 1664B</b>								
Analyst: <b>dbf</b>								
N-Hexane Extractable Material	ND	3.85	10.2		mg/L	1	10/4/2017 8:00:00 AM	34213
<b>SM 4500 NH3: AMMONIA</b>								
Analyst: <b>smb</b>								
Nitrogen, Ammonia	ND	0.40	1.0		mg/L	1	10/16/2017 2:44:00 PM	R46385
<b>SM4500-H+B: PH</b>								
Analyst: <b>JRR</b>								
pH	7.97			H	pH units	1	10/2/2017 11:40:44 AM	R46061
<b>EPA METHOD 365.1: TOTAL PHOSPHOROUS</b>								
Analyst: <b>JRR</b>								
Phosphorus, Total (As P)	0.74	0.050	0.050	D	mg/L	1	10/13/2017 9:28:00 AM	34388
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>								
Analyst: <b>KS</b>								
Total Dissolved Solids	260	118	200	D	mg/L	1	10/4/2017 8:51:00 PM	34208
<b>SM 4500 NORG C: TKN</b>								
Analyst: <b>smb</b>								
Nitrogen, Kjeldahl, Total	1.7	0.88	2.0	JD	mg/L	1	10/17/2017 10:53:00 AM	34412
<b>SM 2540D: TSS</b>								
Analyst: <b>KS</b>								
Suspended Solids	810	20	20	D	mg/L	1	10/2/2017 4:41:00 PM	34153

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1709F81

Date Reported: 10/31/2017

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North-20170927

Project: CMC

Collection Date: 9/27/2017 12:00:00 PM

Lab ID: 1709F81-003

Matrix: AQUEOUS

Received Date: 9/28/2017 1:40:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>	
Nitrogen, Nitrite (As N)	ND	0.034	0.50		mg/L	5	9/29/2017 10:26:00 AM	R46023
Nitrogen, Nitrate (As N)	0.20	0.11	0.50	J	mg/L	5	9/29/2017 10:26:00 AM	R46023
<b>EPA METHOD 200.7: METALS</b>							Analyst: <b>pmf</b>	
Calcium	40	0.078	1.0		mg/L	1	10/16/2017 6:40:14 PM	34381
Magnesium	9.0	0.25	1.0		mg/L	1	10/16/2017 6:40:14 PM	34381
<b>EPA 200.8: DISSOLVED METALS</b>							Analyst: <b>JLF</b>	
Copper	0.00095	0.00030	0.0010	J	mg/L	1	10/6/2017 8:14:39 PM	C46196
Lead	ND	0.00017	0.00050		mg/L	1	10/6/2017 8:14:39 PM	C46196
<b>SM2340B: HARDNESS</b>							Analyst: <b>pmf</b>	
Hardness (As CaCO3)	140	2.5	6.6		mg/L	1	10/17/2017	R46397
<b>SM5210B: BOD</b>							Analyst: <b>SMS</b>	
Biochemical Oxygen Demand	2.0	2.0	2.0		mg/L	1	10/4/2017 12:17:00 PM	34138
<b>EPA METHOD 1664B</b>							Analyst: <b>dbf</b>	
N-Hexane Extractable Material	ND	3.73	9.86		mg/L	1	10/4/2017 8:00:00 AM	34213
<b>SM 4500 NH3: AMMONIA</b>							Analyst: <b>smb</b>	
Nitrogen, Ammonia	ND	0.40	1.0		mg/L	1	10/16/2017 2:44:00 PM	R46385
<b>SM4500-H+B: PH</b>							Analyst: <b>JRR</b>	
pH	8.06			H	pH units	1	10/2/2017 11:44:35 AM	R46061
<b>EPA METHOD 365.1: TOTAL PHOSPHOROUS</b>							Analyst: <b>JRR</b>	
Phosphorus, Total (As P)	0.28	0.050	0.050	D	mg/L	1	10/13/2017 9:29:00 AM	34388
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>	
Total Dissolved Solids	225	59.1	100	D	mg/L	1	10/4/2017 8:51:00 PM	34208
<b>SM 4500 NORG C: TKN</b>							Analyst: <b>smb</b>	
Nitrogen, Kjeldahl, Total	0.84	0.44	1.0	J	mg/L	1	10/17/2017 10:53:00 AM	34412
<b>SM 2540D: TSS</b>							Analyst: <b>KS</b>	
Suspended Solids	260	7.9	8.0	D	mg/L	1	10/2/2017 4:41:00 PM	34153

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: AMAFCA

Client Sample ID: Rio Grande-South-20170928 Filt

Project: CMC

Collection Date: 9/28/2017 9:00:00 AM

Lab ID: 1709F81-005

Matrix: AQUEOUS

Received Date: 9/28/2017 1:40:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 365.1: TOTAL PHOSPHOROUS</b>							Analyst: JRR	
Phosphorus, Total (As P)	0.080	0.010	0.010		mg/L	1	10/13/2017 9:34:00 AM	34388

Dissolved phosphorous - filtered sample

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North-20170927 Filt

Project: CMC

Collection Date: 9/27/2017 12:00:00 PM

Lab ID: 1709F81-006

Matrix: AQUEOUS

Received Date: 9/28/2017 1:40:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 365.1: TOTAL PHOSPHOROUS</b>							Analyst: JRR	
Phosphorus, Total (As P)	0.029	0.010	0.010		mg/L	1	10/13/2017 9:35:00 AM	34388

Dissolved phosphorous - filtered  
sample

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

**Sample Number** 171003037-001      **Sampling Date** 9/28/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-001A / RIO GRANDE-SOUTH 20170928      **Sampling Time** 9:00 AM  
**Matrix** Water  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2017	SAT	EPA 8260C	

## Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
171003037-001	1,2-Dichlorobenzene-d4	EPA 8260C	100.4	70-130
	4-Bromofluorobenzene	EPA 8260C	96.8	70-130
	Toluene-d8	EPA 8260C	98.8	70-130

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

**Sample Number** 171003037-004      **Sampling Date** 9/27/2017      **Date/Time Received** 10/3/2017 12:05 PM  
**Client Sample ID** 1709F81-003A / RIO GRANDE-NORTH-20170927      **Sampling Time** 12:00 PM  
**Matrix** Water  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2017	SAT	EPA 8260C	

## Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
171003037-004	1,2-Dichlorobenzene-d4	EPA 8260C	102.8	70-130
	4-Bromofluorobenzene	EPA 8260C	96.0	70-130
	Toluene-d8	EPA 8260C	98.8	70-130

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email [spokane@anateklabs.com](mailto:spokane@anateklabs.com)

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 171003037  
**Project Name:** 1709F81

## Analytical Results Report

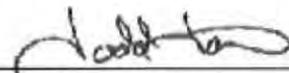
**Sample Number** 171003037-007      **Sampling Date** 9/27/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-004A / TRIP BLANK      **Sampling Time**  
**Matrix** Water  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2017	SAT	EPA 8260C	

## Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
171003037-007	1,2-Dichlorobenzene-d4	EPA 8260C	97.6	70-130
	4-Bromofluorobenzene	EPA 8260C	97.2	70-130
	Toluene-d8	EPA 8260C	99.2	70-130

Authorized Signature

  
\_\_\_\_\_  
Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA-ID00013; AZ:0701; FL(NELAP) E87393; ID-ID00013; MT-CERT0028; NM-IDC0013; NV-ID00013; OR-ID20001-002; WA-C595  
Certifications held by Anatek Labs WA: EPA-WA00189; ID-WA00185; WA-C585; MT-Cert0095; FL(NELAP); E871099

Monday, October 30, 2017

Page 3 of 3

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	8.11	ug/L	10	81.1	70-130	10/4/2017	10/4/2017

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	10/4/2017	10/4/2017

AR      Acceptable Range  
ND      Not Detected  
PQL     Practical Quantitation Limit  
RPD     Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 171003037  
**Project Name:** 1709F81

## Analytical Results Report

**Sample Number** 171003037-002      **Sampling Date** 9/28/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-001B / RIO GRANDE-SOUTH-20170928      **Extraction Date** 10/3/2017  
**Matrix** Water      **Sampling Time** 9:00 AM  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
4,4-DDD	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
4,4-DDE	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
4,4-DDT	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Aldrin	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
alpha-BHC	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Aroclor 1016 (PCB-1016)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	2	10/10/2017	MAH	EPA 608	
beta-BHC	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Chlordane	ND	ug/L	1	10/10/2017	MAH	EPA 608	
delta-BHC	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Dieldrin	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Endosulfan I	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Endosulfan II	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Endosulfan sulfate	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Endrin	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Endrin aldehyde	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Endrin ketone	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

**Sample Number** 171003037-002      **Sampling Date** 9/28/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-001B / RIO GRANDE-SOUTH-20170928      **Extraction Date** 10/3/2017  
**Matrix** Water      **Sampling Time** 9:00 AM  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
gamma-BHC (Lindane)	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Heptachlor	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Heptachlor epoxide	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Methoxychlor	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
Toxaphene	ND	ug/L	1	10/10/2017	MAH	EPA 608	

## Surrogate Data

**Sample Number** 171003037-002  
**Surrogate Standard** DCB      **Method** EPA 608      **Percent Recovery** 97.0      **Control Limits** 30-130

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

**Sample Number** 171003037-005      **Sampling Date** 9/27/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-003B / RIO GRANDE-NORTH-20170927      **Extraction Date** 10/3/2017  
**Matrix** Water      **Sampling Time** 12:00 PM  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
4,4-DDD	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
4,4-DDE	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
4,4-DDT	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Aldrin	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
alpha-BHC	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	10/10/2017	MAH	EPA 608	
beta-BHC	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Chlordane	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	
delta-BHC	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Dieldrin	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Endosulfan I	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Endosulfan II	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Endosulfan sulfate	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Endrin	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Endrin aldehyde	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Endrin ketone	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
gamma-BHC (Lindane)	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

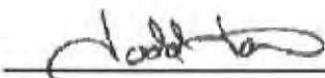
**Sample Number** 171003037-005      **Sampling Date** 9/27/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-003B / RIO GRANDE-NORTH-20170927      **Extraction Date** 10/3/2017  
**Matrix** Water      **Sampling Time** 12:00 PM  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Heptachlor	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Heptachlor epoxide	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Methoxychlor	ND	ug/L	0.01	10/10/2017	MAH	EPA 608	
Toxaphene	ND	ug/L	0.1	10/10/2017	MAH	EPA 608	

## Surrogate Data

**Sample Number** 171003037-005  
**Surrogate Standard** DCB      **Method** EPA 608      **Percent Recovery** 59.6      **Control Limits** 30-130

Authorized Signature

  
Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Monday, October 30, 2017

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 171003037  
**Project Name:** 1709F81

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Endosulfan I	0.527	ug/L	0.5	105.4	30-130	10/3/2017	10/9/2017
4,4-DDE	0.524	ug/L	0.5	104.8	30-130	10/3/2017	10/9/2017
4,4-DDT	0.579	ug/L	0.5	115.8	30-130	10/3/2017	10/9/2017
Aldrin	0.491	ug/L	0.5	98.2	30-130	10/3/2017	10/9/2017
alpha-BHC	0.515	ug/L	0.5	103.0	30-130	10/3/2017	10/9/2017
Aroclor 1016 (PCB-1016)	4.94	ug/L	5	98.8	50-130	10/3/2017	10/9/2017
Aroclor 1260 (PCB-1260)	5.32	ug/L	5	106.4	50-130	10/3/2017	10/9/2017
beta-BHC	0.498	ug/L	0.5	99.6	30-130	10/3/2017	10/9/2017
4,4-DDD	0.520	ug/L	0.5	104.0	30-130	10/3/2017	10/9/2017
Dieldrin	0.524	ug/L	0.5	104.8	30-130	10/3/2017	10/9/2017
Methoxychlor	0.569	ug/L	0.5	113.8	30-130	10/3/2017	10/9/2017
Endosulfan II	0.534	ug/L	0.5	106.8	30-130	10/3/2017	10/9/2017
Endosulfan sulfate	0.527	ug/L	0.5	105.4	30-130	10/3/2017	10/9/2017
Endrin	0.535	ug/L	0.5	107.0	30-130	10/3/2017	10/9/2017
Endrin aldehyde	0.497	ug/L	0.5	99.4	30-130	10/3/2017	10/9/2017
Endrin ketone	0.552	ug/L	0.5	110.4	30-130	10/3/2017	10/9/2017
gamma-BHC (Lindane)	0.523	ug/L	0.5	104.6	30-130	10/3/2017	10/9/2017
Heptachlor	0.489	ug/L	0.5	97.8	30-130	10/3/2017	10/9/2017
Heptachlor epoxide	0.510	ug/L	0.5	102.0	30-130	10/3/2017	10/9/2017
delta-BHC	0.506	ug/L	0.5	101.2	30-130	10/3/2017	10/9/2017

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
170929007-002	Endosulfan II	ND	0.461	ug/L	0.5	92.2	30-150	10/3/2017	10/9/2017
170929007-002	4,4-DDE	ND	0.395	ug/L	0.5	79.0	30-150	10/3/2017	10/9/2017
170929007-002	4,4-DDT	ND	0.434	ug/L	0.5	86.8	30-150	10/3/2017	10/9/2017
170929007-002	Aldrin	ND	0.409	ug/L	0.5	81.8	30-150	10/3/2017	10/9/2017
170929007-002	alpha-BHC	ND	0.468	ug/L	0.5	93.6	30-150	10/3/2017	10/9/2017
170929007-002	beta-BHC	ND	0.468	ug/L	0.5	93.6	30-150	10/3/2017	10/9/2017
170929007-002	delta-BHC	ND	0.464	ug/L	0.5	92.8	30-150	10/3/2017	10/9/2017
170929007-002	4,4-DDD	ND	0.431	ug/L	0.5	86.2	30-150	10/3/2017	10/9/2017
170929007-002	Endosulfan I	ND	0.461	ug/L	0.5	92.2	30-150	10/3/2017	10/9/2017
170929007-002	Methoxychlor	ND	0.479	ug/L	0.5	95.8	30-150	10/3/2017	10/9/2017
170929007-002	Endosulfan sulfate	ND	0.455	ug/L	0.5	91.0	30-150	10/3/2017	10/9/2017

### Comments:

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C595; MT:Cert0095; FL(NELAP): E871089

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
 ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 171003037  
**Project Name:** 1709F81

## Analytical Results Report Quality Control Data

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
170929007-002	Endrin	ND	0.464	ug/L	0.5	92.8	30-150	10/3/2017	10/9/2017
170929007-002	Endrin aldehyde	ND	0.435	ug/L	0.5	87.0	30-150	10/3/2017	10/9/2017
170929007-002	Endrin ketone	ND	0.475	ug/L	0.5	95.0	30-150	10/3/2017	10/9/2017
170929007-002	gamma-BHC (Lindane)	ND	0.478	ug/L	0.5	95.6	30-150	10/3/2017	10/9/2017
170929007-002	Heptachlor	ND	0.434	ug/L	0.5	86.8	30-150	10/3/2017	10/9/2017
170929007-002	Heptachlor epoxide	ND	0.454	ug/L	0.5	90.8	30-150	10/3/2017	10/9/2017
170929007-002	Dieldrin	ND	0.455	ug/L	0.5	91.0	30-150	10/3/2017	10/9/2017

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Endosulfan II	0.471	ug/L	0.5	94.2	2.1	0-30	10/3/2017	10/9/2017
4,4-DDE	0.404	ug/L	0.5	80.8	2.3	0-30	10/3/2017	10/9/2017
4,4-DDT	0.441	ug/L	0.5	88.2	1.6	0-30	10/3/2017	10/9/2017
Aldrin	0.416	ug/L	0.5	83.2	1.7	0-30	10/3/2017	10/9/2017
alpha-BHC	0.470	ug/L	0.5	94.0	0.4	0-30	10/3/2017	10/9/2017
beta-BHC	0.475	ug/L	0.5	95.0	1.5	0-30	10/3/2017	10/9/2017
delta-BHC	0.474	ug/L	0.5	94.8	2.1	0-30	10/3/2017	10/9/2017
4,4-DDD	0.440	ug/L	0.5	88.0	2.1	0-30	10/3/2017	10/9/2017
Endosulfan I	0.470	ug/L	0.5	94.0	1.9	0-30	10/3/2017	10/9/2017
Methoxychlor	0.488	ug/L	0.5	97.2	1.5	0-30	10/3/2017	10/9/2017
Endosulfan sulfate	0.469	ug/L	0.5	93.8	3.0	0-30	10/3/2017	10/9/2017
Endrin	0.473	ug/L	0.5	94.6	1.9	0-30	10/3/2017	10/9/2017
Endrin aldehyde	0.445	ug/L	0.5	89.0	2.3	0-30	10/3/2017	10/9/2017
Endrin ketone	0.483	ug/L	0.5	96.6	1.7	0-30	10/3/2017	10/9/2017
gamma-BHC (Lindane)	0.483	ug/L	0.5	96.6	1.0	0-30	10/3/2017	10/9/2017
Heptachlor	0.439	ug/L	0.5	87.8	1.1	0-30	10/3/2017	10/9/2017
Heptachlor epoxide	0.461	ug/L	0.5	92.2	1.5	0-30	10/3/2017	10/9/2017
Dieldrin	0.467	ug/L	0.5	93.4	2.6	0-30	10/3/2017	10/9/2017

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
4,4-DDD	ND	ug/L	0.01	10/3/2017	10/9/2017
4,4-DDE	ND	ug/L	0.01	10/3/2017	10/9/2017
4,4-DDT	ND	ug/L	0.01	10/3/2017	10/9/2017
Aldrin	ND	ug/L	0.01	10/3/2017	10/9/2017

### Comments:

Certifications held by Anatek Labs ID: EPA ID00013; AZ 0731; FL(NELAP); E87693; ID ID00013; MT: CERT0028; NM: ID00013; NV: IC00013; OR: ID200301-002; WA: C595  
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**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report Quality Control Data

