Appendix D

Analytical Data Validation Discussion

Introduction

This appendix provides an overview of the EAA's post analyses review of the TestAmerica analytical data set. In general, the data are considered valid for the intended purpose of assessing the baseline of sediment quality, storm water runoff quality, and surface water (under base flow conditions) at a screening level for Comal and San Marcos springs. Analyses with any associated laboratory issues are listed herein.

Worth note in this assessment are the detection of plasticizer compounds such as bis(2-ethylhexyl) phthalate and other phthalate compounds. While it is probable these compounds were introduced post sample collection from either sampling equipment, or laboratory equipment, they should not be completely dismissed unless noted in the detailed discussion of a data group. Further assessment of the presence or absence of these compounds may be warranted in the future.

Analytical results are discussed by analytical laboratory sample data group number, and by sample event type and date. Each event (surface water/base flow, storm water, or sediment) is discussed by sample data group with sample names and date outlined for each event in the beginning of the discussion.

A key to sample names is provided below:

Key to Sample Names

H CS 1 10

H=HCP
CS=Comal Springs (**SM**=San Marcos Springs)
1=Sample Type (1=Surface Water, 2=Storm, 3=Sediment)
10=Sample Location

Corrective Action Comments

Review of the analytical results indicates a recurring issue with sample volumes adequate to perform MS/MSD pairs (from the provided sample matrix), as well as running confirmation analyses. The EAA held a meeting with the regional manangment of TestAmerica and discussed the issue. The issue springs from the laboratory being in the process of converting to low volume sample analyses. However, not all of the TestAmerica locations are yet performing this methodology. The large sample loads associated with the HCP sampling resulted in some samples being analyzed at some locations that have not yet fully adopted the low volume analyses. As such, the EAA and TestAmerica are working to address this issue by providing additional sample volumes.

Another corrective action is in progress to prevent another occurrence of VOC analyses being performed without an associated trip blank (SDG 560-42969, 43026, and 42996). The EAA is taking measures that will ensure sample kits are checked for TB inclusion from the laboratory.

Analytical Data Review Summary for HCP samples collected in 2013.

TestAmerica Laboratory *Data Group Numbers* (HCP surface water/base flow samples collected April 15-16, 2013 and May 21, 2013 Comal and San Marcos springs):

560-39287-1 (HCS 110)
560-39287-2 (HCS 120)
560-39287-3 (HCS 130)
560-39287-4 (HCS 140)
560-39287-5 (HCS 160)
560-39287-6 (Trip Blank)
560-39287-7 (HCS 140 FD)
560-39287-8 (Eq. Blank)
560-39329-3 (HSM 130)
560-39329-4 (HSM 140)
560-39329-5 (HSM 150)
560-39329-6 (HSM 160)
560-39329-7 (HSM 170)
560-39329-8 (Trip Blank)
560-39329-9 (HSM 160 FD)
560-39329-10 (Eq. Blank)
560-40082-1 (HSM 110)
560-40082-2 (HSM 120)
560-40082-3 (Trip Blank)

General Comments
Although some analytical issues are noted for the data group, unless otherwise noted in the detailed discussion the data are considered valid for the purposes of the investigation. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values which are flagged for hold time exceedance are not used for sample assessment purposes.

Equipment Blank for Comal Springs (April 15th) - Toluene, Lead, TKN, DOC. Each of these analytes were detected at low levels (below the reporting limit) in the equipment blank sample. TKN was also detected in the laboratory method blank. The TKN detection is dismissed due to detection in the method blank. This particular equipment blank was collected adjacent to an area of vehicular traffic possibly influencing the detection of Toluene. The detection of Lead and DOC in the equipment blank indicate additional rinse cycles (using reagent grade water) may be required on sample equipment.

Equipment Blank for San Marcos Springs (April 16th) - Chloroform, ethyl ether, gamma-BHC (Lindane), TKN, DOC, and TDS were detected in the equipment blank sample. Ethyl ether, gamma-BHC (Lindane), and TKN were detected at low levels (below the reporting limit). TKN was also detected in the method blank. The TKN detection is dismissed due to detection in the method blank. Chloroform, DOC, and TDS were detected at levels above the reporting limit for the analytical method. The detection of these analytes in the equipment blank indicate additional rinse cycles (using reagent grade water) may be required on sample equipment. Note however, the gamma-BHC detection is suspected as a false positive.

