

Texas Institute for Applied Environmental Research: Assessment of Water Quality and Watershed Based Planning for Nolan Creek/South Nolan Creek (58-13-30061)
Progress Report: FY 2015 Quarter 1 covering September 1, 2014 – November 30, 2014 (submitted December 15, 2014)

TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
Contract Executed September 18, 2012			
1.2	Quarterly Progress Report FY13 Q-1 No. 1 Quarterly Progress Report FY13 Q-2 No. 2 Quarterly Progress Report FY13 Q-3 No. 3 Quarterly Progress Report FY13 Q-4 No. 4 Quarterly Progress Report FY14 Q-1 No. 5 Quarterly Progress Report FY14 Q-2 No. 6 Quarterly Progress Report FY14 Q-3 No. 7 Quarterly Progress Report FY14 Q-4 No. 8 Quarterly Progress Report FY15 Q-1 No. 9 Quarterly Progress Report FY15 Q-2 No. 10 Quarterly Progress Report FY15 Q-3 No. 11 Quarterly Progress Report FY15 Q-3 No. 12	Dec. 15, 2012 Mar. 15, 2013 Jun. 15, 2013 Sep. 15, 2013 Dec. 15, 2013 Mar. 15, 2014 Jun. 15, 2014 Sep. 15, 2014 Dec. 15, 2014 Mar. 15, 2015 Jun. 15, 2015 Sep. 15, 2015	December 14, 2012 March 15, 2013 June 14, 2013 Sept. 13, 2013 Dec. 13, 2013 March 18, 2014 June 11, 2014 September 12, 2014
1.3	Contract Communication Post-Award Meeting Post Award Meeting Minutes Quarterly Communication Minutes	Oct., 18, 2012 Dec. 15, 2012 Quarterly with QPR	Held Sep. 21, 2012 at TCEQ Offices in Austin Conference call with TCEQ Project Manager November 19, 2014 (Minutes provided in Attachment #1)
1.4	Annual Report Article FY13 Annual Report Article FY14 Annual Report Article FY15	Upon Request Upon Request Upon Request	
1.5	Project Coordination Meeting with EPA	Sep 30, 2014	
2.1	QAPP Planning Meeting with City of Killeen	Oct. 18, 2012	Feb. 11, 2013 TIAER met with CoK in Killeen to discuss the QAPP and Monitoring plan drafts.
2.2	Draft QAPP for Monitoring	Nov. 16, 2013	Feb. 22, 2013 - A draft Monitoring QAPP was sent to the TCEQ Project Manager for review. Received comments March 28 and responded with final revision dated April 17, 2013 and QAPP approved May 2, 2013

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
2.3	Draft QAPP for Modeling	Nov. 16, 2013	Feb. 22, 2013 – A draft Modeling QAPP was sent to the TCEQ Project Manager for review. Received comment April 4 and responded with final revision dated May 13, 2013 approved May 16, 2013.
2.4	QAPP Updates FY14 FY15	No less that 60 days prior to end of effective period	FY14 Annual revision to Monitoring QAPP approved March 6, 2014. FY14 Annual certification for Modeling QAPP approved February 12, 2014.
2.5	QAPP Amendments Draft QAPP Amendments Final	As needed As needed	No activity this quarter
2.6	Data Submittals (quarterly data submittals requested by TCEQ PM)	Mar. 15, 2013 Jun. 15, 2013 Sep. 15, 2013 Dec. 15, 2013 Mar. 15, 2014 Jun. 15, 2014 Sep. 15, 2014 Dec. 15, 2014 Mar. 15, 2015 Jun. 15, 2015 Aug. 15, 2015	Data collection started in May 2013 with approval of monitoring QAPP. First data submittal sent Sep. 13, 2013. Second submittal sent Dec. 16, 2013 Third submittal sent Mar. 12, 2014 Forth submittal June 13, 2014 Fifth submittal September 10, 2014
3.1	Draft PPP Final PPP	Dec. 15, 2012 Mar. 15, 2013	Feb. 25, 2013 – Submitted to TCEQ PM Mar. 4, 2013 – PPP approved by TCEQ PM. Mar. 5, 2013 – Distributed final PPP in PDF form to project partners and TCEQ PM
3.2 – 3.5	Stakeholder Group Development, Activities, Meetings and Project Dissemination	Bi-annually	Public stakeholder meeting held September 25, 2014.
3.6	Draft Building Partnerships – Element E, Part A Report Final Building Partner ships – Element E, Part A Report	Mar. 15, 2013 Aug. 15, 2015	March 4, 2013 – TCEQ PM gave final approval of PPP and approved document was sent in PDF form to project partners.
4.1-4.2	Inventory of existing data and GIS representation for watershed in shapefile or ArcGIS grid format	Revised due date Dec. 5, 2014	Draft completed and delivered to TCEQ December 5, 2014