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
alpha-BHC	ND	ug/L	0.01	10/3/2017	10/9/2017
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	10/3/2017	10/9/2017
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	10/3/2017	10/9/2017
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	10/3/2017	10/9/2017
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	10/3/2017	10/9/2017
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	10/3/2017	10/9/2017
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	10/3/2017	10/9/2017
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	10/3/2017	10/9/2017
beta-BHC	ND	ug/L	0.01	10/3/2017	10/9/2017
Chlordane	ND	ug/L	0.1	10/3/2017	10/9/2017
delta-BHC	ND	ug/L	0.01	10/3/2017	10/9/2017
Dieldrin	ND	ug/L	0.01	10/3/2017	10/9/2017
Endosulfan I	ND	ug/L	0.01	10/3/2017	10/9/2017
Endosulfan II	ND	ug/L	0.01	10/3/2017	10/9/2017
Endosulfan sulfate	ND	ug/L	0.01	10/3/2017	10/9/2017
Endrin	ND	ug/L	0.01	10/3/2017	10/9/2017
Endrin aldehyde	ND	ug/L	0.01	10/3/2017	10/9/2017
Endrin ketone	ND	ug/L	0.01	10/3/2017	10/9/2017
gamma-BHC (Lindane)	ND	ug/L	0.01	10/3/2017	10/9/2017
Heptachlor	ND	ug/L	0.01	10/3/2017	10/9/2017
Heptachlor epoxide	ND	ug/L	0.01	10/3/2017	10/9/2017
Methoxychlor	ND	ug/L	0.01	10/3/2017	10/9/2017
Toxaphene	ND	ug/L	0.1	10/3/2017	10/9/2017

AR      Acceptable Range  
ND      Not Detected  
PQL     Practical Quantitation Limit  
RPD     Relative Percentage Difference

### Comments:

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

**Sample Number** 171003037-002      **Sampling Date** 9/28/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-001B / RIO GRANDE-SOUTH-20170928      **Extraction Date** 10/5/2017  
**Matrix** Water      **Sampling Time** 9:00 AM  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	B1
Chrysene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Dibenzofuran	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	
Pentachlorophenol	ND	ug/L	0.5	10/10/2017	HSW	EPA 8270D	

## Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
171003037-002	2,4,6-Tribromophenol	EPA 8270D	79.4	43-120
	2-Fluorobiphenyl	EPA 8270D	85.6	55-127
	2-Fluorophenol	EPA 8270D	71.2	41-119
	Nitrobenzene-d5	EPA 8270D	90.0	55-120
	Phenol-d5	EPA 8270D	70.6	52-115
	Terphenyl-d14	EPA 8270D	111.2	22-133

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

# Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

**Sample Number** 171003037-005 **Sampling Date** 9/27/2017 **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-003B / RIO GRANDE-NORTH-20170927 **Extraction Date** 10/3/2017  
**Matrix** Water **Sampling Time** 12:00 PM  
**Comments**

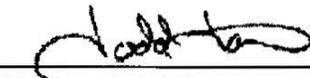
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
bis(2-Ethylhexyl)phthalate	3.06	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Chrysene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Dibenzofuran	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	
Pentachlorophenol	ND	ug/L	0.5	10/5/2017	HSW	EPA 8270D	

## Surrogate Data

**Sample Number** 171003037-005

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 8270D	94.4	43-120
2-Fluorobiphenyl	EPA 8270D	94.4	55-127
2-Fluorophenol	EPA 8270D	78.6	41-119
Nitrobenzene-d5	EPA 8270D	90.4	55-120
Phenol-d5	EPA 8270D	83.6	52-115
Terphenyl-d14	EPA 8270D	108.4	22-133

Authorized Signature



Todd Taruscio, Lab Manager

B1 Target analyte detected in method blank at or above the method reporting limit  
MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 171003037  
**Project Name:** 1709F81

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	4.86	ug/L	5	97.2	22-138	10/5/2017	10/10/2017
bis(2-Ethylhexyl)phthalate	4.76	ug/L	5	95.2	51-149	10/5/2017	10/10/2017
Pentachlorophenol	8.93	ug/L	10	89.3	22-138	10/2/2017	10/5/2017
bis(2-Ethylhexyl)phthalate	9.98	ug/L	10	99.8	51-149	10/2/2017	10/5/2017

### Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.83	ug/L	5	96.6	0.6	0-47	10/5/2017	10/10/2017
bis(2-Ethylhexyl)phthalate	4.56	ug/L	5	91.2	4.3	0-50	10/5/2017	10/10/2017
Pentachlorophenol	7.83	ug/L	10	78.3	13.1	0-47	10/2/2017	10/5/2017
bis(2-Ethylhexyl)phthalate	10.5	ug/L	10	105.0	5.1	0-50	10/2/2017	10/5/2017

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	10/5/2017	10/10/2017
Benzidine	ND	ug/L	0.5	10/2/2017	10/5/2017
Benzo[a]anthracene	ND	ug/L	0.5	10/2/2017	10/5/2017
Benzo[a]anthracene	ND	ug/L	0.5	10/5/2017	10/10/2017
Benzo[a]pyrene	ND	ug/L	0.5	10/2/2017	10/5/2017
Benzo[a]pyrene	ND	ug/L	0.5	10/5/2017	10/10/2017
Benzo[b]fluoranthene	ND	ug/L	0.5	10/2/2017	10/5/2017
Benzo[b]fluoranthene	ND	ug/L	0.5	10/5/2017	10/10/2017
Benzo[k]fluoranthene	ND	ug/L	0.5	10/5/2017	10/10/2017
Benzo[k]fluoranthene	ND	ug/L	0.5	10/2/2017	10/5/2017
bis(2-Ethylhexyl)phthalate	0.57	ug/L	0.5	10/5/2017	10/10/2017
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	10/2/2017	10/5/2017
Chrysene	ND	ug/L	0.5	10/2/2017	10/5/2017
Chrysene	ND	ug/L	0.5	10/5/2017	10/10/2017
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/2/2017	10/5/2017
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/5/2017	10/10/2017
Dibenzofuran	ND	ug/L	0.5	10/2/2017	10/5/2017
Dibenzofuran	ND	ug/L	0.5	10/5/2017	10/10/2017

### Comments:

Certifications held by Anatek Labs ID: EPA-ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report Quality Control Data

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/2/2017	10/5/2017
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/5/2017	10/10/2017
Pentachlorophenol	ND	ug/L	0.5	10/5/2017	10/10/2017
Pentachlorophenol	ND	ug/L	0.5	10/2/2017	10/5/2017

AR      Acceptable Range  
ND      Not Detected  
PQL     Practical Quantitation Limit  
RPD     Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595  
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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report

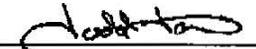
**Sample Number** 171003037-003      **Sampling Date** 9/28/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-0011 / RIO GRANDE-SOUTH-20170928      **Sampling Time** 9:00 AM  
**Matrix** Water  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	36.2	mg/L	5	10/25/2017 7:05:00 PM	KAE	EPA 410.4	

**Sample Number** 171003037-006      **Sampling Date** 9/27/2017      **Date/Time Received** 10/3/2017 2:05 PM  
**Client Sample ID** 1709F81-0031 / RIO GRANDE-NORTH-20170927      **Sampling Time** 12:00 PM  
**Matrix** Water  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	20.5	mg/L	5	10/25/2017 7:05:00 PM	KAE	EPA 410.4	

Authorized Signature

  
\_\_\_\_\_  
Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

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Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Monday, October 30, 2017

Page 1 of 1

# Anatek Labs, Inc.

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB      **Batch #:** 171003037  
**Address:** 4901 HAWKINS NE SUITE D      **Project Name:** 1709F81  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	94.4	mg/L	100	94.4	90-110	10/25/2017	10/25/2017

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
171010049-001	COD	6.95	102	mg/L	100	95.1	80-120	10/25/2017	10/25/2017

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	101	mg/L	100	94.1	1.0	0-15	10/25/2017	10/25/2017

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	10/25/2017	10/25/2017

### Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
171011019-001	COD	<5	5.93	mg/L	0.0	0-20	10/25/2017	10/25/2017

AR      Acceptable Range  
ND      Not Detected  
PQL     Practical Quantitation Limit  
RPD     Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Collected date/time: 09/28/17 09:00

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	10/03/2017 20:27	WG1026874

<sup>1</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

Al

<sup>9</sup> Sc

Collected date/time: 09/28/17 12:00

L940575

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	10/03/2017 20:35	WG1026374

- <sup>2</sup>Tc
- <sup>3</sup>Ss
- <sup>4</sup>Cn
- <sup>5</sup>Sr
- <sup>6</sup>Qc
- <sup>7</sup>Gl
- <sup>8</sup>Al
- <sup>9</sup>Sc

WG1026874

Wet Chemistry by Method 3500Cr C-2011

QUALITY CONTROL SUMMARY

L940575-01.02

ONE LAB. NATIONWIDE



Method Blank (MB)

(MB) R3254611-1 10/03/17 15:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Hexavalent Chromium	U		0.00015	0.000500

L939889-01 Original Sample (OS) • Duplicate (DUP)

(OS) L939889-01 10/03/17 17:07 • (DUP) R3254611-8 10/03/17 17:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	0.000182	1	0		20

L940315-01 Original Sample (OS) • Duplicate (DUP)

(OS) L940315-01 10/03/17 19:51 • (DUP) R3254611-11 10/03/17 20:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	0.000	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3254611-5 10/03/17 15:32 • (LCSD) R3254611-6 10/03/17 15:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.00200	0.00189	0.00183	95	91	90-110			4	20

L940091-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L940091-03 10/03/17 18:37 • (MS) R3254611-9 10/03/17 18:45 • (MSD) R3254611-10 10/03/17 18:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.0500	ND	0.0330	0.0498	65	100	1	90-110	<u>JS</u>	<u>JS</u>	41	20

L940318-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L940318-01 10/03/17 20:11 • (MS) R3254611-12 10/03/17 20:19

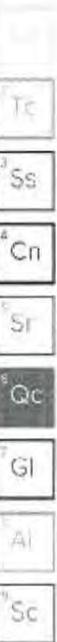
Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Hexavalent Chromium	0.0500	ND	0.0488	98	1	90-110	

ACCOUNT:  
Hall Environmental Analysis Laboratory

PROJECT:

SDG:  
L940575

DATE/TIME:  
10/04/17 13:18





## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

### Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.



October 26, 2017

Mr. Andy Freeman  
Hall Environmental  
4901 Hawkins NE  
Suite D  
Albuquerque, New Mexico 87109

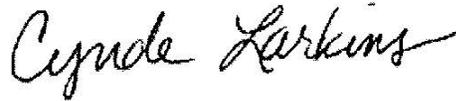
Re: Routine Analysis  
Work Order: 11458  
SDG: 1709F81

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 06, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Purchase Order: IDIQ Pricing  
Enclosures



CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975  
 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

SUB CONTRACTOR: Cape Fear Analytical		COMPANY: Cape Fear Analytical		PHONE: (910) 795-0421	FAX:		
ADDRESS: 3306 Kitty Hawk Rd Ste 120				ACCOUNT #:	EMAIL:		
CITY, STATE, ZIP: Wilmington, NC 28405							
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1709F81-001K	Rio Grande-South-20170928	1x the Amber	Aqueous	9/28/2017 9:00:00 AM	1	PCB CONGENERS PREP 1668
2	1709F81-003K	Rio Grande-North-20170927	1x the Amber	Aqueous	9/27/2017 12:00:00 PM	1	PCB CONGENERS PREP 1668

1x the Amber  
 1x the Amber  
 10/09/2017

CFA WO#11458

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: <i>[Signature]</i>	Date: 9/29/17	Time: 8:52 AM	Received By: <i>[Signature]</i>	Date: 9/29/17	Time: 0946	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARD COPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE  FOR LAB USE ONLY Temp of samples: <u>1.3</u> °C    Attempt to Cool? _____  Comments: _____
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
TAT: Standard <i>[Signature]</i> RUSH    Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						

**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: HALL Work Order: 11458

Shipping Company: FedEx Date/Time Received: 06 OCT 17 0946

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		<input checked="" type="checkbox"/>	
Samples < 2x background?		<input checked="" type="checkbox"/>	

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: \_\_\_\_\_

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other(describe)
2 Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
3 Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>			Preservation Method: ice bags blue ice dry ice none other (describe) <u>6.2° - 4.9 = 1.3°C</u>
4 Aqueous samples found to have visible solids?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: <u>Minimal visible solids (&lt;1%) on both samples</u>
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample IDs, containers affected and pH observed: If preservative added, Lot#: <u>pH = 8 on all jars.</u>
6 Samples requiring preservation have no residual chlorine?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: If preservative added, Lot#:
7 Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
9 Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
10 Number of containers received match number indicated on COC?			<input checked="" type="checkbox"/>	List type and number of containers / Sample IDs, containers affected: <u>2 - 1L WMA per sample</u>
11 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Checklist performed by: Initials: CJ Date: 06 OCT 17

# **PCB Congeners Analysis**

# Case Narrative

**PCBC Case Narrative  
Hall Environmental Analysis Laboratory (HALL)  
SDG 1709F81  
Work Order 11458**

**Method/Analysis Information**

**Product:** Method 1668C HRMS Aqueous Analysis  
Analytical Method: EPA Method 1668C  
Extraction Method: SW846 3520C  
Analytical Batch Number: 36029  
Clean Up Batch Number: 35955  
Extraction Batch Number: 35954

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in EPA Method 1668C:

<b>Sample ID</b>	<b>Client ID</b>
11458001	1709F81-001K Rio Grande-South-21070928
11458002	1709F81-003K Rio Grande-North-20170927
12019813	Method Blank (MB)
12019814	Laboratory Control Sample (LCS)
12019815	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetI.ynx software package.

**Calibration Information**

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

**Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

### **Technical Information**

#### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

The samples in this SDG did not require dilutions.

#### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

### **Miscellaneous Information**

#### **Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

### **Manual Integrations**

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

### **System Configuration**

This analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
HRP875_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

### **Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# **Sample Data Summary**

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Certificate of Analysis Report for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 1709F81 CFA Work Order: 11458

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 26 OCT 2017

Title: Group Leader

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	3.30	22.8
2051-61-8	2-MoCB	U	ND	pg/L	2.34	22.8
2051-62-9	3-MoCB	J	2.94	pg/L	2.28	22.8
13029-08-8	4-DiCB	U	ND	pg/L	8.40	22.8
16605-91-7	5-DiCB	U	ND	pg/L	8.69	22.8
25569-80-6	6-DiCB	U	ND	pg/L	7.08	22.8
33284-50-3	7-DiCB	U	ND	pg/L	7.42	22.8
34883-43-7	8-DiCB	U	ND	pg/L	6.28	22.8
34883-39-1	9-DiCB	U	ND	pg/L	8.05	22.8
33146-45-1	10-DiCB	U	ND	pg/L	4.62	22.8
2050-67-1	11-DiCB		116	pg/L	8.01	114
2974-92-7	12-DiCB	CU	ND	pg/L	7.83	45.5
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	7.53	22.8
2050-68-2	15-DiCB	U	ND	pg/L	7.53	22.8
38444-78-9	16-TrCB	J	2.98	pg/L	2.84	22.8
37680-66-3	17-TrCB	J	3.96	pg/L	2.73	22.8
37680-65-2	18-TrCB	CJ	6.46	pg/L	2.21	45.5
38444-73-4	19-TrCB	U	ND	pg/L	3.96	22.8
38444-84-7	20-TrCB	CJ	14.9	pg/L	1.87	45.5
55702-46-0	21-TrCB	CJ	5.32	pg/L	1.77	45.5
38444-85-8	22-TrCB	J	6.99	pg/L	1.89	22.8
55720-44-0	23-TrCB	U	ND	pg/L	1.87	22.8
55702-45-9	24-TrCB	U	ND	pg/L	1.96	22.8
55712-37-3	25-TrCB	U	ND	pg/L	1.64	22.8
38444-81-4	26-TrCB	CJ	2.03	pg/L	1.82	45.5
38444-76-7	27-TrCB	U	ND	pg/L	1.93	22.8
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	8.94	22.8
38444-77-8	32-TrCB	J	2.28	pg/L	1.73	22.8

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	1.93	22.8
37680-69-6	35-TrCB	J	4.32	pg/L	3.09	22.8
38444-87-0	36-TrCB	U	ND	pg/L	2.75	22.8
38444-90-5	37-TrCB	J	8.69	pg/L	2.87	22.8
53555-66-1	38-TrCB	U	ND	pg/L	2.84	22.8
38444-88-1	39-TrCB	U	ND	pg/L	2.75	22.8
38444-93-8	40-TeCB	CJ	6.51	pg/L	4.12	45.5
52663-59-9	41-TeCB	U	ND	pg/L	4.44	22.8
36559-22-5	42-TeCB	U	ND	pg/L	4.53	22.8
70362-46-8	43-TeCB	U	ND	pg/L	5.42	22.8
41464-39-5	44-TeCB	CJ	21.0	pg/L	3.91	68.3
70362-45-7	45-TeCB	CJ	2.62	pg/L	1.41	45.5
41464-47-5	46-TeCB	U	ND	pg/L	1.46	22.8
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	4.21	22.8
41464-40-8	49-TeCB	CJ	8.71	pg/L	3.69	45.5
62796-65-0	50-TeCB	CU	ND	pg/L	1.77	45.5
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	20.7	pg/L	3.91	22.8
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.27	22.8
74338-24-2	55-TeCB	U	ND	pg/L	2.53	22.8
41464-43-1	56-TeCB	J	9.06	pg/L	2.64	22.8
70424-67-8	57-TeCB	U	ND	pg/L	2.43	22.8
41464-49-7	58-TeCB	U	ND	pg/L	2.41	22.8
74472-33-6	59-TeCB	CU	ND	pg/L	3.16	68.3
33025-41-1	60-TeCB	J	5.01	pg/L	2.48	22.8
33284-53-6	61-TeCB	CJ	32.4	pg/L	2.41	91.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	2.32	22.8
52663-58-8	64-TeCB	J	7.76	pg/L	3.07	22.8

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	13.4	pg/L	2.37	22.8
73575-53-8	67-TeCB	U	ND	pg/L	2.25	22.8
73575-52-7	68-TeCB	U	ND	pg/L	2.23	22.8
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	2.30	22.8
74338-23-1	73-TeCB	U	ND	pg/L	3.23	22.8
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	5.46	22.8
70362-49-1	78-TeCB	U	ND	pg/L	2.43	22.8
41464-48-6	79-TeCB	U	ND	pg/L	2.16	22.8
33284-52-5	80-TeCB	U	ND	pg/L	2.07	22.8
70362-50-4	81-TeCB	U	ND	pg/L	2.28	22.8
52663-62-4	82-PeCB	U	ND	pg/L	4.48	22.8
60145-20-2	83-PeCB	U	ND	pg/L	3.89	22.8
52663-60-2	84-PeCB	J	8.21	pg/L	4.19	22.8
65510-45-4	85-PeCB	CJ	8.40	pg/L	3.00	68.3
55312-69-1	86-PeCB	CJ	28.3	pg/L	3.19	137
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	4.62	pg/L	3.78	45.5
73575-57-2	89-PeCB	U	ND	pg/L	3.94	22.8
68194-07-0	90-PeCB	CJ	33.0	pg/L	3.12	68.3
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	6.37	pg/L	3.64	22.8
73575-56-1	93-PeCB	CU	ND	pg/L	3.66	45.5
73575-55-0	94-PeCB	U	ND	pg/L	4.07	22.8
38379-99-6	95-PeCB		23.8	pg/L	3.66	22.8
73575-54-9	96-PeCB	U	ND	pg/L	0.865	22.8