Trip Blank (Comal – April 15th)
There were no detections in the trip blank associated with this sample set.

Trip Blank (San Marcos – April 16th)
There were no detections in the trip blank associated with this sample set.

Trip Blank (San Marcos – May 21st)
There were no detections in the trip blank associated with this sample set.

QA/QC Discussion – Comal Springs Surface/Base Flow Samples
(Sampled April 15, 2013)

Issues associated with all Comal surface samples: HCS 110, HCS 120, HCS 130, HCS 140, HCS 140 FD, & HCS 160

Method SW8260B - A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. TestAmerica's SOP allows five analytes to recover outside acceptable criteria for this method when a full list spike of >90 analytes is utilized. The LCS associated with this batch had 3 analytes, Benzyl Chloride, cis-1, 4-Dichloro-2-butene and trans-1, 4-Dichloro-2-butene outside control limits; therefore re-extraction or re-analysis was not performed. The results are accepted, per laboratory SOP.

Method 8141A Pesticides - The LCS and/or the LCSD for batch 640-101150 exceeded control limits for epn. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the results are accepted.

Method 8141A Pesticides - The LCS and the LCSD for batch 640-101150 exceeded control limits for Dichlorvos. This analyte performed poorly when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Only batch precision exceeded control limits for Dichlorvos. These results have been reported and qualified. The sample group is noted non-detect for 8141A compounds, the results are accepted.

Method 3520C/8141 Pesticides - Due to insufficient sample volume no MS/MSD was prepped/analyzed with Pesticides batch 101150 associated with these samples. The sample group is noted non-detect for 8141 compounds, the results are accepted.

Method 8151A Herbicides - The relative percent deviation between the primary and confirmation column exceeded 40% for the surrogate in the MS/MSD, LCS, and method blank associated with this sample set. The lower value has been reported and qualified in accordance with TestAmerica's SOP. The results are accepted.

Method 6020 Metals - The serial dilution performed for the samples associated with batch 87186 was outside control limits. Due to the low concentrations of metals in the samples, and no noted issues with the initial test run, this is not considered to be a significant issue with the data quality. Results with concentrations below the RL may be affected. The results are accepted.

Method 9060 Total Organic Carbon - TOC was detected in the method blank. The concentration of TOC in the method blank was above MDL, but below the RL. The results are accepted but quantitation at low concentrations may be questionable.

Method 351.2 TKN - TKN was detected in the method blank. The concentration of TKN in the method blank was above the MDL, but below the RL. The results are accepted but quantitation at low concentrations may be questionable.

Additional Issues by Individual Sample

HCS 110

Method 8270C SVOCs - The percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for 4-Nitroaniline and 3, 3-Dichlorobenzidine. The LCS was within acceptable limits. Therefore, the results are accepted.

Method 8082A PCBs - Two surrogates are used in this analysis, TestAmerica's SOP allows one surrogate to be outside acceptance criteria without performing re-extraction/re-analysis. DCB Decachlorobiphenyl was outside of acceptance limites, tetrachloro-m-xylene was inside acceptance limites. Results are therefore accepted, per laboratory SOP.

Method 8151A Herbicides - Percent recovery results for the MS/MS pair, the MS or the MSD associated with this sample were outside acceptable limits for Pentachlorophenol and Dichlorprop. The LCS was within acceptable limits. The associated sample is noted to be non-detect for 8151A compounds.

Method 6010 Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silicon. However, the LCS was within acceptable limits; therefore, the results are accepted.

Method SM5310B - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for DOC. The LCS was within acceptable limits. Therefore, the results are accepted.

QA/QC Discussion - San Marcos Springs Surface/Base flow Samples (Sampled April 16 & May 21, 2013)

Issues associated with HSM 130, HSM 140, HSM 150, HSM 160, HSM 160 FD, & HSM 170 (Sampled April 16)

Method 8082A PCBs - Due to insufficient sample volume for preparation/analysis, elevated reporting limits are provided. The results are accepted. Future sampling events are to include additional sample volume.