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
4.3	Draft Watershed Characterization Report Final Watershed Characterization Report	Revised due date Dec. 5, 2014 Revised due date Feb. 20, 2015	Draft completed and delivered to TCEQ December 5, 2014
5.2	Draft Water Quality Monitoring Plan Final Water Quality Monitoring Plan	Nov. 16, 2012 Dec. 15, 2012	Reconnaissance and planning meeting held between TIAER and CoK January 18, 2013 Submitted to TCEQ PM for review February 22, 2013 and approved March 8, 2013.
5.3	Source Survey Technical Report	Dec. 15, 2014	Evaluation conducted at stakeholder meeting September 25, 2014. Visual assessments also conducted by field crew as part of routine monitoring. Report in preparation.
5.5	Draft Watershed Characterization – Phase 2 Report Final Watershed Characterization – Phase 2 Report	Apr. 15, 2015 Jun. 15, 2015	
6.2	Watershed maps that identify potential cause and sources of water quality problems	Jun. 15, 2015	
6.5	Draft Watershed Characterization Phase 3 Report with Loadings Final Watershed Characterization Phase 3 Report with Loadings	June 15, 2015 Jul. 15, 2015	
7.1	Define Education Goals	Mar. 15, 2013	Strategies for reaching targeted audience outlined in PPP
7.2	Identify Target Audience	Mar. 15, 2013	Target audience identified in PPP
7.3	Design Implementation Measures	Mar. 15, 2013	
7.4	Evaluate Education and Outreach Program FY13 FY14 FY15	Sep. 15, 2013 Sep. 15, 2014 Sep. 15, 2015	Evaluation tool prepared and distributed at September 2014 public meeting.
7.5	Draft Information & Education Plan Report Final Information & Education Plan Report	Jun. 15, 2015 Jul. 15, 2015	
8.1- 8.2	Draft Project Report Final Project Report	Jul. 15, 2015 Aug. 15, 2015	

GENERAL COMMENTS

TASK	COMMENTS/ACTIVITIES
1. Project Administration	Project administrative duties occurred as needed including emails, quarterly communication, development of quarterly progress reports and reimbursement requests.
2. Quality Assurance	No activity this quarter. Annual revisions or certification reviews conducted and approved for FY14. Next review to be initiated in January 2015 for FY15.
3. Building Partnerships	Stakeholder list updated based on requests. Next stakeholder meeting held September 25, 2014 at the Killeen Transportation Services Building.
4. Watershed Characterization – Data Inventory	Draft report completed for submittal to TCEQ.
5. Watershed Characterization – Data Collection and Analysis	Routine monitoring was conducted monthly throughout the quarter at all 11 stations and is summarized in Table 1 at the end of the General Comments Section. Storm monitoring was conducted in late March at the four storm sampling stations (see Table 2). Corrective Action Reports and Corrective Action Plans issued for project samples are presented in Table 3 with the Corrective Action Status as Table 4. Source Survey Technical Report in preparation (Task 5.3).
6. Identification of Causes and Sources of Pollution and Estimation of Pollutant Loads	SELECT model modified for use with ArcGIS version 10.0. Input parameter for Nolan watershed collected and preliminary analyses conducted.
7. Information and Education Component	Evaluation tool distributed at September 2014 public meeting and results summarized.
8. Project Report	No activity to report

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Table 1. Routine Monthly Monitoring for September 2014 through December 2014.
Number of samples and comments, as applicable.