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 11458001  
 Client Sample: 1668C Water  
 Client ID: 1709F81-001K Rio Grande-South-210  
 Batch ID: 36029  
 Run Date: 10/21/2017 10:46  
 Data File: d21oct17a-4  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Date Collected: 09/28/2017 09:00  
 Date Received: 10/06/2017 09:46  
 Method: EPA Method 1668C  
 Analyst: MJC  
 Prep Method: SW846 3520C  
 Prep Aliquot: 879 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	3.94	45.5
38380-01-7	99-PeCB	J	12.0	pg/L	3.28	22.8
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	3.37	22.8
56558-16-8	104-PeCB	U	ND	pg/L	0.887	22.8
32598-14-4	105-PeCB	J	16.6	pg/L	2.00	22.8
70424-69-0	106-PeCB	U	ND	pg/L	1.84	22.8
70424-68-9	107-PeCB	J	2.84	pg/L	1.59	22.8
70362-41-3	108-PeCB	CJ	2.00	pg/L	1.84	45.5
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	49.1	pg/L	2.96	45.5
39635-32-0	111-PeCB	U	ND	pg/L	2.80	22.8
74472-36-9	112-PeCB	U	ND	pg/L	2.71	22.8
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	1.93	22.8
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		34.3	pg/L	1.89	22.8
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	2.66	22.8
56558-18-0	121-PeCB	U	ND	pg/L	2.84	22.8
76842-07-4	122-PeCB	U	ND	pg/L	1.93	22.8
65510-44-3	123-PeCB	U	ND	pg/L	1.84	22.8
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	2.23	22.8
39635-33-1	127-PeCB	U	ND	pg/L	1.89	22.8
38380-07-3	128-HxCB	CJ	11.0	pg/L	2.66	45.5

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> I668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	75.9	pg/L	2.75	68.3
52663-66-8	130-HxCB	U	ND	pg/L	3.82	22.8
61798-70-7	131-HxCB	U	ND	pg/L	3.39	22.8
38380-05-1	132-HxCB	J	20.4	pg/L	3.30	22.8
35694-04-3	133-HxCB	U	ND	pg/L	3.07	22.8
52704-70-8	134-HxCB	U	ND	pg/L	3.41	22.8
52744-13-5	135-HxCB	CJ	19.8	pg/L	1.57	45.5
38411-22-2	136-HxCB	J	6.21	pg/L	1.14	22.8
35694-06-5	137-HxCB	J	3.34	pg/L	3.07	22.8
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	2.84	45.5
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	12.7	pg/L	3.19	22.8
41411-61-4	142-HxCB	U	ND	pg/L	3.44	22.8
68194-15-0	143-HxCB	U	ND	pg/L	3.34	22.8
68194-14-9	144-HxCB	J	3.05	pg/L	1.52	22.8
74472-40-5	145-HxCB	U	ND	pg/L	1.21	22.8
51908-16-8	146-HxCB	J	8.76	pg/L	2.50	22.8
68194-13-8	147-HxCB	CJ	40.7	pg/L	2.91	45.5
74472-41-6	148-HxCB	U	ND	pg/L	1.59	22.8
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.18	22.8
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.11	22.8
35065-27-1	153-HxCB	C	56.4	pg/L	2.32	45.5
60145-22-4	154-HxCB	U	ND	pg/L	1.37	22.8
33979-03-2	155-HxCB	U	ND	pg/L	1.18	22.8
38380-08-4	156-HxCB	CJ	9.35	pg/L	2.05	45.5
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	7.39	pg/L	2.09	22.8
39635-35-3	159-HxCB	U	ND	pg/L	1.62	22.8
41411-62-5	160-HxCB	U	ND	pg/L	2.62	22.8

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> I668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	2.32	22.8
39635-34-2	162-HxCB	U	ND	pg/L	1.66	22.8
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	4.55	pg/L	2.28	22.8
74472-46-1	165-HxCB	U	ND	pg/L	2.48	22.8
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	3.59	pg/L	1.59	22.8
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.73	22.8
35065-30-6	170-HpCB	J	19.6	pg/L	2.46	22.8
52663-71-5	171-HpCB	CJ	6.12	pg/L	2.41	45.5
52663-74-8	172-HpCB	J	3.73	pg/L	2.41	22.8
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	20.8	pg/L	2.37	22.8
40186-70-7	175-HpCB	U	ND	pg/L	1.25	22.8
52663-65-7	176-HpCB	J	2.57	pg/L	0.978	22.8
52663-70-4	177-HpCB	J	12.8	pg/L	2.32	22.8
52663-67-9	178-HpCB	J	4.41	pg/L	1.34	22.8
52663-64-6	179-HpCB	J	7.17	pg/L	0.956	22.8
35065-29-3	180-HpCB	C	47.6	pg/L	1.96	45.5
74472-47-2	181-HpCB	U	ND	pg/L	2.23	22.8
60145-23-5	182-HpCB	U	ND	pg/L	1.25	22.8
52663-69-1	183-HpCB	CJ	14.1	pg/L	2.23	45.5
74472-48-3	184-HpCB	U	ND	pg/L	0.956	22.8
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.02	22.8
52663-68-0	187-HpCB		23.8	pg/L	1.21	22.8
74487-85-7	188-HpCB	U	ND	pg/L	1.00	22.8
39635-31-9	189-HpCB	U	ND	pg/L	1.34	22.8
41411-64-7	190-HpCB	J	4.82	pg/L	1.84	22.8
74472-50-7	191-HpCB	U	ND	pg/L	1.71	22.8
74472-51-8	192-HpCB	U	ND	pg/L	1.98	22.8

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	9.87	pg/L	1.32	22.8
52663-78-2	195-OcCB	J	3.91	pg/L	1.41	22.8
42740-50-1	196-OcCB	J	4.10	pg/L	1.55	22.8
33091-17-7	197-OcCB	CJ	2.64	pg/L	1.18	45.5
68194-17-2	198-OcCB	CJ	12.6	pg/L	1.62	45.5
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	1.68	pg/L	1.16	22.8
2136-99-4	202-OcCB	J	2.68	pg/L	1.30	22.8
52663-76-0	203-OcCB	J	6.26	pg/L	1.48	22.8
74472-52-9	204-OcCB	U	ND	pg/L	1.18	22.8
74472-53-0	205-OcCB	J	1.11	pg/L	1.02	22.8
40186-72-9	206-NoCB	J	5.85	pg/L	1.84	22.8
52663-79-3	207-NoCB	U	ND	pg/L	1.46	22.8
52663-77-1	208-NoCB	J	2.64	pg/L	1.37	22.8
2051-24-3	209-DeCB	J	5.05	pg/L	1.55	22.8
1336-36-3	Total PCB Congeners	J	1040	pg/L	7.60	22.8

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1320	2280	pg/L	57.8	(5%-145%)
13C-3-MoCB		1510	2280	pg/L	66.6	(5%-145%)
13C-4-DiCB		1650	2280	pg/L	72.4	(5%-145%)
13C-15-DiCB		3200	2280	pg/L	141	(5%-145%)
13C-19-TrCB		2460	2280	pg/L	108	(5%-145%)
13C-37-TrCB		2290	2280	pg/L	101	(5%-145%)
13C-54-TcCB		1410	2280	pg/L	62.2	(5%-145%)
13C-77-TcCB		2380	2280	pg/L	104	(10%-145%)
13C-81-TcCB		2350	2280	pg/L	103	(10%-145%)
13C-104-PeCB		1860	2280	pg/L	81.6	(10%-145%)
13C-105-PeCB		1940	2280	pg/L	85.5	(10%-145%)
13C-114-PeCB		1870	2280	pg/L	82.4	(10%-145%)
13C-118-PeCB		1860	2280	pg/L	81.7	(10%-145%)
13C-123-PeCB		1950	2280	pg/L	85.7	(10%-145%)
13C-126-PeCB		1980	2280	pg/L	87.1	(10%-145%)
13C-155-HxCB		1860	2280	pg/L	81.9	(10%-145%)
13C-156-HxCB	C	3640	4550	pg/L	79.9	(10%-145%)
13C-157-HxCB	C156L					
13C-167-HxCB		1900	2280	pg/L	83.3	(10%-145%)
13C-169-HxCB		2010	2280	pg/L	88.3	(10%-145%)
13C-188-HpCB		1740	2280	pg/L	76.4	(10%-145%)
13C-189-HpCB		1750	2280	pg/L	77.0	(10%-145%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458001	<b>Date Collected:</b> 09/28/2017 09:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-001K Rio Grande-South-210		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 10:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 879 mL	

CAS No.	Parname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-202-OcCB			1690	2280	pg/L	74.2 (10%-145%)
13C-205-OcCB			2210	2280	pg/L	97.3 (10%-145%)
13C-206-NoCB			2400	2280	pg/L	105 (10%-145%)
13C-208-NoCB			2050	2280	pg/L	89.9 (10%-145%)
13C-209-DcCB			2310	2280	pg/L	102 (10%-145%)
13C-28-TrCB			1310	2280	pg/L	57.4 (5%-145%)
13C-111-PcCB			2020	2280	pg/L	88.9 (10%-145%)
13C-178-HpCB			2070	2280	pg/L	91.1 (10%-145%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 11458002  
 Client Sample: 1668C Water  
 Client ID: 1709F81-003K Rio Grande-North-20  
 Batch ID: 36029  
 Run Date: 10/21/2017 11:55  
 Data File: d21oct17a-5  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Date Collected: 09/28/2017 12:00  
 Date Received: 10/06/2017 09:46  
 Method: EPA Method 1668C  
 Analyst: MJC  
 Prep Method: SW846 3520C  
 Prep Aliquot: 946.6 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	2.01	21.1
2051-61-8	2-MoCB	U	ND	pg/L	3.15	21.1
2051-62-9	3-MoCB	U	ND	pg/L	2.07	21.1
13029-08-8	4-DiCB	U	ND	pg/L	9.04	21.1
16605-91-7	5-DiCB	U	ND	pg/L	9.93	21.1
25569-80-6	6-DiCB	U	ND	pg/L	8.09	21.1
33284-50-3	7-DiCB	U	ND	pg/L	8.47	21.1
34883-43-7	8-DiCB	U	ND	pg/L	7.16	21.1
34883-39-1	9-DiCB	U	ND	pg/L	9.19	21.1
33146-45-1	10-DiCB	U	ND	pg/L	5.26	21.1
2050-67-1	11-DiCB		120	pg/L	9.15	106
2974-92-7	12-DiCB	CU	ND	pg/L	8.94	42.3
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	8.62	21.1
2050-68-2	15-DiCB	U	ND	pg/L	8.73	21.1
38444-78-9	16-TrCB	U	ND	pg/L	3.66	21.1
37680-66-3	17-TrCB	J	3.59	pg/L	3.53	21.1
37680-65-2	18-TrCB	CJ	5.60	pg/L	2.85	42.3
38444-73-4	19-TrCB	U	ND	pg/L	4.25	21.1
38444-84-7	20-TrCB	CJ	8.60	pg/L	2.41	42.3
55702-46-0	21-TrCB	CU	ND	pg/L	3.34	42.3
38444-85-8	22-TrCB	U	ND	pg/L	4.50	21.1
55720-44-0	23-TrCB	U	ND	pg/L	2.41	21.1
55702-45-9	24-TrCB	U	ND	pg/L	2.51	21.1
55712-37-3	25-TrCB	U	ND	pg/L	2.11	21.1
38444-81-4	26-TrCB	CU	ND	pg/L	2.35	42.3
38444-76-7	27-TrCB	U	ND	pg/L	2.49	21.1
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	4.67	21.1
38444-77-8	32-TrCB	U	ND	pg/L	2.22	21.1

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 11458002  
 Client Sample: I668C Water  
 Client ID: 1709F81-003K Rio Grande-North-20  
 Batch ID: 36029  
 Run Date: 10/21/2017 11:55  
 Data File: d21oct17a-5  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Date Collected: 09/28/2017 12:00  
 Date Received: 10/06/2017 09:46  
 Method: EPA Method 1668C  
 Analyst: MJC  
 Prep Method: SW846 3520C  
 Prep Aliquot: 946.6 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	2.49	21.1
37680-69-6	35-TrCB	U	ND	pg/L	4.58	21.1
38444-87-0	36-TrCB	U	ND	pg/L	2.79	21.1
38444-90-5	37-TrCB	U	ND	pg/L	3.11	21.1
53555-66-1	38-TrCB	U	ND	pg/L	2.89	21.1
38444-88-1	39-TrCB	U	ND	pg/L	2.81	21.1
38444-93-8	40-TeCB	CU	ND	pg/L	3.82	42.3
52663-59-9	41-TeCB	U	ND	pg/L	4.12	21.1
36559-22-5	42-TeCB	U	ND	pg/L	4.20	21.1
70362-46-8	43-TeCB	U	ND	pg/L	5.03	21.1
41464-39-5	44-TeCB	CJ	9.74	pg/L	3.63	63.4
70362-45-7	45-TeCB	CJ	2.07	pg/L	1.77	42.3
41464-47-5	46-TeCB	U	ND	pg/L	1.84	21.1
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	3.91	21.1
41464-40-8	49-TeCB	CU	ND	pg/L	3.42	42.3
62796-65-0	50-TeCB	CU	ND	pg/L	1.65	42.3
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	5.94	pg/L	3.63	21.1
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.37	21.1
74338-24-2	55-TeCB	U	ND	pg/L	2.43	21.1
41464-43-1	56-TeCB	U	ND	pg/L	3.08	21.1
70424-67-8	57-TeCB	U	ND	pg/L	2.32	21.1
41464-49-7	58-TeCB	U	ND	pg/L	2.32	21.1
74472-33-6	59-TeCB	CU	ND	pg/L	2.92	63.4
33025-41-1	60-TeCB	U	ND	pg/L	2.39	21.1
33284-53-6	61-TeCB	CJ	8.85	pg/L	2.32	84.5
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	2.24	21.1
52663-58-8	64-TeCB	U	ND	pg/L	2.83	21.1

**Comments:**

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- J Value is estimated
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PCB Congeners  
Certificate of Analysis  
Sample Summary

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458002	<b>Date Collected:</b> 09/28/2017 12:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-003K Rio Grande-North-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 11:55	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 946.6 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	4.08	pg/L	2.28	21.1
73575-53-8	67-TeCB	U	ND	pg/L	2.18	21.1
73575-52-7	68-TeCB	U	ND	pg/L	2.16	21.1
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	2.22	21.1
74338-23-1	73-TeCB	U	ND	pg/L	3.00	21.1
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	2.41	21.1
70362-49-1	78-TeCB	U	ND	pg/L	2.35	21.1
41464-48-6	79-TeCB	U	ND	pg/L	2.09	21.1
33284-52-5	80-TeCB	U	ND	pg/L	1.99	21.1
70362-50-4	81-TeCB	U	ND	pg/L	2.32	21.1
52663-62-4	82-PeCB	U	ND	pg/L	2.26	21.1
60145-20-2	83-PeCB	U	ND	pg/L	2.07	21.1
52663-60-2	84-PeCB	U	ND	pg/L	2.24	21.1
65510-45-4	85-PeCB	CU	ND	pg/L	1.61	63.4
55312-69-1	86-PeCB	CJ	4.10	pg/L	1.69	127
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	2.01	42.3
73575-57-2	89-PeCB	U	ND	pg/L	2.09	21.1
68194-07-0	90-PeCB	CU	ND	pg/L	3.40	63.4
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	1.94	21.1
73575-56-1	93-PeCB	CU	ND	pg/L	1.94	42.3
73575-55-0	94-PeCB	U	ND	pg/L	2.18	21.1
38379-99-6	95-PeCB	J	3.00	pg/L	1.96	21.1
73575-54-9	96-PeCB	U	ND	pg/L	1.01	21.1

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458002	<b>Date Collected:</b> 09/28/2017 12:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-003K Rio Grande-North-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 11:55	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 946.6 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	2.09	42.3
38380-01-7	99-PeCB	U	ND	pg/L	1.73	21.1
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	1.80	21.1
56558-16-8	104-PeCB	U	ND	pg/L	1.06	21.1
32598-14-4	105-PeCB	J	1.90	pg/L	1.86	21.1
70424-69-0	106-PeCB	U	ND	pg/L	1.69	21.1
70424-68-9	107-PeCB	U	ND	pg/L	1.46	21.1
70362-41-3	108-PeCB	CU	ND	pg/L	1.71	42.3
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	4.18	pg/L	1.56	42.3
39635-32-0	111-PeCB	U	ND	pg/L	1.48	21.1
74472-36-9	112-PeCB	U	ND	pg/L	1.44	21.1
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	1.84	21.1
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	2.66	pg/L	1.71	21.1
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	1.42	21.1
56558-18-0	121-PeCB	U	ND	pg/L	1.52	21.1
76842-07-4	122-PeCB	U	ND	pg/L	1.80	21.1
65510-44-3	123-PeCB	U	ND	pg/L	1.69	21.1
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	2.05	21.1
39635-33-1	127-PeCB	U	ND	pg/L	1.75	21.1
38380-07-3	128-HxCB	CU	ND	pg/L	1.75	42.3