Method 8270 SVOCs - Due to insufficient sample volume, no MS/MSD was performed and elevated reporting limits are provided for these samples. The results are accepted. Future sampling events are to include additional sample volume.

Method 8081B Pesticides - The LCS and/or the LCSD for batch 640-101193 or the relative percent deviation recovered outside control limits for alpha-BHC and aldrin. The lighter anayltes have low recoveries compared to later eluting compounds indicating that some anayltes were lost during concentration of the extracts. There was insufficient sample to perform a re-extraction or re-analysis. The sample set is noted non-detect for aldrin and alpha-BHC. Future sampling events are to include additional sample volume.

Method 8081B Pesticides - The relative percent deviation was outside acceptable limits for gamma-bhc (Lindane) and heptachlor in the MS/MSD pair associated with these samples. The LCS was within acceptable limits. The results are accepted.

Method 8081B Pesticides - Percent recovery results for tetrachloro-m-xylene was outside acceptable limits in the method blank, the LCS, and the MS associated with these samples. However, the DCB decachlorobuphenly surrogate was within acceptable limits. The results are accepted.

Method 8141 Pesticides - The LCS and the LCSD for batch 640-101193 exceeded control limits for naled. Naled has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. The results are accepted. The sample group is noted as non-detect for naled.

Issues associated with HSM 130, HSM 140, HSM 150, HSM 160, & HSM 160 FD (Sampled April 16)

Method 9060 TOC - TOC was detected in the method blank. The concentration of TOC in the method blank was above the MDL, but below the RL. The results are accepted, but quantitation at low concentrations may be affected.

Issues associated with HSM 130, HSM 140, HSM 150, HSM 160, & HSM 170 (Sampled April 16)

Method 351.2 TKN - TKN was detected in the method blank. The concentration of TKN in the method blank was above the MDL, but below the RL. The results are accepted, but quantitation at low concentrations may be affected.

Issues associated with HSM 110 & HSM 120 (Sampled May 21)
Method 9060 TOC - TOC was detected in the method blank. The concentration of TOC in the method blank was above the MDL, but below the RL. The results are accepted, but quantitation at low concentrations may be affected.

Method 5310B DOC - DOC was detected in the method blank. The concentration of DOC in the method blank was above the MDL, but below the RL. The results are accepted, but quantitation at low concentrations may be affected.

Method 8270 SVOCs - Due to insufficient sample volume no MS/MSD was prepped or analyzed with the semi-volatiles batch associated with these samples. Elevated reporting limits are also provided for these samples due to the insufficient sample volume for preparation or analysis. The results are accepted. Additional sample should be provided in the future to avoid this issue.

Additional Issues by Individual Sample

HSM 120 (Sampled May 21)
Method 8081B Pesticides - Two surrogates are used for this analysis. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction or re-analysis. This sample contained Tetrachloro-m-xylene surrogate outside acceptable limits. However, the DCB Decachlorobiphenyl surrogate was within acceptable limits; therefore, the results are accepted.

Method 8081B Pesticides - The relative percent deviation was outside acceptable limits for various analytes in the MS/MSD pair associated with these samples. The LCS was within acceptable limits; therefore, the results are accepted.

HSM 130 (Sampled April 16)
Method 8260B VOCs - A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. TestAmerica's SOP allows for five analytes to recover outside acceptance limits for this method when a full list spike of >90 analytes is utilized. The LCS had benzyl chloride, cis-1, 4-dichloro-2-butene and trans-1,4 dichloro-2-butene outside control limits; therefore, re-analysis was not performed. The results are accepted.

HSM 170 (Sampled April 16)
Method 351.2 TKN - Percent recovery results for the MS associated with this sample were outside acceptable limits for TKN. However, the LCS was within acceptable limits. The results are accepted.

Method 351.2 - The relative percent deviation was outside acceptable limits for TKN in the MS/MSD pair associated with this sample. The results are accepted, but quantitation for results close to the RL may be questionable.