Collection Date	TCEQ Station ID	Sonde	Nutrients & TSS	<i>E. coli</i>	Flow	Comments
10Sep2014	11915	1	1	1	1	
10Sep2014	18828	1	1	1	1	
10Sep2014	21436	1	1	1	1	
10Sep2014	18827	1	1	1	1	
10Sep2014	21437	1	1	1	1	
10Sep2014	11913	1	1	1	1	
10Sep2014	11911	1	1	1	1	
10Sep2014	11910	1	1	1	1	
10Sep2014	11908	1	1	1	1	
10Sep2014	11905	1	1	1	1	
10Sep2014	14237	1	1	1	1	
08Oct2014	11915	1	1	1	1	
08Oct2014	18828	1	1	1	1	
08Oct2014	21436	1	1	1	1	
08Oct2014	18827	1	1	1	1	
08Oct2014	21437	1	1	1	1	
08Oct2014	11913	1	1	1	1	
08Oct2014	11911	1	1	1	1	
08Oct2014	11910	1	1	1	1	
08Oct2014	11908	1	1	1	1	
08Oct2014	11905	1	1	1	1	
08Oct2014	14237	1	1	1	1	
12Nov2014	11915	1	1	1	1	
12Nov2014	18828	1	1	1	1	
12Nov2014	21436	1	1	1	1	
12Nov2014	18827	1	1	1	1	
12Nov2014	21437	1	1	1	1	
12Nov2014	11913	1	1	1	1	
12Nov2014	11911	1	1	1	1	
12Nov2014	11910	1	1	1	1	
12Nov2014	11908	1	1	1	1	
12Nov2014	11905	1	1	1	1	
12Nov2014	14237	1	1	1	1	

Sonde data includes dissolved oxygen, specific conductance, pH, and water temperature.

Nutrients include nitrite-nitrogen + nitrate-nitrogen (NO₂-N+NO₃-N, dissolved), total Kjeldahl nitrogen (TKN), orthophosphate-phosphorus (OPO₄-P, dissolved), and total phosphorus (TP).

Table 2. Storm Monitoring for September 2014 through December 2014. Number of samples and comments, as applicable. Nutrient and TSS, unless noted, represent a flow-weighted sample collected with an automated sampler. Samples for *E. coli* are grab samples collected during elevated flow conditions.

Collection Date	TCEQ Station ID	Nutrients & TSS	<i>E. coli</i>	Flow	Comments
19Nov2014	18828	1	1	1	
19Nov2014	11913	1	1	1	
19Nov2014	11910	1	1	1	
19Nov2014	11905	1	1	1	Storm grab for nutrients, automated sampler did not initiate.

Nutrients include nitrite-nitrogen + nitrate-nitrogen (NO₂-N+NO₃-N, dissolved), total Kjeldahl nitrogen (TKN), orthophosphate-phosphorus (OPO₄-P, dissolved), and total phosphorus (TP).

Corrective Action Reports

The below listing includes CARs where data quality was potentially impacted and required notification and review by the TIAER PM. The deficiencies were not such to require immediate reporting to TCEQ, and are, thus, reported with the QPR.

Table 3
Summary of new Corrective Action Reports

TIAER CAR # & CAP#	Sample Collection Date	Report Initiation Date	TIAER Sample Number(s)	Site(s)	Description of Deficiency	Cause(s)	Resulting or Suggested Action	Corrective Action for Specific Incident	Corrective Actions to be Taken	Proposed Completion Date	Date Closed
14-0089 & CAP #8	08Oct2014	09Oct2014	1000093961	14237	Matrix spike recovery 142% for NO ₂ -N, NO ₃ -N; MS=17.2 & sample = 15.8 mg/L; spike 1 mg/L	High sample concentration requiring dilution	None	Flag data with "SR" for data submittal	Review data for acceptability for project objectives.	10Nov2014	09Dec2014
14-0100 & CAP #8	12Nov2014	17Nov2014	1000094049	18827	Matrix spike recovery 74% for NO ₂ -N, NO ₃ -N; MS=17.7 & sample = 16.9 mg/L; spike 1 mg/L	High sample concentration requiring dilution	None	Flag data with "SR" for data submittal	Review data for acceptability for project objectives.	05Dec2014	09Dec2014
14-0101 & CAP #9	13Aug2014	17Nov2014	1000093876	11913	RPD for field split greater than 30% for TKN (sample 1.26 mg/L and split 0.28 mg/L)	Unknown, all other analytes in split passed as well as other batch QC	Continue to monitor	Flag data with "SP" for data submittal	Review data for acceptability for project objectives.	05Dec2014	09Dec2014