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458002	<b>Date Collected:</b> 09/28/2017 12:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-003K Rio Grande-North-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 11:55	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 946.6 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	6.15	pg/L	1.82	63.4
52663-66-8	130-HxCB	U	ND	pg/L	2.18	21.1
61798-70-7	131-HxCB	U	ND	pg/L	2.24	21.1
38380-05-1	132-HxCB	U	ND	pg/L	2.18	21.1
35694-04-3	133-HxCB	U	ND	pg/L	2.03	21.1
52704-70-8	134-HxCB	U	ND	pg/L	2.26	21.1
52744-13-5	135-HxCB	CJ	2.01	pg/L	1.29	42.3
38411-22-2	136-HxCB	U	ND	pg/L	0.930	21.1
35694-06-5	137-HxCB	U	ND	pg/L	2.03	21.1
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	1.88	42.3
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	2.09	21.1
41411-61-4	142-HxCB	U	ND	pg/L	2.28	21.1
68194-15-0	143-HxCB	U	ND	pg/L	2.20	21.1
68194-14-9	144-HxCB	U	ND	pg/L	1.25	21.1
74472-40-5	145-HxCB	U	ND	pg/L	0.993	21.1
51908-16-8	146-HxCB	U	ND	pg/L	1.67	21.1
68194-13-8	147-HxCB	CU	ND	pg/L	4.20	42.3
74472-41-6	148-HxCB	U	ND	pg/L	1.29	21.1
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	0.951	21.1
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	0.909	21.1
35065-27-1	153-HxCB	CJ	4.06	pg/L	1.54	42.3
60145-22-4	154-HxCB	U	ND	pg/L	1.10	21.1
33979-03-2	155-HxCB	U	ND	pg/L	0.951	21.1
38380-08-4	156-HxCB	CU	ND	pg/L	1.65	42.3
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	1.39	21.1
39635-35-3	159-HxCB	U	ND	pg/L	1.33	21.1
41411-62-5	160-HxCB	U	ND	pg/L	1.73	21.1

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 11458002  
 Client Sample: 1668C Water  
 Client ID: 1709F81-003K Rio Grande-North-20  
 Batch ID: 36029  
 Run Date: 10/21/2017 11:55  
 Data File: d21oct17a-5  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Date Collected: 09/28/2017 12:00  
 Date Received: 10/06/2017 09:46  
 Method: EPA Method 1668C  
 Analyst: MJC  
 Prep Method: SW846 3520C  
 Prep Aliquot: 946.6 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	1.54	21.1
39635-34-2	162-HxCB	U	ND	pg/L	1.35	21.1
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	1.50	21.1
74472-46-1	165-HxCB	U	ND	pg/L	1.65	21.1
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	1.27	21.1
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.48	21.1
35065-30-6	170-HpCB	U	ND	pg/L	2.20	21.1
52663-71-5	171-HpCB	CU	ND	pg/L	2.16	42.3
52663-74-8	172-HpCB	U	ND	pg/L	2.16	21.1
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	2.28	21.1
40186-70-7	175-HpCB	U	ND	pg/L	1.42	21.1
52663-65-7	176-HpCB	U	ND	pg/L	1.12	21.1
52663-70-4	177-HpCB	U	ND	pg/L	2.07	21.1
52663-67-9	178-HpCB	U	ND	pg/L	1.50	21.1
52663-64-6	179-HpCB	U	ND	pg/L	1.08	21.1
35065-29-3	180-HpCB	CJ	3.74	pg/L	1.75	42.3
74472-47-2	181-HpCB	U	ND	pg/L	1.99	21.1
60145-23-5	182-HpCB	U	ND	pg/L	1.39	21.1
52663-69-1	183-HpCB	CU	ND	pg/L	1.99	42.3
74472-48-3	184-HpCB	U	ND	pg/L	1.10	21.1
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.16	21.1
52663-68-0	187-HpCB	J	1.99	pg/L	1.37	21.1
74487-85-7	188-HpCB	U	ND	pg/L	1.12	21.1
39635-31-9	189-HpCB	U	ND	pg/L	1.42	21.1
41411-64-7	190-HpCB	U	ND	pg/L	1.65	21.1
74472-50-7	191-HpCB	U	ND	pg/L	1.54	21.1
74472-51-8	192-HpCB	U	ND	pg/L	1.77	21.1

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458002	<b>Date Collected:</b> 09/28/2017 12:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-003K Rio Grande-North-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 11:55	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 946.6 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	2.89	pg/L	1.50	21.1
52663-78-2	195-OcCB	U	ND	pg/L	1.58	21.1
42740-50-1	196-OcCB	U	ND	pg/L	1.39	21.1
33091-17-7	197-OcCB	CU	ND	pg/L	1.08	42.3
68194-17-2	198-OcCB	CJ	2.30	pg/L	1.46	42.3
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.06	21.1
2136-99-4	202-OcCB	U	ND	pg/L	1.16	21.1
52663-76-0	203-OcCB	U	ND	pg/L	1.33	21.1
74472-52-9	204-OcCB	U	ND	pg/L	1.06	21.1
74472-53-0	205-OcCB	U	ND	pg/L	1.18	21.1
40186-72-9	206-NoCB	U	ND	pg/L	1.84	21.1
52663-79-3	207-NoCB	U	ND	pg/L	1.44	21.1
52663-77-1	208-NoCB	U	ND	pg/L	1.33	21.1
2051-24-3	209-DeCB	J	1.96	pg/L	1.31	21.1
1336-36-3	Total PCB Congeners	J	210	pg/L	7.06	21.1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1030	2110	pg/L	48.8	(5%-145%)
13C-3-MoCB		1190	2110	pg/L	56.3	(5%-145%)
13C-4-DiCB		1350	2110	pg/L	64.0	(5%-145%)
13C-15-DiCB		2320	2110	pg/L	110	(5%-145%)
13C-19-TrCB		1930	2110	pg/L	91.3	(5%-145%)
13C-37-TrCB		1880	2110	pg/L	89.1	(5%-145%)
13C-54-TcCB		1390	2110	pg/L	66.0	(5%-145%)
13C-77-TcCB		1930	2110	pg/L	91.2	(10%-145%)
13C-81-TcCB		1920	2110	pg/L	91.0	(10%-145%)
13C-104-PeCB		1700	2110	pg/L	80.4	(10%-145%)
13C-105-PeCB		1740	2110	pg/L	82.4	(10%-145%)
13C-114-PeCB		1690	2110	pg/L	79.8	(10%-145%)
13C-118-PeCB		1690	2110	pg/L	80.2	(10%-145%)
13C-123-PeCB		1770	2110	pg/L	83.9	(10%-145%)
13C-126-PeCB		1730	2110	pg/L	82.1	(10%-145%)
13C-155-HxCB		1660	2110	pg/L	78.6	(10%-145%)
13C-156-HxCB	C	3210	4230	pg/L	76.0	(10%-145%)
13C-157-HxCB	C156L					
13C-167-HxCB		1670	2110	pg/L	79.1	(10%-145%)
13C-169-HxCB		1690	2110	pg/L	80.2	(10%-145%)
13C-188-HpCB		1610	2110	pg/L	76.2	(10%-145%)
13C-189-HpCB		1530	2110	pg/L	72.2	(10%-145%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 11458002	<b>Date Collected:</b> 09/28/2017 12:00	<b>Matrix:</b> WATER
<b>Client Sample:</b> 1668C Water	<b>Date Received:</b> 10/06/2017 09:46	
<b>Client ID:</b> 1709F81-003K Rio Grande-North-20		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/21/2017 11:55	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP875
<b>Data File:</b> d21oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 946.6 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
13C-202-OcCB			1570	2110	pg/L	74.2
13C-205-OcCB			1930	2110	pg/L	91.3
13C-206-NoCB			2090	2110	pg/L	99.0
13C-208-NoCB			1770	2110	pg/L	83.6
13C-209-DecB			2020	2110	pg/L	95.6
13C-28-TrCB			1340	2110	pg/L	63.3
13C-111-PcCB			1810	2110	pg/L	85.6
13C-178-HpCB			1840	2110	pg/L	87.0
						<b>Acceptable Limits</b>
						(10%-145%)
						(10%-145%)
						(10%-145%)
						(10%-145%)
						(5%-145%)
						(10%-145%)
						(10%-145%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

# **Quality Control Summary**

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: 1709F81

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11458001	1709F81-001K Rio Grande-South-21070928	13C-1-MoCB		57.8	(5%-145%)
		13C-3-MoCB		66.6	(5%-145%)
		13C-4-DiCB		72.4	(5%-145%)
		13C-15-DiCB		141	(5%-145%)
		13C-19-TrCB		108	(5%-145%)
		13C-37-TrCB		101	(5%-145%)
		13C-54-TeCB		62.2	(5%-145%)
		13C-77-TeCB		104	(10%-145%)
		13C-81-TeCB		103	(10%-145%)
		13C-104-PeCB		81.6	(10%-145%)
		13C-105-PeCB		85.5	(10%-145%)
		13C-114-PeCB		82.4	(10%-145%)
		13C-118-PeCB		81.7	(10%-145%)
		13C-123-PeCB		85.7	(10%-145%)
		13C-126-PeCB		87.1	(10%-145%)
		13C-155-HxCB		81.9	(10%-145%)
		13C-156-HxCB		79.9	(10%-145%)
		13C-157-HxCB			
		13C-167-HxCB			
		13C-169-HxCB			
		13C-188-HpCB			
		13C-189-HpCB			
		13C-202-OcCB			
		13C-205-OcCB			
		13C-206-NoCB			
		13C-208-NoCB			
		13C-209-DeCB			
		13C-28-TrCB			
13C-111-PeCB					
13C-178-HpCB					
			C C156L		
				83.3	(10%-145%)
				88.3	(10%-145%)
				76.4	(10%-145%)
				77.0	(10%-145%)
				74.2	(10%-145%)
				97.3	(10%-145%)
				105	(10%-145%)
				89.9	(10%-145%)
				102	(10%-145%)
				57.4	(5%-145%)
				88.9	(10%-145%)
				91.1	(10%-145%)
11458002	1709F81-003K Rio Grande-North-20170927	13C-1-MoCB		48.8	(5%-145%)
		13C-3-MoCB		56.3	(5%-145%)
		13C-4-DiCB		64.0	(5%-145%)
		13C-15-DiCB		110	(5%-145%)
		13C-19-TrCB		91.3	(5%-145%)
		13C-37-TrCB		89.1	(5%-145%)
		13C-54-TeCB		66.0	(5%-145%)
		13C-77-TeCB		91.2	(10%-145%)
		13C-81-TeCB		91.0	(10%-145%)
		13C-104-PeCB		80.4	(10%-145%)
		13C-105-PeCB		82.4	(10%-145%)
		13C-114-PeCB		79.8	(10%-145%)
		13C-118-PeCB		80.2	(10%-145%)
		13C-123-PeCB		83.9	(10%-145%)
		13C-126-PeCB		82.1	(10%-145%)
		13C-155-HxCB		78.6	(10%-145%)
		13C-156-HxCB		76.0	(10%-145%)
		13C-157-HxCB			
		13C-167-HxCB			
		13C-169-HxCB			
13C-188-HpCB					
13C-189-HpCB					
			C C156L		
				79.1	(10%-145%)
				80.2	(10%-145%)
				76.2	(10%-145%)
				72.2	(10%-145%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: 1709F81

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
11458002	1709F81-003K Rio Grande-North-20170927	13C-202-OcCB		74.2	(10%-145%)	
		13C-205-OcCB		91.3	(10%-145%)	
		13C-206-NoCB		99.0	(10%-145%)	
		13C-208-NoCB		83.6	(10%-145%)	
		13C-209-DeCB		95.6	(10%-145%)	
		13C-28-TrCB		63.3	(5%-145%)	
		13C-111-PeCB		85.6	(10%-145%)	
		13C-178-HpCB		87.0	(10%-145%)	
12019814	LCS for batch 35954	13C-1-MoCB		47.4	(15%-145%)	
		13C-3-MoCB		57.8	(15%-145%)	
		13C-4-DiCB		66.6	(15%-145%)	
		13C-15-DiCB		104	(15%-145%)	
		13C-19-TrCB		91.0	(15%-145%)	
		13C-37-TrCB		103	(15%-145%)	
		13C-54-TeCB		64.0	(15%-145%)	
		13C-77-TeCB		120	(40%-145%)	
		13C-81-TeCB		119	(40%-145%)	
		13C-104-PeCB		81.3	(40%-145%)	
		13C-105-PeCB		86.9	(40%-145%)	
		13C-114-PeCB		84.9	(40%-145%)	
		13C-118-PeCB		84.3	(40%-145%)	
		13C-123-PeCB		89.1	(40%-145%)	
		13C-126-PeCB		87.7	(40%-145%)	
		13C-155-HxCB		82.9	(40%-145%)	
		13C-156-HxCB		82.8	(40%-145%)	
		13C-157-HxCB				
		13C-167-HxCB		C	86.0	(40%-145%)
		13C-169-HxCB		C156L	90.6	(40%-145%)
		13C-188-HpCB			78.8	(40%-145%)
		13C-189-HpCB			78.5	(40%-145%)
		13C-202-OcCB			79.8	(40%-145%)
		13C-205-OcCB			100	(40%-145%)
13C-206-NoCB			115	(40%-145%)		
13C-208-NoCB			96.2	(40%-145%)		
13C-209-DeCB			113	(40%-145%)		
13C-28-TrCB			59.9	(15%-145%)		
13C-111-PeCB			94.9	(40%-145%)		
13C-178-HpCB			100	(40%-145%)		
12019815	LCSD for batch 35954	13C-1-MoCB		46.1	(15%-145%)	
		13C-3-MoCB		53.2	(15%-145%)	
		13C-4-DiCB		64.3	(15%-145%)	
		13C-15-DiCB		97.5	(15%-145%)	
		13C-19-TrCB		88.7	(15%-145%)	
		13C-37-TrCB		99.2	(15%-145%)	
		13C-54-TeCB		67.1	(15%-145%)	
		13C-77-TeCB		120	(40%-145%)	
		13C-81-TeCB		119	(40%-145%)	
		13C-104-PeCB		77.7	(40%-145%)	
		13C-105-PeCB		86.4	(40%-145%)	
		13C-114-PeCB		83.7	(40%-145%)	
		13C-118-PeCB		84.5	(40%-145%)	

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: 1709F81

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
12019815	LCSD for batch 35954	13C-123-PeCB		86.7	(40%-145%)	
		13C-126-PeCB		89.4	(40%-145%)	
		13C-155-HxCB		78.0	(40%-145%)	
		13C-156-HxCB	C	78.8	(40%-145%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		81.1	(40%-145%)	
		13C-169-HxCB		88.1	(40%-145%)	
		13C-188-HpCB		73.5	(40%-145%)	
		13C-189-HpCB		74.6	(40%-145%)	
		13C-202-OcCB		74.0	(40%-145%)	
		13C-205-OcCB		97.9	(40%-145%)	
		13C-206-NoCB		111	(40%-145%)	
		13C-208-NoCB		91.6	(40%-145%)	
		13C-209-DeCB		110	(40%-145%)	
		13C-28-TrCB		63.3	(15%-145%)	
		13C-111-PeCB		92.0	(40%-145%)	
		13C-178-HpCB		95.7	(40%-145%)	
12019813	MB for batch 35954	13C-1-MoCB		52.1	(5%-145%)	
		13C-3-MoCB		57.8	(5%-145%)	
		13C-4-DiCB		68.8	(5%-145%)	
		13C-15-DiCB		113	(5%-145%)	
		13C-19-TrCB		95.5	(5%-145%)	
		13C-37-TrCB		106	(5%-145%)	
		13C-54-TeCB		67.5	(5%-145%)	
		13C-77-TeCB		125	(10%-145%)	
		13C-81-TeCB		127	(10%-145%)	
		13C-104-PeCB		78.2	(10%-145%)	
		13C-105-PeCB		87.3	(10%-145%)	
		13C-114-PeCB		84.8	(10%-145%)	
		13C-118-PeCB		84.5	(10%-145%)	
		13C-123-PeCB		88.7	(10%-145%)	
		13C-126-PeCB		89.2	(10%-145%)	
		13C-155-HxCB		82.0	(10%-145%)	
		13C-156-HxCB	C	80.0	(10%-145%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		82.2	(10%-145%)	
		13C-169-HxCB		89.5	(10%-145%)	
13C-188-HpCB		75.4	(10%-145%)			
13C-189-HpCB		75.7	(10%-145%)			
13C-202-OcCB		75.9	(10%-145%)			
13C-205-OcCB		97.6	(10%-145%)			
13C-206-NoCB		111	(10%-145%)			
13C-208-NoCB		93.4	(10%-145%)			
13C-209-DeCB		112	(10%-145%)			
13C-28-TrCB		61.5	(5%-145%)			
13C-111-PeCB		96.5	(10%-145%)			
13C-178-HpCB		98.0	(10%-145%)			

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**PCB Congeners  
Quality Control Summary  
Spike Recovery Report**

<b>SDG Number:</b> 1709F81	<b>Sample Type:</b> Laboratory Control Sample
<b>Client ID:</b> LCS for batch 35954	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 12019814	
<b>Instrument:</b> HRP875	<b>Analysis Date:</b> 10/23/2017 09:59
<b>Analyst:</b> MLS	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 35954
	<b>Batch ID:</b> 36029

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	500	464	92.7	60-135
2051-62-9	LCS 3-MoCB	500	495	99	60-135
13029-08-8	LCS 4-DiCB	500	470	93.9	60-135
2050-68-2	LCS 15-DiCB	500	559	112	60-135
38444-73-4	LCS 19-TrCB	500	489	97.7	60-135
38444-90-5	LCS 37-TrCB	500	499	99.9	60-135
15968-05-5	LCS 54-TeCB	1000	957	95.7	60-135
32598-13-3	LCS 77-TeCB	1000	927	92.7	60-135
70362-50-4	LCS 81-TeCB	1000	1030	103	60-135
56558-16-8	LCS 104-PeCB	1000	1010	101	60-135
32598-14-4	LCS 105-PeCB	1000	1130	113	60-135
74472-37-0	LCS 114-PeCB	1000	1020	102	60-135
31508-00-6	LCS 118-PeCB	1000	1000	100	60-135
65510-44-3	LCS 123-PeCB	1000	993	99.3	60-135
57465-28-8	LCS 126-PeCB	1000	1110	111	60-135
33979-03-2	LCS 155-HxCB	1000	1150	115	60-135
38380-08-4	LCS 156-HxCB	2000	C 2260	113	60-135
69782-90-7	LCS 157-HxCB		C156		
52663-72-6	LCS 167-HxCB	1000	1140	114	60-135
32774-16-6	LCS 169-HxCB	1000	1080	108	60-135
74487-85-7	LCS 188-HpCB	1000	1000	100	60-135
39635-31-9	LCS 189-HpCB	1000	1040	104	60-135
2136-99-4	LCS 202-OcCB	1500	1510	100	60-135
74472-53-0	LCS 205-OcCB	1500	1410	94.3	60-135
40186-72-9	LCS 206-NoCB	1500	1390	92.4	60-135
52663-77-1	LCS 208-NoCB	1500	1520	101	60-135
2051-24-3	LCS 209-DcCB	1500	1580	105	60-135