TestAmerica Laboratory *Data Group Numbers* (HCP surface water/base flow samples collected October 7-9, 2013 Comal and San Marcos springs):

560-42969-1 (HCS 110)
560-43026-1 (HCS 120)
560-43026-2 (HCS 130)
560-43026-3 (HCS 140)
560-43026-4 (HCS 160)
560-43026-5 (HCS 140 FD)

560-42996-1 (HSM 110)
560-42996-2 (HSM 120)
560-42996-3 (HSM 130)
560-42996-4 (HSM 140)
560-42996-5 (HSM 150)
560-42996-6 (HSM 160)
560-42996-7 (HSM 170)
560-42996-8 (HSM 120 FD)

General Comments
Although some analytical issues are present for the data group, unless otherwise noted in the detailed discussion the data are considered valid for the purposes of the investigation. The detection of bis(2-ethylhexyl) phthalate in the sample set is generally considered to be a post collection contaminant. However, without performance of additional study (beyond the scope of this effort) the compound cannot be completely discounted in all cases. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values are not used for sample assessment purposes.

Equipment Blanks
Equipment blanks for the October surface water/base flow samples in Comal and San Marcos springs were not collected because grab samples were collected directly into sample bottles.

Trip Blanks
No trip blanks were analyzed with the October surface water/base flow samples for Comal and San Marcos springs. This is discussed in the Corrective Action Comments.

QA/QC Discussion – Comal Springs Surface/Base Flow Samples
(Sampled October 7 & 9, 2013)

Issues associated with HCS 120, HCS 130, HCS 140, HCS 140 FD, & HCS 160
(Sampled October 9)

Method 8270 SVOCs - Bis(2-ethylhexyl) phthalate was detected in the method blank for this analysis. The concentration of Bis (2-ethylhexyl) phthalate in the method blank was above the MDL, but below the RL. The results are reported, but any detection of DEHP in the associated samples are considered invalid.

Method 8270 SVOCs - Acetophenone and/or Benzoic Acid were detected in the method blank for this analysis. The concentration of these compounds in the method blank was above the MDL, but below the RL. The analytes in question are noted as non-detect in the associated sample set.

Methods 3520C/8270 SVOCs - Insufficient sample volume was available to perform a MS/MSD with the Semi-volatiles batch 93782 associated with these samples. Future sampling events are to include additional sample volume.

Method 8082A PCBs - Two surrogates are utilized in this analysis. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The DCB Decachlorobiphenyl surrogate tested outside acceptable limits, however, Tetrachloro-m-xylene was within acceptable limits. The results are accepted.

Methods 3511/8082 PCBs - Insufficient sample volume was available to perform a MS/MSD with the PCB batch 93672 associated with these samples. Future sampling events are to include additional sample volume.

Method 8081B Pesticides - The LCS and/or LCSD for the pesticide batch 640-105193 associated with these samples recovered outside control limits for all analytes. The analytes were biased high in the LCS and were not detected in the associated samples; therefore, the results are accepted.

Method 8081B Pesticides - The relative percent deviation registered outside acceptable limits for 4, 4-DDT, Aldrin, gamma-BHC (Lindane) and Heptachlor in the MS/MSD pair associated with these samples. However, the LCS and LCSD percent recoveries were within acceptable limits. The results are accepted.

Method 8081B Pesticides - Surrogate recovery in prep batch 640-105193 LCS exceeded control limits for the surrogates DCB Decachlorobiphenyl, Tetrachloro-m-xylene, and Dibutylchlorendate. The spike recovery also exceeded control limits with no reportable detections in the associated sample set. These results are accepted.

Method 8151A Herbicides - Surrogate recovery was outside acceptance limits for the MS/MSD associated with these samples. The parent samples' surrogate recovery however, was within acceptance limits. The results are accepted.

Method 8151A Herbicides - Surrogate recovery for the batch method blank associated with these samples was outside control limits. The LCS, however, was within acceptable limits. Re-extraction and/or re-analysis was performed outside of holding time with concurring results. The original analysis was reported and accepted.

Method 8151A Herbicides - The relative percent deviation between the primary and confirmation column exceeded 40% for 2,4-DCAA for the MS/MSD pair associated with these samples. The lower value was reported and accepted.