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Table 4
Corrective Action Status Table

Corrective Action # (CARs)	Date Issued (CAP)	Description of Deficiency	Action Taken	Date Closed
1 (CARs 13-0092 & 13-0105)	06Sep2013	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N & TKN)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	01Oct2013
2 (CAR 13-0097)	06Sep2013	Quanti-Tray comparator for <i>E. coli</i> analysis was used past expiration	Expired comparator was checked against new comparator. Added comparator expiration date to monthly maintenance check schedule.	10Jan2014
3 (CAR 13-0101)	06Sep2013	Field filtration of NO ₂ -N+NO ₃ -N and PO ₄ -P was unable to occur.	Field crew directed to use alternative parameter codes as outlined in the QAPP. Field personnel reminded to verify that loaded equipment matches the items on the equipment check list, which is located in the Nolan field notebooks.	03Sep2013
4 (CARs 13-0137 & 13-0138)	12Dec2013	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N & PO ₄ -P)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	13Jan2014
5 (CARs 14-0022, 14-0031 & 14-0038)	05Jun2014	Matrix spike beyond recovery limits (PO ₄ -P, NO ₂ -N+NO ₃ -N & TKN)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	09Jun2014
6 (CAR 14-0031)	05Jun2014	Sonde incorrectly calibrated for specific conductance	Field personnel instructed to review calibration procedures prior to next monitoring event. Data omission to be noted with data submittal.	27May2014

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Corrective Action # (CARs)	Date Issued (CAP)	Description of Deficiency	Action Taken	Date Closed
7 (CARs 14-0045, 14-0046 & 14-0047)	05Sep2014	RPD for field split greater than 30% for TKN	Associated sample data flagged with “SP” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	12Jun2014
8 (CARs 14-0089 & 14-0100)	09Dec2014	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N)	Associated sample data flagged with “SP” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	09Dec2014
9 (CAR 14-0101)	09Dec2014	RPD for field split greater than 30% for TKN	Associated sample data flagged with “SP” in data submittal. Historical data reviewed in comparison to sample values to determine acceptability for project objectives.	09Dec2014

Attachment #1
Minutes from Quarterly Project Coordination Meeting

Date: Wednesday November 19, 2014

Time: 9 – 9:30am

Participants: Anne McFarland - TIAER
Leah Taylor - TIAER
Arthur Talley – TCEQ
Megan Wilson – TCEQ

Topics Discussed:

New TCEQ project members – Arthur introduced Megan Wilson as joining the team from TCEQ. TIAER will begin including Megan on all email correspondents.

Outstanding Invoice – Arthur indicated that he still did not have the 4th quarter invoice. Anne said she would follow up on this with SRS (Sponsored Research Services).

Data Inventory Report – Arthur asked about the schedule for the Data Inventory Report. Anne indicated that the draft report under Task 4.3 would be submitted to Arthur and Megan by December 5, 2014, as noted in the revised timeline for this deliverable.

Altering deadlines for report deliverables – Anne discussed about altering the deadlines for the Phase 2 report of the Watershed Characterization (Task 5.5) and Phase 3 report of the Watershed Characterization (Task 6.5). Because Phase 2 is scheduled to be due in April but monitoring will continue through May, it was proposed by Anne to extend the deadline for Phase 2 and potentially deliver Phase 3 earlier to stagger these reports for review with TCEQ.

Close out plan – The close out plan for the project was discussed. TIAER is not anticipating any issues with the budget or finalizing the project by the close date, although a budget revision moving some money between categories may be prudent. The budget will be tight but the project will be completed in budget. TCEQ would like to be within 1% of expenditures, this is something Anne believes TIAER can accommodate.

SELECT Modeling – Anne and Arthur discussed inclusion of an urban category in use of SELECT for the Nolan Creek Watershed. Anne will look into this a bit more. SELECT does not directly include urban areas outside of considering pet population density, but this could potentially be added outside SELECT. The possibility of addressing SSOs outside of SELECT was also discussed.