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> 1709F81	<b>Sample Type:</b> Laboratory Control Sample Duplicate
<b>Client ID:</b> LCSD for batch 35954	<b>Matrix:</b> WATER
<b>Lab Sample ID:</b> 12019815	
<b>Instrument:</b> HRP875	<b>Analysis Date:</b> 10/23/2017 11:08
<b>Analyst:</b> MLS	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 35954
	<b>Batch ID:</b> 36029

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	500	445	89	60-135	4.11	0-30
2051-62-9	LCSD 3-MoCB	500	517	103	60-135	4.22	0-30
13029-08-8	LCSD 4-DiCB	500	471	94.2	60-135	0.332	0-30
2050-68-2	LCSD 15-DiCB	500	548	110	60-135	1.98	0-30
38444-73-4	LCSD 19-TrCB	500	486	97.2	60-135	0.505	0-30
38444-90-5	LCSD 37-TrCB	500	496	99.2	60-135	0.683	0-30
15968-05-5	LCSD 54-TeCB	1000	956	95.6	60-135	0.128	0-30
32598-13-3	LCSD 77-TeCB	1000	908	90.8	60-135	2.08	0-30
70362-50-4	LCSD 81-TeCB	1000	1010	101	60-135	1.59	0-30
56558-16-8	LCSD 104-PeCB	1000	987	98.7	60-135	1.94	0-30
32598-14-4	LCSD 105-PeCB	1000	1100	110	60-135	3.21	0-30
74472-37-0	LCSD 114-PeCB	1000	998	99.8	60-135	2.23	0-30
31508-00-6	LCSD 118-PeCB	1000	964	96.4	60-135	3.71	0-30
65510-44-3	LCSD 123-PeCB	1000	970	97	60-135	2.27	0-30
57465-28-8	LCSD 126-PeCB	1000	1070	107	60-135	3.21	0-30
32979-03-2	LCSD 155-HxCB	1000	1090	109	60-135	5.84	0-30
38380-08-4	LCSD 156-HxCB	2000	2180	109	60-135	3.67	0-30
69782-90-7	LCSD 157-HxCB						
52663-72-6	LCSD 167-HxCB	1000	1120	112	60-135	1.94	0-30
32774-16-6	LCSD 169-HxCB	1000	1060	106	60-135	1.87	0-30
74487-85-7	LCSD 188-HpCB	1000	982	98.2	60-135	1.77	0-30
39635-31-9	LCSD 189-HpCB	1000	1030	103	60-135	0.740	0-30
2136-99-4	LCSD 202-OcCB	1500	1480	98.7	60-135	1.69	0-30
74472-53-0	LCSD 205-OcCB	1500	1380	91.8	60-135	2.66	0-30
40186-72-9	LCSD 206-NoCB	1500	1360	90.9	60-135	1.62	0-30
52663-77-1	LCSD 208-NoCB	1500	1510	101	60-135	0.398	0-30
2051-24-3	LCSD 209-DeCB	1500	1550	103	60-135	1.65	0-30

Method Blank Summary

SDG Number: 1709F81  
Client ID: MB for batch 35954  
Lab Sample ID: 12019813  
Column:

Client: HALL001  
Instrument ID: HRP875  
Prep Date: 17-OCT-17

Matrix: WATER  
Data File: d23oct17a-4  
Analyzed: 10/23/17 12:18

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 1709F81-001K Rio Grande-South-21070928	11458001	d21oct17a-4	10/21/17	1046
02 1709F81-003K Rio Grande-North-20170927	11458002	d21oct17a-5	10/21/17	1155
03 LCS for batch 35954	12019814	d23oct17a-2	10/23/17	0959
04 LCSD for batch 35954	12019815	d23oct17a-3	10/23/17	1108

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 12019813  
 Client Sample: QC for batch 35954  
 Client ID: MB for batch 35954  
 Batch ID: 36029  
 Run Date: 10/23/2017 12:18  
 Data File: d23oct17a-4  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Method: EPA Method 1668C  
 Analyst: MLS  
 Prep Method: SW846 3520C  
 Prep Aliquot: 1000 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	2.44	20.0
2051-61-8	2-MoCB	U	ND	pg/L	2.82	20.0
2051-62-9	3-MoCB	U	ND	pg/L	2.72	20.0
13029-08-8	4-DiCB	U	ND	pg/L	11.5	20.0
16605-91-7	5-DiCB	U	ND	pg/L	11.5	20.0
25569-80-6	6-DiCB	U	ND	pg/L	9.38	20.0
33284-50-3	7-DiCB	U	ND	pg/L	9.82	20.0
34883-43-7	8-DiCB	U	ND	pg/L	8.54	20.0
34883-39-1	9-DiCB	U	ND	pg/L	10.6	20.0
33146-45-1	10-DiCB	U	ND	pg/L	7.22	20.0
2050-67-1	11-DiCB	U	ND	pg/L	10.5	100
2974-92-7	12-DiCB	CU	ND	pg/L	10.4	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	9.84	20.0
2050-68-2	15-DiCB	U	ND	pg/L	10.8	20.0
38444-78-9	16-TrCB	U	ND	pg/L	2.86	20.0
37680-66-3	17-TrCB	U	ND	pg/L	2.78	20.0
37680-65-2	18-TrCB	CU	ND	pg/L	2.26	40.0
38444-73-4	19-TrCB	U	ND	pg/L	4.30	20.0
38444-84-7	20-TrCB	CJ	2.48	pg/L	1.86	40.0
55702-46-0	21-TrCB	CU	ND	pg/L	1.84	40.0
38444-85-8	22-TrCB	U	ND	pg/L	1.92	20.0
55720-44-0	23-TrCB	U	ND	pg/L	1.92	20.0
55702-45-9	24-TrCB	U	ND	pg/L	1.98	20.0
55712-37-3	25-TrCB	U	ND	pg/L	1.66	20.0
38444-81-4	26-TrCB	CU	ND	pg/L	1.86	40.0
38444-76-7	27-TrCB	U	ND	pg/L	1.98	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	2.34	20.0
38444-77-8	32-TrCB	U	ND	pg/L	1.76	20.0

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 12019813  
 Client Sample: QC for batch 35954  
 Client ID: MB for batch 35954  
 Batch ID: 36029  
 Run Date: 10/23/2017 12:18  
 Data File: d23oct17a-4  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Method: EPA Method 1668C  
 Analyst: MLS  
 Prep Method: SW846 3520C  
 Prep Aliquot: 1000 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C2I				
37680-68-5	34-TrCB	U	ND	pg/L	1.96	20.0
37680-69-6	35-TrCB	U	ND	pg/L	2.42	20.0
38444-87-0	36-TrCB	U	ND	pg/L	2.10	20.0
38444-90-5	37-TrCB	U	ND	pg/L	2.12	20.0
53555-66-1	38-TrCB	U	ND	pg/L	2.24	20.0
38444-88-1	39-TrCB	U	ND	pg/L	2.10	20.0
38444-93-8	40-TeCB	CU	ND	pg/L	2.88	40.0
52663-59-9	41-TeCB	U	ND	pg/L	3.22	20.0
36559-22-5	42-TeCB	U	ND	pg/L	3.22	20.0
70362-46-8	43-TeCB	U	ND	pg/L	3.88	20.0
41464-39-5	44-TeCB	CJ	4.44	pg/L	2.84	60.0
70362-45-7	45-TeCB	CU	ND	pg/L	1.40	40.0
41464-47-5	46-TeCB	U	ND	pg/L	1.42	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	3.02	20.0
41464-40-8	49-TeCB	CU	ND	pg/L	2.60	40.0
62796-65-0	50-TeCB	CU	ND	pg/L	1.30	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	3.06	pg/L	2.78	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.56	20.0
74338-24-2	55-TeCB	U	ND	pg/L	2.30	20.0
41464-43-1	56-TeCB	U	ND	pg/L	2.28	20.0
70424-67-8	57-TeCB	U	ND	pg/L	2.08	20.0
41464-49-7	58-TeCB	U	ND	pg/L	2.06	20.0
74472-33-6	59-TeCB	CU	ND	pg/L	2.26	60.0
33025-41-1	60-TeCB	U	ND	pg/L	2.20	20.0
33284-53-6	61-TeCB	CJ	4.76	pg/L	2.06	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	1.94	20.0
52663-58-8	64-TeCB	U	ND	pg/L	2.24	20.0

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 12019813		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35954		
<b>Client ID:</b> MB for batch 35954		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/23/2017 12:18	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP875
<b>Data File:</b> d23oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	1.92	20.0
73575-53-8	67-TeCB	U	ND	pg/L	1.88	20.0
73575-52-7	68-TeCB	U	ND	pg/L	1.92	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	1.96	20.0
74338-23-1	73-TeCB	U	ND	pg/L	2.32	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	2.36	pg/L	1.82	20.0
70362-49-1	78-TeCB	U	ND	pg/L	2.16	20.0
41464-48-6	79-TeCB	U	ND	pg/L	1.90	20.0
33284-52-5	80-TeCB	U	ND	pg/L	1.88	20.0
70362-50-4	81-TeCB	U	ND	pg/L	1.76	20.0
52663-62-4	82-PeCB	U	ND	pg/L	2.18	20.0
60145-20-2	83-PeCB	U	ND	pg/L	2.16	20.0
52663-60-2	84-PeCB	U	ND	pg/L	2.14	20.0
65510-45-4	85-PeCB	CU	ND	pg/L	1.62	60.0
55312-69-1	86-PeCB	CU	ND	pg/L	3.76	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	1.96	40.0
73575-57-2	89-PeCB	U	ND	pg/L	2.00	20.0
68194-07-0	90-PeCB	CJ	2.78	pg/L	1.70	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	1.96	20.0
73575-56-1	93-PeCB	CU	ND	pg/L	1.88	40.0
73575-55-0	94-PeCB	U	ND	pg/L	2.10	20.0
38379-99-6	95-PeCB	U	ND	pg/L	1.90	20.0
73575-54-9	96-PeCB	U	ND	pg/L	0.720	20.0

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 12019813		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35954		
<b>Client ID:</b> MB for batch 35954		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/23/2017 12:18	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP875
<b>Data File:</b> d23oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB		C86			
60233-25-2	98-PeCB	CU	ND	pg/L	2.00	40.0
38380-01-7	99-PeCB	U	ND	pg/L	1.66	20.0
39485-83-1	100-PeCB		C93			
37680-73-2	101-PeCB		C90			
68194-06-9	102-PeCB		C98			
60145-21-3	103-PeCB	U	ND	pg/L	1.76	20.0
56558-16-8	104-PeCB	U	ND	pg/L	0.800	20.0
32598-14-4	105-PeCB	U	ND	pg/L	1.80	20.0
70424-69-0	106-PeCB	U	ND	pg/L	1.88	20.0
70424-68-9	107-PeCB	U	ND	pg/L	1.52	20.0
70362-41-3	108-PeCB	CU	ND	pg/L	1.74	40.0
74472-35-8	109-PeCB		C86			
38380-03-9	110-PeCB	CJ	1.76	pg/L	1.54	40.0
39635-32-0	111-PeCB	U	ND	pg/L	1.44	20.0
74472-36-9	112-PeCB	U	ND	pg/L	1.62	20.0
68194-10-5	113-PeCB		C90			
74472-37-0	114-PeCB	U	ND	pg/L	1.76	20.0
74472-38-1	115-PeCB		C110			
18259-05-7	116-PeCB		C85			
68194-11-6	117-PeCB		C85			
31508-00-6	118-PeCB	U	ND	pg/L	1.68	20.0
56558-17-9	119-PeCB		C86			
68194-12-7	120-PeCB	U	ND	pg/L	1.40	20.0
56558-18-0	121-PeCB	U	ND	pg/L	1.48	20.0
76842-07-4	122-PeCB	U	ND	pg/L	1.82	20.0
65510-44-3	123-PeCB	U	ND	pg/L	1.66	20.0
70424-70-3	124-PeCB		C108			
74472-39-2	125-PeCB		C86			
57465-28-8	126-PeCB	U	ND	pg/L	1.96	20.0
39635-33-1	127-PeCB	U	ND	pg/L	1.74	20.0
38380-07-3	128-HxCB	CU	ND	pg/L	1.92	40.0

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
 Lab Sample ID: 12019813  
 Client Sample: QC for batch 35954  
 Client ID: MB for batch 35954  
 Batch ID: 36029  
 Run Date: 10/23/2017 12:18  
 Data File: d23oct17a-4  
 Prep Batch: 35954  
 Prep Date: 17-OCT-17

Client: HALL001  
 Method: EPA Method 1668C  
 Analyst: MLS  
 Prep Method: SW846 3520C  
 Prep Aliquot: 1000 mL

Project: HALL00117  
 Matrix: WATER  
 Prep Basis: As Received  
 Instrument: HRP875  
 Dilution: 1  
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	2.58	pg/L	2.00	60.0
52663-66-8	130-HxCB	U	ND	pg/L	2.40	20.0
61798-70-7	131-HxCB	U	ND	pg/L	2.58	20.0
38380-05-1	132-HxCB	U	ND	pg/L	2.42	20.0
35694-04-3	133-HxCB	U	ND	pg/L	2.26	20.0
52704-70-8	134-HxCB	U	ND	pg/L	2.62	20.0
52744-13-5	135-HxCB	CU	ND	pg/L	1.08	40.0
38411-22-2	136-HxCB	U	ND	pg/L	0.800	20.0
35694-06-5	137-HxCB	U	ND	pg/L	2.02	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	2.08	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	2.26	20.0
41411-61-4	142-HxCB	U	ND	pg/L	2.56	20.0
68194-15-0	143-HxCB	U	ND	pg/L	2.44	20.0
68194-14-9	144-HxCB	U	ND	pg/L	1.02	20.0
74472-40-5	145-HxCB	U	ND	pg/L	0.840	20.0
51908-16-8	146-HxCB	U	ND	pg/L	1.76	20.0
68194-13-8	147-HxCB	CU	ND	pg/L	2.14	40.0
74472-41-6	148-HxCB	U	ND	pg/L	1.06	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	0.820	20.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	0.800	20.0
35065-27-1	153-HxCB	CU	ND	pg/L	1.70	40.0
60145-22-4	154-HxCB	U	ND	pg/L	0.920	20.0
33979-03-2	155-HxCB	U	ND	pg/L	0.760	20.0
38380-08-4	156-HxCB	CJ	2.20	pg/L	1.34	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	1.52	20.0
39635-35-3	159-HxCB	U	ND	pg/L	1.06	20.0
41411-62-5	160-HxCB	U	ND	pg/L	1.92	20.0

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 12019813		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35954		
<b>Client ID:</b> MB for batch 35954		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/23/2017 12:18	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP875
<b>Data File:</b> d23oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	1.72	20.0
39635-34-2	162-HxCB	U	ND	pg/L	1.06	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	1.74	20.0
74472-46-1	165-HxCB	U	ND	pg/L	1.84	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	1.02	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.12	20.0
35065-30-6	170-HpCB	U	ND	pg/L	1.42	20.0
52663-71-5	171-HpCB	CU	ND	pg/L	1.46	40.0
52663-74-8	172-HpCB	U	ND	pg/L	1.44	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	1.42	20.0
40186-70-7	175-HpCB	U	ND	pg/L	1.28	20.0
52663-65-7	176-HpCB	U	ND	pg/L	1.00	20.0
52663-70-4	177-HpCB	U	ND	pg/L	1.44	20.0
52663-67-9	178-HpCB	U	ND	pg/L	1.34	20.0
52663-64-6	179-HpCB	U	ND	pg/L	1.00	20.0
35065-29-3	180-HpCB	CU	ND	pg/L	1.16	40.0
74472-47-2	181-HpCB	U	ND	pg/L	1.38	20.0
60145-23-5	182-HpCB	U	ND	pg/L	1.24	20.0
52663-69-1	183-HpCB	CU	ND	pg/L	1.34	40.0
74472-48-3	184-HpCB	U	ND	pg/L	0.960	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.04	20.0
52663-68-0	187-HpCB	U	ND	pg/L	1.22	20.0
74487-85-7	188-HpCB	U	ND	pg/L	1.02	20.0
39635-31-9	189-HpCB	U	ND	pg/L	1.22	20.0
41411-64-7	190-HpCB	U	ND	pg/L	1.08	20.0
74472-50-7	191-HpCB	U	ND	pg/L	1.06	20.0
74472-51-8	192-HpCB	U	ND	pg/L	1.18	20.0