Method 6020 Metals - The reported value for Aluminum showed a negative amount slightly larger than the absolute value of the RL. These values are accepted.

Additional Issues by Individual Sample

HCS 110 (Sampled October 7)
Method 8260B VOCs - The LCS recovered outside control limits for cyclohexanone. This analyte was biased high in the LCS and was not detected in the associated sample; therefore, the results are accepted.

Method 8260 VOCs - Percent recovery results for the MS/MSD pair, the MS or the MSD associated with this sample were outside acceptable limits for 1, 4-Dioxane and 1-Octene. The LCS was within acceptable limits for these analytes. Therefore, results are accepted.

Method 8260 VOCs - The relative percent deviation for 1, 2, 3-Trichlorobenzene, 1-Octene, Acetonitrile, Ethylene oxide and Styrene in the MS/MSD pair associated with this sample was outside acceptable limits. However, the LCS was within acceptable limits for these analytes. Therefore, the results are accepted.

Method 8270 SVOCs - Bis(2-ethylhexyl) phthalate was detected in the method blank associated with this sample. The concentration of Bis(2-ethylhexyl) phthalate was above the MDL, but below the RL. Any detections in the results are considered invalid for DEHP.

Method 8270 SVOCs - Acetophenone was detected in the method blank associated with this sample. The concentration of Acetophone was above the MDL, but below the RL. Any detections in the results are considered invalid for Acetophone.

Method 3520C/8270C SVOCs - Insufficient sample volume was available to perform a MS/MSD with Semi-volatiles batch 93636. Future sampling events are to include additional sample volume.

Method 8082A PCBs - Two surrogates are utilized in this analysis. The TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The DCB Decachlorobiphenyl surrogate registered outside acceptable limits. The Tetrachloro-m-xylene surrogate came back within acceptable limits. Therefore, these results are accepted.
Method 3511/8082 PCBs - Insufficient sample volume was available to perform a MS/MSD with PCB batch 93614. Future sampling events are to include additional sample volume.

Method 8141B Pesticides - The LCS and/or LCSD for batch 640-105103 recovered outside control limits for epn. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the results are accepted.

Method 8141B Pesticides - Percent recovery results for the MS/MSD pair, the MS or the MSD associated with this sample were outside acceptable limits for Diazinon and Phorate. However, the LCS was within acceptable limits. Therefore, results are accepted.

Method 8141B Pesticides - The relative percent deviation was outside acceptable limits for Diazinon and Ethoprop in the MS/MSD pair associated with this sample. However, the LCS was within acceptable limits. Therefore, results are accepted.

Method 8151A Herbicides - Due to instrument instability during calibration all analytes are reported from column 1. Column 2 was used for confirmation.

Method 8151A Herbicides - The LCS and/or LCSD for batch 297664 recovered outside control limits for dalapon. This analyte was biased high in the LCS and was not detected in the associated sample; therefore, the results are accepted.

Method 8151A Herbicides - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Dalapon and Pentachlorophenol. The LCS was within acceptance criteria. Therefore, the results are accepted.

Method 6020 Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silver. The LCS was within acceptable limits. Therefore, results are accepted.

Method 300.0 Anions - This sample was analyzed outside of analytical holding time due to a down instrument. Nitrate concentrations are within the expected range, and the results appear acceptable even with the hold time violation. The results are flagged as exceeding hold time.

HCS 120 (Sampled October 9)

Method 8260 VOCs - Percent recovery results for the MS/MSD pair, the MS or the MSD associated with this sample were outside acceptable limits for four analytes, Dichlorodifluoromethane, Ethylene oxide, n-Heptane and Isooctane. The LCS was within acceptable limits for these analytes. Therefore, the results are accepted.

Method 8260 VOCs - The relative percent deviation was outside acceptable limits for Ethylene oxide in the MS/MSD pair associated with this sample. However, the LCS was within acceptable limits for this analyte. Therefore, the results are accepted.

Method 8081B Pesticides - Three surrogates are utilized in this analysis. TestAmerica's SOP allows two of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The surrogate Tetrachloro-m-xylene was outside acceptance limits for the MS/MSD pair associated with this sample. However, the DCB Decachlorobiphenyl and Dibutylchlorendate surrogates were within acceptable limits. The results are accepted.