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 12019813		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35954		
<b>Client ID:</b> MB for batch 35954		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/23/2017 12:18	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP875
<b>Data File:</b> d23oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB		C180			
35694-08-7	194-OcCB	U	ND	pg/L	1.38	20.0
52663-78-2	195-OcCB	U	ND	pg/L	1.32	20.0
42740-50-1	196-OcCB	U	ND	pg/L	1.16	20.0
33091-17-7	197-OcCB	CU	ND	pg/L	0.920	40.0
68194-17-2	198-OcCB	CU	ND	pg/L	1.22	40.0
52663-75-9	199-OcCB		C198			
52663-73-7	200-OcCB		C197			
40186-71-8	201-OcCB	U	ND	pg/L	0.900	20.0
2136-99-4	202-OcCB	U	ND	pg/L	0.980	20.0
52663-76-0	203-OcCB	U	ND	pg/L	1.16	20.0
74472-52-9	204-OcCB	U	ND	pg/L	0.900	20.0
74472-53-0	205-OcCB	U	ND	pg/L	0.980	20.0
40186-72-9	206-NoCB	U	ND	pg/L	1.30	20.0
52663-79-3	207-NoCB	U	ND	pg/L	0.980	20.0
52663-77-1	208-NoCB	U	ND	pg/L	0.920	20.0
2051-24-3	209-DeCB	J	1.66	pg/L	0.960	20.0
1336-36-3	Total PCB Congeners	J	28.1	pg/L	6.68	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1040	2000	pg/L	52.1	(5%-145%)
13C-3-MoCB		1160	2000	pg/L	57.8	(5%-145%)
13C-4-DiCB		1380	2000	pg/L	68.8	(5%-145%)
13C-15-DiCB		2260	2000	pg/L	113	(5%-145%)
13C-19-TrCB		1910	2000	pg/L	95.5	(5%-145%)
13C-37-TrCB		2120	2000	pg/L	106	(5%-145%)
13C-54-TcCB		1350	2000	pg/L	67.5	(5%-145%)
13C-77-TcCB		2500	2000	pg/L	125	(10%-145%)
13C-81-TcCB		2530	2000	pg/L	127	(10%-145%)
13C-104-PeCB		1560	2000	pg/L	78.2	(10%-145%)
13C-105-PeCB		1750	2000	pg/L	87.3	(10%-145%)
13C-114-PeCB		1700	2000	pg/L	84.8	(10%-145%)
13C-118-PeCB		1690	2000	pg/L	84.5	(10%-145%)
13C-123-PeCB		1770	2000	pg/L	88.7	(10%-145%)
13C-126-PeCB		1780	2000	pg/L	89.2	(10%-145%)
13C-155-HxCB		1640	2000	pg/L	82.0	(10%-145%)
13C-156-HxCB	C	3200	4000	pg/L	80.0	(10%-145%)
13C-157-HxCB	C156L					
13C-167-HxCB		1640	2000	pg/L	82.2	(10%-145%)
13C-169-HxCB		1790	2000	pg/L	89.5	(10%-145%)
13C-188-HpCB		1510	2000	pg/L	75.4	(10%-145%)
13C-189-HpCB		1510	2000	pg/L	75.7	(10%-145%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81	Client: HALL001	Project: HALL00117
Lab Sample ID: 12019813		Matrix: WATER
Client Sample: QC for batch 35954		
Client ID: MB for batch 35954		Prep Basis: As Received
Batch ID: 36029	Method: EPA Method 1668C	
Run Date: 10/23/2017 12:18	Analyst: MLS	Instrument: HRP875
Data File: d23oct17a-4		Dilution: 1
Prep Batch: 35954	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 17-OCT-17	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-202-OcCB			1520	2000	pg/L	75.9 (10%-145%)
13C-205-OcCB			1950	2000	pg/L	97.6 (10%-145%)
13C-206-NoCB			2220	2000	pg/L	111 (10%-145%)
13C-208-NoCB			1870	2000	pg/L	93.4 (10%-145%)
13C-209-DcCB			2230	2000	pg/L	112 (10%-145%)
13C-28-TrCB			1230	2000	pg/L	61.5 (5%-145%)
13C-111-PeCB			1930	2000	pg/L	96.5 (10%-145%)
13C-178-HpCB			1960	2000	pg/L	98.0 (10%-145%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

SDG Number: 1709F81  
Lab Sample ID: 12019814  
Client Sample: QC for batch 35954  
Client ID: LCS for batch 35954  
Batch ID: 36029  
Run Date: 10/23/2017 09:59  
Data File: d23oct17a-2  
Prep Batch: 35954  
Prep Date: 17-OCT-17

Client: HALL001  
Method: EPA Method 1668C  
Analyst: MLS  
Prep Method: SW846 3520C  
Prep Aliquot: 1000 mL

Project: HALL00117  
Matrix: WATER  
Prep Basis: As Received  
Instrument: HRP875  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		464	pg/L	5.28	20.0
2051-62-9	3-MoCB		495	pg/L	5.58	20.0
13029-08-8	4-DiCB		470	pg/L	14.2	20.0
2050-68-2	15-DiCB		559	pg/L	15.3	20.0
38444-73-4	19-TrCB		489	pg/L	6.64	20.0
38444-90-5	37-TrCB		499	pg/L	12.2	20.0
15968-05-5	54-TeCB		957	pg/L	2.48	20.0
32598-13-3	77-TeCB		927	pg/L	9.12	20.0
70362-50-4	81-TeCB		1030	pg/L	8.74	20.0
56558-16-8	104-PeCB		1010	pg/L	1.54	20.0
32598-14-4	105-PeCB		1130	pg/L	9.62	20.0
74472-37-0	114-PeCB		1020	pg/L	9.20	20.0
31508-00-6	118-PeCB		1000	pg/L	8.90	20.0
65510-44-3	123-PeCB		993	pg/L	8.78	20.0
57465-28-8	126-PeCB		1110	pg/L	10.7	20.0
33979-03-2	155-HxCB		1150	pg/L	1.16	20.0
38380-08-4	156-HxCB		2260	pg/L	7.66	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1140	pg/L	5.82	20.0
32774-16-6	169-HxCB		1080	pg/L	6.60	20.0
74487-85-7	188-HpCB		1000	pg/L	2.02	20.0
39635-31-9	189-HpCB		1040	pg/L	2.86	20.0
2136-99-4	202-OcCB		1510	pg/L	1.64	20.0
74472-53-0	205-OcCB		1410	pg/L	2.98	20.0
40186-72-9	206-NoCB		1390	pg/L	2.12	20.0
52663-77-1	208-NoCB		1520	pg/L	1.52	20.0
2051-24-3	209-DeCB		1580	pg/L	1.18	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		947	2000	pg/L	47.4	(15%-145%)
13C-3-MoCB		1160	2000	pg/L	57.8	(15%-145%)
13C-4-DiCB		1330	2000	pg/L	66.6	(15%-145%)
13C-15-DiCB		2090	2000	pg/L	104	(15%-145%)
13C-19-TrCB		1820	2000	pg/L	91.0	(15%-145%)
13C-37-TrCB		2050	2000	pg/L	103	(15%-145%)
13C-54-TeCB		1280	2000	pg/L	64.0	(15%-145%)
13C-77-TeCB		2400	2000	pg/L	120	(40%-145%)
13C-81-TeCB		2390	2000	pg/L	119	(40%-145%)
13C-104-PeCB		1630	2000	pg/L	81.3	(40%-145%)
13C-105-PeCB		1740	2000	pg/L	86.9	(40%-145%)
13C-114-PeCB		1700	2000	pg/L	84.9	(40%-145%)
13C-118-PeCB		1690	2000	pg/L	84.3	(40%-145%)

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 1709F81	Client: HALL001	Project: HALL00117
Lab Sample ID: 12019814		Matrix: WATER
Client Sample: QC for batch 35954		
Client ID: LCS for batch 35954		Prep Basis: As Received
Batch ID: 36029	Method: EPA Method 1668C	
Run Date: 10/23/2017 09:59	Analyst: MLS	Instrument: HRP875
Data File: d23oct17a-2		Dilution: 1
Prep Batch: 35954	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 17-OCT-17	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-123-PeCB			1780	2000	pg/L	89.1 (40%-145%)
13C-126-PeCB			1750	2000	pg/L	87.7 (40%-145%)
13C-155-HxCB			1660	2000	pg/L	82.9 (40%-145%)
13C-156-HxCB		C	3310	4000	pg/L	82.8 (40%-145%)
13C-157-HxCB		C156L				
13C-167-HxCB			1720	2000	pg/L	86.0 (40%-145%)
13C-169-HxCB			1810	2000	pg/L	90.6 (40%-145%)
13C-188-HpCB			1580	2000	pg/L	78.8 (40%-145%)
13C-189-HpCB			1570	2000	pg/L	78.5 (40%-145%)
13C-202-OcCB			1600	2000	pg/L	79.8 (40%-145%)
13C-205-OcCB			2000	2000	pg/L	100 (40%-145%)
13C-206-NoCB			2290	2000	pg/L	115 (40%-145%)
13C-208-NoCB			1920	2000	pg/L	96.2 (40%-145%)
13C-209-DeCB			2260	2000	pg/L	113 (40%-145%)
13C-28-TrCB			1200	2000	pg/L	59.9 (15%-145%)
13C-111-PeCB			1900	2000	pg/L	94.9 (40%-145%)
13C-178-HpCB			2000	2000	pg/L	100 (40%-145%)

**Comments:**

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 12019815		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35954		
<b>Client ID:</b> LCSD for batch 35954		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/23/2017 11:08	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP875
<b>Data File:</b> d23oct17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		445	pg/L	4.36	20.0
2051-62-9	3-MoCB		517	pg/L	4.92	20.0
13029-08-8	4-DiCB		471	pg/L	12.5	20.0
2050-68-2	15-DiCB		548	pg/L	15.0	20.0
38444-73-4	19-TrCB		486	pg/L	6.98	20.0
38444-90-5	37-TrCB		496	pg/L	14.4	20.0
15968-05-5	54-TeCB		956	pg/L	2.84	20.0
32598-13-3	77-TeCB		908	pg/L	6.82	20.0
70362-50-4	81-TeCB		1010	pg/L	6.24	20.0
56558-16-8	104-PeCB		987	pg/L	1.24	20.0
32598-14-4	105-PeCB		1100	pg/L	8.90	20.0
74472-37-0	114-PeCB		998	pg/L	8.62	20.0
31508-00-6	118-PeCB		964	pg/L	7.94	20.0
65510-44-3	123-PeCB		970	pg/L	8.44	20.0
57465-28-8	126-PeCB		1070	pg/L	9.98	20.0
33979-03-2	155-HxCB		1090	pg/L	1.08	20.0
38380-08-4	156-HxCB		2180	pg/L	6.16	40.0
69782-90-7	157-HxCB	C				
		C156				
52663-72-6	167-HxCB		1120	pg/L	4.50	20.0
32774-16-6	169-HxCB		1060	pg/L	5.22	20.0
74487-85-7	188-HpCB		982	pg/L	1.50	20.0
39635-31-9	189-HpCB		1030	pg/L	2.92	20.0
2136-99-4	202-OcCB		1480	pg/L	2.04	20.0
74472-53-0	205-OcCB		1380	pg/L	2.14	20.0
40186-72-9	206-NoCB		1360	pg/L	3.42	20.0
52663-77-1	208-NoCB		1510	pg/L	2.44	20.0
2051-24-3	209-DeCB		1550	pg/L	1.22	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		922	2000	pg/L	46.1	(15%-145%)
13C-3-MoCB		1060	2000	pg/L	53.2	(15%-145%)
13C-4-DiCB		1290	2000	pg/L	64.3	(15%-145%)
13C-15-DiCB		1950	2000	pg/L	97.5	(15%-145%)
13C-19-TrCB		1770	2000	pg/L	88.7	(15%-145%)
13C-37-TrCB		1980	2000	pg/L	99.2	(15%-145%)
13C-54-TeCB		1340	2000	pg/L	67.1	(15%-145%)
13C-77-TeCB		2400	2000	pg/L	120	(40%-145%)
13C-81-TeCB		2390	2000	pg/L	119	(40%-145%)
13C-104-PeCB		1550	2000	pg/L	77.7	(40%-145%)
13C-105-PeCB		1730	2000	pg/L	86.4	(40%-145%)
13C-114-PeCB		1670	2000	pg/L	83.7	(40%-145%)
13C-118-PeCB		1690	2000	pg/L	84.5	(40%-145%)

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 2 of 2

<b>SDG Number:</b> 1709F81	<b>Client:</b> HALL001	<b>Project:</b> HALL00117
<b>Lab Sample ID:</b> 12019815		<b>Matrix:</b> WATER
<b>Client Sample:</b> QC for batch 35954		
<b>Client ID:</b> LCSD for batch 35954		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36029	<b>Method:</b> EPA Method 1668C	
<b>Run Date:</b> 10/23/2017 11:08	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP875
<b>Data File:</b> d23oct17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 35954	<b>Prep Method:</b> SW846 3520C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 17-OCT-17	<b>Prep Aliquot:</b> 1000 mL	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-123-PeCB			1730	2000	pg/L	86.7 (40%-145%)
13C-126-PeCB			1790	2000	pg/L	89.4 (40%-145%)
13C-155-HxCB			1560	2000	pg/L	78.0 (40%-145%)
13C-156-HxCB		C	3150	4000	pg/L	78.8 (40%-145%)
13C-157-HxCB		C156L				
13C-167-HxCB			1620	2000	pg/L	81.1 (40%-145%)
13C-169-HxCB			1760	2000	pg/L	88.1 (40%-145%)
13C-188-HpCB			1470	2000	pg/L	73.5 (40%-145%)
13C-189-HpCB			1490	2000	pg/L	74.6 (40%-145%)
13C-202-OcCB			1480	2000	pg/L	74.0 (40%-145%)
13C-205-OcCB			1960	2000	pg/L	97.9 (40%-145%)
13C-206-NoCB			2220	2000	pg/L	111 (40%-145%)
13C-208-NoCB			1830	2000	pg/L	91.6 (40%-145%)
13C-209-DcCB			2200	2000	pg/L	110 (40%-145%)
13C-28-TrCB			1270	2000	pg/L	63.3 (15%-145%)
13C-111-PeCB			1840	2000	pg/L	92.0 (40%-145%)
13C-178-HpCB			1910	2000	pg/L	95.7 (40%-145%)

**Comments:**

C Congener has coeluters. When Cxxx, refer to congener number xxx for data



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1709F81  
 Pace Project No.: 30231771

**Sample:** 1709F81-001L Rio Grande-South- **Lab ID:** 30231771001 **Collected:** 09/28/17 09:00 **Received:** 10/03/17 10:10 **Matrix:** Water

**PWS:** **Site ID:** **Sample Type:**

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	22.8 ± 5.05 (1.97) C:NA T:NA	pCi/L	10/05/17 19:17	12587-46-1	
Adjusted Gross Alpha	EPA 900.0	20.9 ± NA (NA) C:NA T:NA	pCi/L	10/24/17 12:57		
Total Uranium	ASTM D5174-97	2.87 ± 0.119 (0.193) C:NA T:NA	ug/L	10/23/17 14:05	7440-61-1	

**Sample:** 1709F81-003L Rio Grande-North- **Lab ID:** 30231771002 **Collected:** 09/27/17 12:00 **Received:** 10/03/17 10:10 **Matrix:** Water

**PWS:** **Site ID:** **Sample Type:**

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	4.27 ± 1.42 (1.48) C:NA T:NA	pCi/L	10/05/17 19:17	12587-46-1	
Adjusted Gross Alpha	EPA 900.0	2.91 ± NA (NA) C:NA T:NA	pCi/L	10/24/17 12:57		
Total Uranium	ASTM D5174-97	2.01 ± 0.084 (0.193) C:NA T:NA	ug/L	10/23/17 14:17	7440-61-1	

### REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC  
1638 Roseytown Road - Suites 2,3,4  
Greensburg, PA 15601  
(724)850-5600

### QUALITY CONTROL - RADIOCHEMISTRY

Project: 1709F81  
Pace Project No.: 30231771

---

QC Batch: 274175                      Analysis Method: EPA 900.0  
QC Batch Method: EPA 900.0                      Analysis Description: 900.0 Gross Alpha/Beta  
Associated Lab Samples: 30231771001, 30231771002

---

METHOD BLANK: 1348495                      Matrix: Water  
Associated Lab Samples: 30231771001, 30231771002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.027 ± 0.617 (1.66) C:NA T:NA	pCi/L	10/06/17 09:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 1709F81  
Pace Project No.: 30231771

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.  
ND - Not Detected at or above adjusted reporting limit.  
TNTC - Too Numerous To Count  
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.  
MDL - Adjusted Method Detection Limit.  
PQL - Practical Quantitation Limit.  
RL - Reporting Limit.  
S - Surrogate  
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.  
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.  
LCS(D) - Laboratory Control Sample (Duplicate)  
MS(D) - Matrix Spike (Duplicate)  
DUP - Sample Duplicate  
RPD - Relative Percent Difference  
NC - Not Calculable.  
SG - Silica Gel - Clean-Up  
U - Indicates the compound was analyzed for, but not detected.  
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.  
Act - Activity  
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).  
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)  
(MDC) - Minimum Detectable Concentration  
Trac - Tracer Recovery (%)  
Carr - Carrier Recovery (%)  
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.  
TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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Date: 10/24/2017 12:59 PM

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-34213</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 1664B</b>								
Client ID: <b>PBW</b>	Batch ID: <b>34213</b>	RunNo: <b>46101</b>								
Prep Date: <b>10/4/2017</b>	Analysis Date: <b>10/4/2017</b>	SeqNo: <b>1466493</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10.0								
Silica Gel Treated N-Hexane Extrac	ND	10.0								

Sample ID <b>LCS-34213</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 1664B</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>34213</b>	RunNo: <b>46101</b>								
Prep Date: <b>10/4/2017</b>	Analysis Date: <b>10/4/2017</b>	SeqNo: <b>1466494</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	33.4	10.0	40.00	0	83.5	78	114			
Silica Gel Treated N-Hexane Extrac	13.4	10.0	20.00	0	67.0	64	132			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID	<b>MB-34381</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 200.7: Metals</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>34381</b>	RunNo:	<b>46397</b>					
Prep Date:	<b>10/12/2017</b>	Analysis Date:	<b>10/16/2017</b>	SeqNo:	<b>1478148</b>	Units:	<b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID	<b>LLCS-34381</b>	SampType:	<b>LCSLL</b>	TestCode:	<b>EPA Method 200.7: Metals</b>					
Client ID:	<b>BatchQC</b>	Batch ID:	<b>34381</b>	RunNo:	<b>46397</b>					
Prep Date:	<b>10/12/2017</b>	Analysis Date:	<b>10/16/2017</b>	SeqNo:	<b>1478149</b>	Units:	<b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.55	1.0	0.5000	0	109	50	150			J
Magnesium	0.55	1.0	0.5000	0	111	50	150			J

Sample ID	<b>LCS-34381</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 200.7: Metals</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>34381</b>	RunNo:	<b>46397</b>					
Prep Date:	<b>10/12/2017</b>	Analysis Date:	<b>10/16/2017</b>	SeqNo:	<b>1478150</b>	Units:	<b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.2	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA  
**Project:** CMC

Sample ID	1709F81-001HLLMS		SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	Rio Grande-South-2		Batch ID:	C46196		RunNo:	46196				
Prep Date:			Analysis Date:	10/6/2017		SeqNo:	1470679	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Copper	0.023	0.0010	0.02500	0.0009846	89.4	70	130				
Lead	0.013	0.00050	0.01250	0.0004747	97.5	70	130				

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	C46196		RunNo:	46196				
Prep Date:			Analysis Date:	10/6/2017		SeqNo:	1470730	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Copper	0.024	0.0010	0.02500	0	94.1	85	115				
Lead	0.012	0.00050	0.01250	0	95.8	85	115				

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID:	C46196		RunNo:	46196				
Prep Date:			Analysis Date:	10/6/2017		SeqNo:	1470734	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Copper	0.00094	0.0010	0.001000	0	93.9	50	150			J	
Lead	0.00048	0.00050	0.0005000	0	96.7	50	150			J	