Method 8151A Herbicides - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for 2, 4, 5-T, 2, 4-D, 2, 4-DB, Dalapon, Dicamba, Dichlorprop, MCPA, Pentachlorophenol, Silvex (2, 4,5-TP) and Melfoprop. The LCS was within acceptable limits. Therefore, the data is accepted.

Method 8151A Herbicides - The relative percent deviation was outside acceptable limits for Dichlorprop in the MS/MSD pair associated with this sample. However, the LCS was within acceptable limits. Therefore, the results are accepted.

HCS 140 (Sampled October 9)

Method 6010B Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silicon. However, the LCS was within acceptable limits. Therefore, results are accepted.

Method 7470 Mercury - Percent recovery results for the MSD associated with this sample were outside acceptable limits for Mercury. However, the LCS was within acceptable limits. Therefore, results are accepted.

QA/QC Discussion-San Marcos Springs Surface/Base flow Samples
(Sampled October 8, 2013)

Issues associated with all San Marcos Surface Samples: HSM 110, HSM 120, HSM 120 FD, HSM 130, HSM 140, HSM 150, HSM 160, & HSM 170

Method 8270 SVOCs - Bis(2-ethylexyl) phthalate was detected in the method blank associated with these samples. The concentration was above the method detection limit, but below the reporting limit. Detections in the results are dismissed due to the detection in the method blank.

Method 8270 SVOCs - Acetophenone, and or benzoic acid were detected in the method blank associated with these samples. The concentration was above the method detection limit, but below the reporting limit. Any detections in the results are dismissed due to the detection in the method blank.

Method 8270 SVOCs - Due to insufficient sample volume, a MS/MSD was not prepped or analyzed with semi-volatiles batch 93782. Future sampling events are to include additional sample volume.

Method 8082A PCBs - Two surrogates are used for this analysis. TestAmerica's SOP allows one of these surrogates to be detected outside acceptable limits without performing re-extraction/reanalysis. These samples contained the surrogate DCB Decachlorobiphenyl outside acceptable limits, and Tetrachloro-m-xylene within acceptable limits. The results are accepted.

Method 8082 PCBs - Due to insufficient sample volume, a MS/MSD with PCB batch 93782 was not performed. 8082 compounds are noted at non-detect in the associated sample set. Future sampling events are to include additional sample volume.

Method 8141B Pesticides - The LCS and the LCSD for batch 640-101193 recovered outside control limits for epn. This analyte was biased high in the LCS and was not detected in the associated samples.

Additional Issues by Individual Sample

HSM 110

Method 351.2 TKN - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for TKN. The LCS was within acceptable limits. The results are accepted.

Method 8270 SVOCs - Percent recovery results for the MS/MSD pair, the MS or the MSD were outside acceptable limits for 1-octene, hexachlorobutadiene, hexane, n-heptane, 1, 2, 3-trichlorobenzene, 1, 2, 4-trichlorobenzene and isooctane. However, the LCS was within acceptable limits for these compounds. No detections of these compounds are noted in the analytical results for this sample.

Method 8270 SVOCs - The relative percent deviation was outside acceptable limits for ethylene oxide in the MS/MSD pair associated with this sample. The LCS was within the acceptable limits. Ethylene oxide is noted as non-detect in the associated sample.

Method 8141B Pesticides - Percent recovery results for the MS/MSD associated with this sample were outside acceptable limits for diazinon, ethoprop, and phorate. The laboratory control sample was within acceptable limits. The results are accepted.

Method 8141B Pesticides - The relative percent deviation was outside acceptable limits for diazinon and ethoprop in the MS/MSD pair associated with this sample. The laboratory control sample was within acceptable limits. The results are accepted.

HSM 130

Method 6010B Metals - The percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for silicon. The laboratory control sample was within acceptable limits. The results are accepted.

HSM 150

Method 3520C/8270 SVOCs - Elevated reporting limits are provided for this sample due to insufficient sample volume provided for preparation/analysis. The results are accepted. Future sampling events are to include additional sample volume.