Sample ID	MB		SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW		Batch ID:	C46196		RunNo:	46196				
Prep Date:			Analysis Date:	10/6/2017		SeqNo:	1470738	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Copper	ND	0.0010									
Lead	ND	0.00050									

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R46023</b>		RunNo: <b>46023</b>							
Prep Date:	Analysis Date: <b>9/29/2017</b>		SeqNo: <b>1463151</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID <b>LCS</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R46023</b>		RunNo: <b>46023</b>							
Prep Date:	Analysis Date: <b>9/29/2017</b>		SeqNo: <b>1463152</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.3	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-34138</b>	SampType: <b>MBLK</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>PBW</b>	Batch ID: <b>34138</b>		RunNo: <b>46131</b>							
Prep Date: <b>9/29/2017</b>	Analysis Date: <b>10/4/2017</b>		SeqNo: <b>1467584</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID <b>MB--34138</b>	SampType: <b>MBLK</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>PBW</b>	Batch ID: <b>34138</b>		RunNo: <b>46131</b>							
Prep Date: <b>9/29/2017</b>	Analysis Date: <b>10/4/2017</b>		SeqNo: <b>1467585</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID <b>LCS-34138</b>	SampType: <b>LCS</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>34138</b>		RunNo: <b>46131</b>							
Prep Date: <b>9/29/2017</b>	Analysis Date: <b>10/4/2017</b>		SeqNo: <b>1467586</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	150	2.0	198.0	0	75.4	60.3	136			

Sample ID <b>LCSD-34138</b>	SampType: <b>LCSD</b>		TestCode: <b>SM5210B: BOD</b>							
Client ID: <b>LCSS02</b>	Batch ID: <b>34138</b>		RunNo: <b>46131</b>							
Prep Date: <b>9/29/2017</b>	Analysis Date: <b>10/4/2017</b>		SeqNo: <b>1467587</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	180	2.0	198.0	0	90.8	60.3	136	18.5	39.3	

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

Client: AMAFCA

Project: CMC

Sample ID	<b>MB-34130</b>	SampType:	<b>MBLK</b>	TestCode:	<b>SM 9223B Fecal Indicator: E. coli MPN</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>34130</b>	RunNo:	<b>46014</b>					
Prep Date:	<b>9/28/2017</b>	Analysis Date:	<b>9/29/2017</b>	SeqNo:	<b>1462872</b>	Units:	<b>MPN/100mL</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

## Qualifiers:

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB</b>	SampType: <b>MBLK</b>		TestCode: <b>SM 4500 NH3: Ammonia</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R46385</b>		RunNo: <b>46385</b>							
Prep Date:	Analysis Date: <b>10/16/2017</b>		SeqNo: <b>1477737</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID <b>LCS</b>	SampType: <b>LCS</b>		TestCode: <b>SM 4500 NH3: Ammonia</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R46385</b>		RunNo: <b>46385</b>							
Prep Date:	Analysis Date: <b>10/16/2017</b>		SeqNo: <b>1477738</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.8	1.0	10.00	0	98.0	80	120			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-34388</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>PBW</b>	Batch ID: <b>34388</b>		RunNo: <b>46373</b>							
Prep Date: <b>10/12/2017</b>	Analysis Date: <b>10/13/2017</b>		SeqNo: <b>1477407</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID <b>LCS-34388</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>34388</b>		RunNo: <b>46373</b>							
Prep Date: <b>10/12/2017</b>	Analysis Date: <b>10/13/2017</b>		SeqNo: <b>1477408</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	100	90	110			

Sample ID <b>1709F81-003FMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>Rio Grande-North-2</b>	Batch ID: <b>34388</b>		RunNo: <b>46373</b>							
Prep Date: <b>10/12/2017</b>	Analysis Date: <b>10/13/2017</b>		SeqNo: <b>1477413</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	1.5	0.050	1.250	0.2770	95.1	90	110			D

Sample ID <b>1709F81-003FMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 365.1: Total Phosphorous</b>							
Client ID: <b>Rio Grande-North-2</b>	Batch ID: <b>34388</b>		RunNo: <b>46373</b>							
Prep Date: <b>10/12/2017</b>	Analysis Date: <b>10/13/2017</b>		SeqNo: <b>1477414</b>	Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	1.5	0.050	1.250	0.2770	96.6	90	110	1.32	20	D

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-34208</b>	SampType: <b>MBLK</b>	TestCode: <b>SM2540C MOD: Total Dissolved Solids</b>								
Client ID: <b>PBW</b>	Batch ID: <b>34208</b>	RunNo: <b>46103</b>								
Prep Date: <b>10/3/2017</b>	Analysis Date: <b>10/4/2017</b>	SeqNo: <b>1466592</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID <b>LCS-34208</b>	SampType: <b>LCS</b>	TestCode: <b>SM2540C MOD: Total Dissolved Solids</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>34208</b>	RunNo: <b>46103</b>								
Prep Date: <b>10/3/2017</b>	Analysis Date: <b>10/4/2017</b>	SeqNo: <b>1466593</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-34412</b>	SampType: <b>MBLK</b>	TestCode: <b>SM 4500 Norg C: TKN</b>								
Client ID: <b>PBW</b>	Batch ID: <b>34412</b>	RunNo: <b>46404</b>								
Prep Date: <b>10/14/2017</b>	Analysis Date: <b>10/17/2017</b>	SeqNo: <b>1478457</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID <b>LCS-34412</b>	SampType: <b>LCS</b>	TestCode: <b>SM 4500 Norg C: TKN</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>34412</b>	RunNo: <b>46404</b>								
Prep Date: <b>10/14/2017</b>	Analysis Date: <b>10/17/2017</b>	SeqNo: <b>1478458</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	102	80	120			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1709F81

31-Oct-17

**Client:** AMAFCA

**Project:** CMC

Sample ID <b>MB-34153</b>	SampType: <b>MBLK</b>		TestCode: <b>SM 2540D: TSS</b>							
Client ID: <b>PBW</b>	Batch ID: <b>34153</b>		RunNo: <b>46033</b>							
Prep Date: <b>9/29/2017</b>	Analysis Date: <b>10/2/2017</b>		SeqNo: <b>1463367</b>				Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID <b>LCS-34153</b>	SampType: <b>LCS</b>		TestCode: <b>SM 2540D: TSS</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>34153</b>		RunNo: <b>46033</b>							
Prep Date: <b>9/29/2017</b>	Analysis Date: <b>10/2/2017</b>		SeqNo: <b>1463368</b>				Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	96	4.0	91.10	0	105	84.63	120.75			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

**Sample Log-In Check List**

Client Name: AMAFCA

Work Order Number: 1709F81

RcptNo: 1

Received By: Jackie Bolte

9/28/2017 1:40:00 PM

*Jackie Bolte*

Completed By: Anne Thorne

9/28/2017 2:31:10 PM

*Anne Thorne*

Reviewed By: *TO 09/29/17*

**Chain of Custody**

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Client

**Log In**

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA
- 10. VOA vials have zero headspace? Yes  No  No VOA Vials
- 11. Were any sample containers received broken? Yes  No
- 12. Does paperwork match bottle labels? Yes  No   
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
(If no, notify customer for authorization.)

# of preserved bottles checked for pH: 14  
 (<2 or >12 unless noted)  
 Adjusted? \_\_\_\_\_  
 Checked by: AT 09/29/17

**Special Handling (if applicable)**

- 16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

17. Additional remarks:

**18. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.8	Good	Not Present			

**Collaborative Monitoring Cooperative - Analyses List  
Attach to Chain of Custody**

Analyte (bold indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
Hardness (Ca + Mg)	NA	Total	200.7	2.4
<b>Lead</b>	7439-92-1	Dissolved	200.8	0.09
<b>Copper</b>	7440-50-8	Dissolved	200.8	1.06
Ammonia + organic nitrogen	7664-41-7	Total	350.1	31.32
Total Kjeldahl Nitrogen	17778-88-0	Total	351.2	58.78
<b>Nitrate + Nitrite</b>	14797-55-8	Total	353.2	10.17
<b>Polychlorinated biphenyls (PCBs)</b>	<del>1336-36-3</del>	Total	1668	0.014
Tetrahydrofuran (THF)	109-99-9	Total	8260C	7.9
bis(2-Ethylhexyl)phthalate	117-81-7	Total	8270D	0.2
Dibenzofuran	132-64-9	Total	8270D	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	Total	8270D	0.2
Benzo(b)fluoranthene	205-99-2	Total	8270D	0.1
Benzo(k)fluoranthene	207-08-9	Total	8270D	0.1
Chrysene	218-01-9	Total	8270D	0.2
Benzo(a)pyrene	50-32-8	Total	8270D	0.3
Dibenzo(a,h)anthracene	53-70-3	Total	8270D	0.3
Benzo(a)anthracene	56-55-3	Total	8270D	0.2
Dieldrin	60-57-1	Total	8270D	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
Chemical Oxygen Demand	E1641638 <sup>2</sup>	Total	HACH	5100
<b>Gross alpha (adjusted)</b>	NA	Total	Method 900	0.1 pCi/L
Total Dissolved Solids	E1642222 <sup>2</sup>	Total	SM 2540C	60.4
Total Suspended Solids	NA	Total	SM 2540D	3450
Biological Oxygen Demand	N/A	Total	Standard Methods	930
Oil and Grease		Total	1664A	5000
Ecoli - num			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

S:\Projects\NM15.0156\_SSCAFCA\_Stormwater\Docs\Stormwater Sampling\2016\_Parameter list\_CMC.doc  
11/2/2016



**Appendix F - Minimum Quantification Levels (MQL's)**

The following Minimum Quantification Levels (MQL's) are to be used for reporting pollutant data for NPDES permit applications and/or compliance reporting.

POLLUTANTS	MQL µg/l	POLLUTANTS	MQL µg/l
<b>METALS, RADIOACTIVITY, CYANIDE and CHLORINE</b>			
Aluminum	2.5	Molybdenum	10
Antimony	60	Nickel	0.5
Arsenic	0.5	Selenium	5
Barium	100	Silver	0.5
Beryllium	0.5	Thallium	0.5
Boron	100	Uranium	0.1
Cadmium	1	Vanadium	50
Chromium	10	Zinc	20
Cobalt	50	Cyanide	10
Copper	0.5	Cyanide, weak acid dissociable	10
Lead	0.5	Total Residual Chlorine	33
Mercury (*)	0.0005 0.005		
<b>DIOXIN</b>			
2,3,7,8-TCDD	0.00001		
<b>VOLATILE COMPOUNDS</b>			
Acrolein	50	1,3-Dichloropropylene	10
Acrylonitrile	20	Ethylbenzene	10
Benzene	10	Methyl Bromide	50
Bromoform	10	Methylene Chloride	20
Carbon Tetrachloride	2	1,1,2,2-Tetrachloroethane	10
Chlorobenzene	10	Tetrachloroethylene	10
Chlorodibromomethane	10	Toluene	10
Chloroform	50	1,2-trans-Dichloroethylene	10
Dichlorobromomethane	10	1,1,2-Trichloroethane	10
1,2-Dichloroethane	10	Trichloroethylene	10
1,1-Dichloroethylene	10	Vinyl Chloride	10
1,2-Dichloropropane	10		
<b>ACID COMPOUNDS</b>			
2-Chlorophenol	10	2,4-Dinitrophenol	50
2,4-Dichlorophenol	10	Pentachlorophenol	5
2,4-Dimethylphenol	10	Phenol	10
4,6-Dinitro-o-Cresol	50	2,4,6-Trichlorophenol	10



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 02, 2017

Patrick Chavez  
AMAFCA  
2600 Prospect Ave NE  
Albuquerque, NM 87107  
TEL: (505) 884-2215  
FAX

Pre-storm Rio Grnade  
South - Isleta Dam  
location

RE: CMC

OrderNo.: 1709F32

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/27/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1709F32

Date Reported: 10/2/2017

CLIENT: AMAFCA

Client Sample ID: **Isleta Dam**

Project: CMC

Collection Date: 9/27/2017 12:00:00 PM

Lab ID: 1709F32-001

Matrix: AQUEOUS

Received Date: 9/27/2017 3:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>SM 9223B FECAL INDICATOR: E. COLI MPN</b>							Analyst: <b>SMS</b>
E. Coli	2359	10.00		MPN/100mL	10	9/28/2017 6:51:00 PM	34113

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1709F32

RcptNo: 1

Received By: Erin Melendrez 9/27/2017 3:00:00 PM

Completed By: Sophia Campuzano 9/27/2017 3:27:13 PM

Reviewed By: ENM 9/27/17@1535

### Chain of Custody

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Client

### Log In

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA   
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA
- 10. VOA vials have zero headspace? Yes  No  No VOA Vials
- 11. Were any sample containers received broken? Yes  No
- 12. Does paperwork match bottle labels? Yes  No   
 (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted) Adjusted? _____ Checked by: _____
--

### Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.1	Good	Not Present			

# Chain-of-Custody Record

Client: AMFCA - CMC

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

Standard  Level 4 (Full Validation)

Accreditation

NELAP  Other

EDD (Type)

Project Manager:

Patrick Chavez

Sampler:

On Ice:  Yes  No

Sample Temperature: 7.1

Date Time Matrix Sample Request ID

9/27 12:00 AM ENM9/27/17 AQ I-3/87x Pam

Container Type and #

Preservative Type

HEAL No: 11091E32

-001

Date: 9/27 Time: 3:00

Relinquished by: PSCM

Date: 9/27/17 Time: 1500

Remarks:

Received by: [Signature]

Date: 9/27/17 Time: 1500

Received by: [Signature]

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

Analysis Request	Remarks
BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH 8015B (GRO / DRO / MRO)	
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	<u>X</u> <u>Enumeration</u>
Air Bubbles (Y or N)	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 02, 2017

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

Pre-storm results for multiple locations

RE: E Coli Study

OrderNo.: 1709F30

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/27/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 1709F30

Date Reported: 10/2/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: E Coli Study

Lab Order: 1709F30

Lab ID: 1709F30-001
Client Sample ID: ABQ-RD-EAST

Collection Date: 9/27/2017 1:20:00 PM
Matrix: AQUEOUS

Table with 8 columns: Analyses, Result, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: SM 9223B FECAL INDICATOR: E. COLI MPN, Analyst: SMS. Row 2: E. Coli, 1565, 10.00, MPN/100mL, 10, 9/28/2017 6:51:00 PM, 34113.

Lab ID: 1709F30-002
Client Sample ID: ABQ-RC-I25

Collection Date: 9/27/2017 1:30:00 PM
Matrix: AQUEOUS

Table with 8 columns: Analyses, Result, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: SM 9223B FECAL INDICATOR: E. COLI MPN, Analyst: SMS. Row 2: E. Coli, 1723, 10.00, MPN/100mL, 10, 9/28/2017 6:51:00 PM, 34113.

Lab ID: 1709F30-003
Client Sample ID: ABQ-DD-WEST

Collection Date: 9/27/2017 12:50:00 PM
Matrix: AQUEOUS

Table with 8 columns: Analyses, Result, PQL, Qual, Units, DF, Date Analyzed, Batch ID. Row 1: SM 9223B FECAL INDICATOR: E. COLI MPN, Analyst: SMS. Row 2: E. Coli, 82.3, 1.000, MPN/100mL, 1, 9/28/2017 6:51:00 PM, 34113.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Table with 2 columns: Qualifiers and descriptions. Includes codes like \*, D, H, ND, PQL, S, B, E, J, P, RL, W and their corresponding definitions.



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1709F30

RcptNo: 1

Received By: Erin Melendrez

9/27/2017 3:00:00 PM

Completed By: Sophia Campuzano

9/27/2017 3:22:59 PM

Reviewed By: ENM

9/27/17 @ 535

### Chain of Custody

1. Custody seals intact on sample bottles? Yes  No  Not Present
2. Is Chain of Custody complete? Yes  No  Not Present
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes  No  NA
5. Were all samples received at a temperature of >0° C to 6.0° C Yes  No  NA
- Samples were collected the same day and chilled.**
6. Sample(s) in proper container(s)? Yes  No
7. Sufficient sample volume for indicated test(s)? Yes  No
8. Are samples (except VOA and ONG) properly preserved? Yes  No
9. Was preservative added to bottles? Yes  No  NA
10. VOA vials have zero headspace? Yes  No  No VOA Vials
11. Were any sample containers received broken? Yes  No
12. Does paperwork match bottle labels?  
 (Note discrepancies on chain of custody) Yes  No
13. Are matrices correctly identified on Chain of Custody? Yes  No
14. Is it clear what analyses were requested? Yes  No
15. Were all holding times able to be met?  
 (If no, notify customer for authorization.) Yes  No

# of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.1	Good	Not Present			



**ATTACHMENT 2**  
**FY 2018 WET SEASON COMPLETED DATA VERIFICATION AND**  
**VALIDATION FORMS**

**Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet**

**Study Name:** Compliance Monitoring Cooperative (CMC)  
**Year:** FY 2018 (July 2017 – Wet Season Sample)  
**Project Coordinator:** For Data Review and Reporting – SJG, BHI  
**V&V Reviewer:** SJG  
**Data covered by this worksheet:** Rio Grande North – 7/27/17 and 7/28/17  
**Version of Verification/Validation Procedures:** QAPP – SOP #2 (2/2015)

**Step 1: Verify Field Data**

A. Are all Field Data forms present and complete?  Yes  No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

**Total number of occurrences: 0**

B. Are station name and ID, and sampling date and time on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

**Total number of occurrences: 0**

C. Are field data on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

**Total number of occurrences: 0**

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

**Step 1 Completed** *Initials: SJG Date: 10/26/17*

**Step 2: Verify Data Deliverables**

A. Have all data in question been delivered?  Yes  No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received

Total number of occurrences: 0

**B. Do all of the analytical suites have the correct number and type of analytes.**  Yes  No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

\*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”). Also, three parameters are listed in the Lab Report Analytical Notes – Tetrahydrofuran, Benzidine, and Dieldrin – all were not detected. All three are not listed in the reportable compounds tables.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

**Step 2 Completed** *Initials: SJG Date: 10/26/17*

**Step 3: Verify Flow Data**

\*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?

**Total number of occurrences: 0**

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?