TestAmerica Laboratory *Data Group Numbers* (HCP storm water samples collected July 15, 2013, Comal Springs):

560-41226-1 (HCS 210-3)	***560-41226-10*** (HCS 250-2)
560-41226-2 (HCS 240-3)	***560-41226-11*** (HCS 270-1)
560-41226-3 (HCS 260-3)	***560-41226-12*** (HCS 270-2)
560-41226-4 (HCS 250-3)	***560-41226-13*** (Eq. Blank)
560-41226-5 (HCS 270-3)	***560-41226-14*** (HCS 260-1)
560-41226-6 (HCS 210-3 FD)	***560-41226-15*** (HCS 260-2)
560-41226-7 (HCS 240-1)	***560-41226-16*** (HCS 210-1)
560-41226-8 (HCS 240-2)	***560-41226-17*** (HCS 210-2)
560-41226-9 (HCS 250-1)	***560-41226-18*** (Trip Blank)

General Comments

Although some analytical issues are noted for the data group, unless otherwise noted in the detail discussion the data are considered valid for the purposes of the investigation. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values which are flagged for hold time exceedance are not used for sample assessment purposes. The detection of bis(2-ethylhexyl) phthalate in the sample set is generally considered to be a post collection contaminant. However, without performance of additional study (beyond the scope of this effort) the compound cannot be completely discounted in all cases.

Equipment Blank

Chloroform, bis(2-ethylhexyl) phthalate, potassium, sodium, TOC and DOC were detected in the equipment blank sample. The detected compounds may be an indication that additional rinse using reagent grade water is needed. The bis(2-ethylhexyl) phthalate detection is considered to be a probable laboratory contaminant. All sampling materials were Teflon, however, the reagent grade rinse water was shipped in a plastic container with the potential of containing this compound.

Trip Blank

The trip blank associated with this sample set had a detection of Acetone above the RL. Due to the detection of Acetone in the trip blank, the three Acetone detections in the in the sample set are suspected post collection contaminants.

QA/QC Discussion Comal Storm Water Samples
(Sampled July 15, 2013)

Issues associated with all Comal Storm Water Samples collected July 15th

Method 8270C SVOCs - A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. TestAmerica's SOP allows three analytes to recover outside criteria for method when a full list spike is utilized. The LCS associated with batch number 90376 (method blank batch) had one analyte, 3, 3-Dichlorobenzidine outside control limits; therefore re-extraction or re-analysis was not performed. The results are accepted.

Method 8081B Pesticides - The LCS and/or the LCSD for batches 640-103206 and 640-103275 recovered outside acceptance limits for delta-b, endosulfan I, and endosulfan II. Batch 103206 was re-extracted outside of hold time and there was insufficient sample to perform a re-extraction/re-analysis for batch 103275; therefore, the data was been reported. Delta-b, endosulfan I, and endosulfan II are noted as non-detect in the associated sample set. The results are accepted.

Method 8141B Pesticides - The LCS and/or the LCSD for batches 640-103206 and 640-103275 recovered outside control limits for malathion and coumaphos. Samples were re-extracted outside of hold time for batch 103206 and there was insufficient sample to perform a re-extraction/re-analysis for batch 103275; therefore, the data was reported. One 8141B detection (Malathion) is noted at very low concentration (below the RL) in the associated sample set. The results are accepted, but any detections of Malathion is considered to have questionable quantitation at concentrations close to the RL or lower.

Method 8141 Pesticides - The LCS and the LCSD samples associated with batches 640-103275 and 560-103206 recovered outside control limits for Dichlorvos, Demeton-o, and Naled. Dichlorvos, Dementon-o and Naled have been identified as a poor performing analytes when analyzed using this method. Therefore, re-extraction and/or re-analysis was not performed. The results were reported and qualified. Dichlorvos, Demeton-o, and Naled are noted as non-detect in the associated sample set. Results are accepted.

Method 8151A Herbicides - This method incorporates the use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless the results from both columns are outside criteria. Three 8151A detections (Pentachlorophenol) are noted at very low concentrations (below the RL) in the associated sample set. The results are accepted.

Method 3511/8082A PCBs - Due to insufficient sample volume no MS/MSD was performed for the samples associated with batch 90383. 3511/8082A compounds are noted as non-detect in the associated sample set. The results are accepted, future sampling events are to include additional sample volume.