**Total number of occurrences: 0**

**Not Applicable**

**Step 3 Completed** *Initials: SJG Date: 10/26/17*

**Step 4: Verify Analytical Results for Missing Information or Questionable Results**

Were any results with missing/questionable information identified?  Yes  No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
<u>Rio Grande North</u>	<u>7/27/17</u>	<u>Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".</u>	<u>Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.</u>
<u>Rio Grande North</u>	<u>7/27/17</u>	<u>Tetrahydrofuran not found along numerical results.</u>	<u>Analytical notes state that Tetrahydrofuran was not included in the list of reportable compounds. Compound was not detected.</u>
<u>Rio Grande North</u>	<u>7/27/17</u>	<u>Benzidine and Dieldrin not found along numerical results.</u>	<u>Analytical notes state that Benzidine and Dieldrin were not included in the list of reportable compounds. Compounds were not detected.</u>

\*Note – HEAL Lab report order numbers – 1707E46 and 1707E07

**Total number of occurrences: 3**

**Step 4 Completed** *Initials: SJG Date: 10/26/17*

**Step 5: Validate Blanks Results**

Were any analytes of concern detected in blank samples?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank ]	[Sample ]	Validation Code/Flag Applied	Code/Flag verified in database? *

\*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

**Total number of occurrences: 0**

**Step 5 Completed** *Initials: SJJ Date: 10/26/17*

-----  
**Step 6: Validate Holding Times Violations**

Were any samples submitted that did not meet specified holding times?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

\*See validation procedures to determine which associated data need to be flagged.

\*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.

**Total number of occurrences: 0**

**Step 6 Completed** *Initials: SJJ Date: 10/26/17*

-----  
**Step 7: Validate Replicate/Duplicate Results (if applicable)**

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

\*See validation procedures to determine which associated data need to be flagged.

**Total number of occurrences: 0**

**Step 7 Completed** *Initials: SJG Date: 10/26/17*

\*\*\*\*\*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



10/26/17

\_\_\_\_\_  
Data Verifier/Validator Signature

\_\_\_\_\_  
Date

**COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS**

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

## Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

**Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet**

**Study Name:** Compliance Monitoring Cooperative (CMC)

**Year:** FY 2018 (July 2017 – Wet Season Sample)

**Project Coordinator:** For Data Review and Reporting – SJG, BHI

**V&V Reviewer:** SJG

**Data covered by this worksheet:** Rio Grande South – 7/28/17

**Version of Verification/Validation Procedures:** QAPP – SOP #2 (2/2015)

**Step 1: Verify Field Data**

A. Are all Field Data forms present and complete?  Yes  No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

**Total number of occurrences:** 0

B. Are station name and ID, and sampling date and time on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

**Total number of occurrences:** 0

C. Are field data on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

**Total number of occurrences:** 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

**Step 1 Completed** *Initials: SJK* *Date: 10/26/17*

**Step 2: Verify Data Deliverables**

A. Have all data in question been delivered?  Yes  No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received

Total number of occurrences: 0

**B. Do all of the analytical suites have the correct number and type of analytes.**  Yes  No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

\*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”). Also, three parameters are listed in the Lab Report Analytical Notes – Tetrahydrofuran, Benzidine, and Dieldrin – all were not detected. All three are not listed in the reportable compounds tables..

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

**Step 2 Completed** *Initials: SJG Date: 10/26/17*

**Step 3: Verify Flow Data**

\*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?

**Total number of occurrences: 0**

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?

**Total number of occurrences: 0**

**Not Applicable**  
 **Step 3 Completed** *Initials: SJG Date: 10/26/17*

**Step 4: Verify Analytical Results for Missing Information or Questionable Results**

Were any results with missing/questionable information identified?  Yes  No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
<u>Rio Grande South</u>	<u>7/28/17</u>	<u>Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".</u>	<u>Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.</u>
<u>Rio Grande South</u>	<u>7/28/17</u>	<u>Hexavalent Chromium and COD for Rio Grande South incorrectly labeled in lab report as Rio Grande North</u>	<u>Confirmed lab results and monitoring location with HEAL. BHI added note to the lab report.</u>
<u>Rio Grande South</u>	<u>7/28/17</u>	<u>Tetrahydrofuran not found along numerical results.</u>	<u>Analytical notes state that Tetrahydrofuran was not included in the list of reportable compounds. Compound was not detected.</u>
<u>Rio Grande South</u>	<u>7/28/17</u>	<u>Benzidine and Dieldrin not found along numerical results.</u>	<u>Analytical notes state that Benzidine and Dieldrin were not included in the list of reportable compounds. Compounds were not detected.</u>

\*Note – HEAL Lab report order number – 1707E46

**Total number of occurrences: 1**

**Step 4 Completed** *Initials: SJG Date: 10/26/17*

**Step 5: Validate Blanks Results**

Were any analytes of concern detected in blank samples?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank ]	[Sample ]	Validation Code/Flag Applied	Code/Flag verified in database? *

\*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

**Total number of occurrences: 0**

**Step 5 Completed** Initials: SJG Date: 10/26/17

**Step 6: Validate Holding Times Violations**

Were any samples submitted that did not meet specified holding times?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

\*See validation procedures to determine which associated data need to be flagged.

\*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.

**Total number of occurrences: 0**

**Step 6 Completed** Initials: SJG Date: 10/26/17

**Step 7: Validate Replicate/Duplicate Results (if applicable)**

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

\*See RGN Form.

**Total number of occurrences: 0**

**Step 7 Completed** *Initials: SJG Date: 10/26/17*

\*\*\*\*\*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



10/26/17

\_\_\_\_\_  
 Data Verifier/Validator Signature

\_\_\_\_\_  
 Date

**COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS**

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

## Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

**Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet**

**Study Name:** Compliance Monitoring Cooperative (CMC)

**Year:** FY 2018 (Sept 2017 – Wet Season Sample)

**Project Coordinator:** For Data Review and Reporting – SJG, BHI

**V&V Reviewer:** SJG

**Data covered by this worksheet:** Rio Grande North – 9/27/17 and 9/28/17

**Version of Verification/Validation Procedures:** QAPP – SOP #2 (2/2015)

**Step 1: Verify Field Data**

A. Are all Field Data forms present and complete?  Yes  No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

**Total number of occurrences:** 0

B. Are station name and ID, and sampling date and time on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

**Total number of occurrences:** 0

C. Are field data on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

**Total number of occurrences:** 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

**Step 1 Completed** *Initials: SJG Date: 12/27/17*

**Step 2: Verify Data Deliverables**

A. Have all data in question been delivered?  Yes  No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

**B. Do all of the analytical suites have the correct number and type of analytes.**  Yes  No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

\*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

**Step 2 Completed** *Initials: SJG Date: 12/27/17*

**Step 3: Verify Flow Data**

\*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?

**Total number of occurrences: 0**

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?

**Total number of occurrences: 0**

**Not Applicable**

**Step 3 Completed** *Initials: SJG Date: 12/27/17*

**Step 4: Verify Analytical Results for Missing Information or Questionable Results**

Were any results with missing/questionable information identified?  Yes  No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North	9/27/17	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.

\*Note – HEAL Lab report order numbers – 1709F09 (E. coli on 9/27/17) and 1709F81(remaining parameters)

**Total number of occurrences: 1**

**Step 4 Completed** Initials: SJG Date: 12/27/17

**Step 5: Validate Blanks Results**

Were any analytes of concern detected in blank samples?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank ]	[Sample ]	Validation Code/Flag Applied	Code/Flag verified in database? *

\*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

**Total number of occurrences: 0**

**Step 5 Completed** Initials: SJG Date: 12/27/17

**Step 6: Validate Holding Times Violations**

Were any samples submitted that did not meet specified holding times?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

\*See validation procedures to determine which associated data need to be flagged.

\*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.

**Total number of occurrences: 0**

**Step 6 Completed** *Initials: SJG Date: 12/27/17*

**Step 7: Validate Replicate/Duplicate Results (if applicable)**

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

\*See validation procedures to determine which associated data need to be flagged.

**Total number of occurrences: 0**

**Step 7 Completed** *Initials: SJG Date: 12/27/17*

\*\*\*\*\*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



12/27/17

\_\_\_\_\_  
Data Verifier/Validator Signature

\_\_\_\_\_  
Date

### **COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS**

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

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## Attachment 1.2 SWQB Validation Codes

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BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

**Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet**

**Study Name:** Compliance Monitoring Cooperative (CMC)

**Year:** FY 2018 (Sept 2017 – Wet Season Sample)

**Project Coordinator:** For Data Review and Reporting – SJG, BHI

**V&V Reviewer:** SJG

**Data covered by this worksheet:** Rio Grande South – 9/28/17

**Version of Verification/Validation Procedures:** QAPP – SOP #2 (2/2015)

**Step 1: Verify Field Data**

A. Are all Field Data forms present and complete?  Yes  No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken

**Total number of occurrences:** 0

B. Are station name and ID, and sampling date and time on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?

**Total number of occurrences:** 0

C. Are field data on forms consistent with database?  Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?

**Total number of occurrences:** 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes  No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?

Total number of occurrences: 0

**Step 1 Completed** *Initials: SJK* *Date: 12/27/17*

**Step 2: Verify Data Deliverables**

A. Have all data in question been delivered?  Yes  No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received

Total number of occurrences: 0

**B. Do all of the analytical suites have the correct number and type of analytes.**  Yes  No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

\*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

**Step 2 Completed** *Initials: SJG Date: 12/27/17*

**Step 3: Verify Flow Data**

\*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?

**Total number of occurrences: 0**

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?

**Total number of occurrences: 0**

**Not Applicable**  
 **Step 3 Completed** *Initials: SJG Date: 12/27/17*

**Step 4: Verify Analytical Results for Missing Information or Questionable Results**

Were any results with missing/questionable information identified?  Yes  No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande South	9/28/17	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.

\*Note – HEAL Lab report order number – 1709F81

**Total number of occurrences: 1**

**Step 4 Completed** *Initials: SJK Date: 12/27/17*

**Step 5: Validate Blanks Results**

Were any analytes of concern detected in blank samples?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank ]	[Sample ]	Validation Code/Flag Applied	Code/Flag verified in database? *

\*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

**Total number of occurrences: 0**

**Step 5 Completed** *Initials: SJK Date: 12/27/17*

**Step 6: Validate Holding Times Violations**

Were any samples submitted that did not meet specified holding times?  Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

\*See validation procedures to determine which associated data need to be flagged.  
 \*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.  
**Total number of occurrences: 0**

**Step 6 Completed** *Initials: SJK Date: 12/27/17*

**Step 7: Validate Replicate/Duplicate Results (if applicable)**

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?  
 Yes  No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

**Total number of occurrences: 0**

**Step 7 Completed** *Initials: SJK Date: 12/27/17*

\*\*\*\*\*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



12/27/17

\_\_\_\_\_  
Data Verifier/Validator Signature

\_\_\_\_\_  
Date

**COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS**

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

## Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

**ATTACHMENT 3**  
**DOCUMENTATION FROM DBS&A RELATED TO**  
**SEPTEMBER 27-28, 2017, SAMPLE COLLECTION**  
**AND GROSS ALPHA ANALYTICAL RESULT**

Compliance Monitoring Cooperative  
(CMC)  
Summary of E. coli Loading Calculation Compared to Waste  
Load Allocation (WLA)

CMC Sample #	FY	Wet or Dry Season	Storm Event Date	Stream Segment	Stream Name / Related USGS Gage	Total E. coli Loading in River Exceeds TMDL for River?	Estimated CMC E. coli Loading (CFU/day) for Each Segment	Daily Mean Flow (cfs)	Flow Conditions	WLA for CMC Based on Flow Conditions & Stream Segment (CFU/day)	WLA - Potential Exceedance or Acceptable	Delta - E. coli Loading Minus WLA (CFU/day)
1	FY 2017	Wet Season	8/10/2016	2105.1_00	<b>Alameda to Angostura</b> Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	Yes	8.32E+11	639	Dry	3.24E+10	WLA Potential Exceedance	8.00E+11
			8/10/2016	2105_50	<b>Isleta to Alameda</b> Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	Yes	2.34E+11	703	Mid	4.22E+10	WLA Potential Exceedance	1.92E+11
2	FY 2017	Wet Season	9/12/2016	2105.1_00	<b>Alameda to Angostura</b> Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	Yes	4.67E+11	435	Dry	3.24E+10	WLA Potential Exceedance	4.35E+11
			9/12/2016	2105_50	<b>Isleta to Alameda</b> Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	Yes	1.02E+11	467	Dry	1.57E+10	WLA Potential Exceedance	8.62E+10
3	FY 2017	Wet Season	9/21/2016	2105.1_00	<b>Alameda to Angostura</b> Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	Yes	1.29E+11	350	Low	1.68E+10	WLA Potential Exceedance	1.13E+11
			9/21/2016	2105_50	<b>Isleta to Alameda</b> Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	Yes	1.22E+10	251	Low	3.42E+09	WLA Potential Exceedance	8.74E+09
4	FY 2017	Dry Season	11/21/2016	2105.1_00	<b>Alameda to Angostura</b> Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	No	--	710	Mid	No Value	WLA Acceptable	--
			11/21/2016	2105_50	<b>Isleta to Alameda</b> Isleta Pueblo Boundary to Alameda Street Bridge /	Yes	1.68E+12	881	Mid	4.22E+10	WLA Potential Exceedance	1.63E+12

					0833000 - Rio Grande at Albuquerque, NM (Central)							
5	FY 2018	Wet Season	7/27/2017	2105.1_00	<b>Alameda to Angostura</b> Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	No	2.50E+10	545	Dry	3.24E+10	WLA Acceptable	-7.46E+09
			7/27/2017	2105_50	<b>Isleta to Alameda</b> Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	Yes	8.63E+10	470	Dry	1.57E+10	WLA Potential Exceedance	7.06E+10
6	FY 2018	Wet Season	9/27/2017	2105.1_00	<b>Alameda to Angostura</b> Non-Pueblo Alameda Bridge to Angostura Diversion / 08329928 - Rio Grande near Alameda	Yes	7.34E+12	983	Moist	9.09E+10	WLA Potential Exceedance	7.25E+12
			9/27/2017	2105_50	<b>Isleta to Alameda</b> Isleta Pueblo Boundary to Alameda Street Bridge / 0833000 - Rio Grande at Albuquerque, NM (Central)	Yes	2.18E+12	1,190	Moist	6.29E+10	WLA Potential Exceedance	2.11E+12

CMC Water Quality Results Database

FY 2018

Date: March 29, 2018

Data checked, entered into DMRs on 3/29/18 and sent to AMAFCA to sign

DMR Form Parameter	Database Parameter Name (for lookup)	Rio Grande North		Rio Grande South		Units
		CMC SAMPLE 5 NORTH Collection Date 7/27/17 Wet Season Sample	CMC SAMPLE 6 NORTH Collection Date 9/27/17 Wet Season Sample	CMC SAMPLE 5 SOUTH Collection Date 7/27/2017 Wet Season Sample	CMC SAMPLE 6 SOUTH Collection Date 9/27/2017 Wet Season Sample	
Temperature, water deg. Centigrade	Temperature	23.47	16.3	23.6	15.2	deg C
Conductivity	Conductivity	247	103.4	361	192.2	umho/cm
Oxygen, dissolved [DO]	Dissolved Oxygen (DO)	6.73	7.13	6.8	7.23	mg/L
BOD, 5-day, 20 deg. C	Biochemical Oxygen Demand (BOD <sub>5</sub> )	<2.0	2	2	5	mg/L
Oxygen demand, chem. [high level] [COD]	Chemical Oxygen Demand (COD)	19.9	20.5	15	36.2	mg/L
pH	pH	7.37	7.83	8.13	7.92	SU
Solids, total suspended	Total Suspended Solids (TSS)	32	260	63	810	mg/L
Oil & Grease	Oil and Grease (N-Hexane Extractable Material)	5.17	ND	3.7	ND	mg/L
Nitrogen, Kjeldahl, total [as N]	Total Kjeldahl Nitrogen (TKN)	ND	0.84	0.84	1.7	mg/L
Nitrite + Nitrate total [as N]	Nitrate plus Nitrite	0.05	0.2	0.88	0.46	mg/L
Phosphorus, total [as P]	Total Phosphorous	0.062	0.28	0.33	0.74	mg/L
Phosphorus, dissolved	Dissolved Phosphorous	0.025	0.029	0.25	0.08	mg/L
Chromium, hexavalent [as Cr]	Chromium VI (Hexavalent)	ND	ND	ND	ND	ug/L
Copper, dissolved [as Cu]	Dissolved Copper	1.1	0.95	1.2	0.98	ug/L
Lead, dissolved [as Pb]	Dissolved Lead	ND	ND	ND	0.47	ug/L

Benzo[b]fluoranthene	Benzo[b]fluoranthene (other name: 3,4-Benzofluoranthene)	ND	ND	ND	ND	ug/L
Benzo[k]fluoranthene	Benzo(k)fluoranthene	ND	ND	ND	ND	ug/L
Benzo[a]pyrene	Benzo(a)pyrene	ND	ND	ND	ND	ug/L
Chrysene	Chrysene	ND	ND	ND	ND	ug/L
Indeno[1,2,3-cd]pyrene	Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	ug/L
Benzo[a]anthracene	Benzo(a)anthracene	ND	ND	ND	ND	ug/L
Dibenz[a,h]anthracene	Dibenz(a,h)anthracene	ND	ND	ND	ND	ug/L
Pentachlorophenol	Pentachlorophenol	ND	ND	ND	ND	ug/L
Di[2-ethylhexyl]phthalate [DEHP]	Bis (2-ethylhexyl) Phthalate (other names: Di(2-ethylhexyl)phthalate, DEHP )	5.5	3.06	ND	ND	ug/L
Benzidine	Benzidine	ND	ND	ND	ND	ug/L
Dieldrin	Dieldrin	ND	ND	ND	ND	ug/L
Polychlorinated biphenyls [PCBs] - <i>DMR units in mg/L - CMC Database and Lab Reports units in ug/L conversion of 1/1000 applied here - DMR limits to 7 decimal places</i>	PCBs (screening - used method 608)					
	PCBS (Method 1668A - sum of all congeners)	0.0000001	0.0000002	0.0000002	0.0000010	mg/L
E. coli	E. coli	20	733	235.9	6131	CFU/100mL
Solids, total dissolved	Total Dissolved Solids (TDS)	181	225	248.0	260	mg/L
Alpha gross radioactivity	Gross Alpha, Adjusted	2.06 ± 1.6	2.91 ± NA	2.15 ± 1.31	20.9 ± NA	pCi/L
Dibenzofuran	Dibenzofuran	ND	ND	ND	ND	ug/L
Tetrahydrofuran	Tetrahydrofuran	ND	ND	ND	ND	ug/L