Method 9060 TOC - The method blank contained TOC above the MDL but below the RL; therefore, re-extraction and/or re-analysis of samples was not performed. The results are accepted, but quantitation at low concentrations may be affected.

Method 3520/8270 SVOCs - Due to insufficient sample volume no MS/MSD was performed for samples associated with batch 90370. Future sampling events are to include additional sample volume.

Issues associated with HCS 210-2, HCS 210-3, HCS 210-3 FD, HCS 240-1, HCS 240-2, HCS 250-1, HCS 250-2, HCS 260-1, HCS 260-2, HCS 260-3, HCS 270-1, & HCS 270-2

Method 8082A PCBs - Two surrogates are used for this analysis. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The sample contained the DCD Decachlorobiphenyl surrogate outside acceptable limits, but Tetrachloro-m-xylene within acceptable limits. Therefore, the results are accepted.

Additional Issues by Individual Sample

HCS 210-2

Method 8151A Pentachlorophenol - This method incorporates use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless results from both columns are outside criteria. Results are within TestAmerica's SOP acceptance limits. Pentachlorophenol was detected at very low concentration (below the RL). Results are accepted.

HCS 210-3

Method 8081 Pesticides - Two surrogates are used for this analysis. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The sample contained DCD Decachlorobiphenyl surrogate outside acceptable limits, but Tetrachloro-m-xylene was within acceptable limits. Therefore, the results are accepted.

Method 8151A Pentachlorophenol - This method incorporates use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless results from both columns are outside criteria. Results are within TestAmerica's SOP acceptance limits. Pentachlorophenol was detected at very low concentration (below the RL). Results are accepted.

HCS 210-3 FD

Method 8151A Pentachlorophenol - This method incorporates use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless results from both columns are outside criteria. Results are within TestAmerica's SOP acceptance limits. Pentachlorophenol was detected at very low concentration (below the RL). Results are accepted.

HCS 270-1

Method 8141B Malathion - The LCS and or laboratory control sample duplicate (LCSD) for batch 640-103206 recovered outside control limits for this analyte. The sample was re-extracted outside of hold time. There was insufficient sample to perform a re-extraction or re-analysis. The result is accepted, but any results for malathion are considered to have questionable quantitation.

HCS 270-2

Method E300.0 Nitrate-N - Sample was analyzed outside of analytical holding time due to heavy load of samples (missed by 1 hour from 48 hours holding time.) The result is accepted but quantitation may be questionable. Nitrate results are within expected concentrations.

TestAmerica Laboratory *Data Group Numbers* (HCP storm water samples collected August 15-16, 2013, San Marcos Springs):

560-41934-1 (HSM 210-1)
560-41934-2 (HSM 210-2)
560-41934-3 (HSM 210-3)
560-41934-4 (HSM 230-1)
560-41934-5 (HSM 230-2)
560-41934-6 (HSM 230-3)
560-41934-7 (HSM 231-1)
560-41934-8 (HSM 231-2)
560-41934-9 (HSM 231-3)
560-41934-10 (HSM 240-1)
560-41934-11 (HSM 240-2)
560-41934-12 (HSM 240-3)
560-41934-13 (HSM 250-1)
560-41934-14 (HSM 250-2)
560-41934-15 (HSM 250-3)
560-41934-16 (HSM 260-1)
560-41934-17 (HSM 260-2)
560-41934-18 (HSM 260-3)
560-41934-19 (Eq. Blank)
560-41934-20 (HSM 270-1)
560-41934-21 (HSM 270-2)
560-41934-22 (HSM 270-3)
560-41934-23 (HSM 260-3 FD)
560-41934-24 (Trip Blank)

General Comments
With the exception of DEHP, and the laboratory collected pH values hold time violation, results for this SDG are considered qualified. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values are not used for sample assessment purposes.

Equipment Blank
Equipment blank detections are not present in any parent samples from the sample data group (SDG), with the exception of Bis(2-ethylhexyl)phthalate, or DEHP. This is a very common laboratory and/or post collection contaminant which appears frequently in this SDG's laboratory blank samples. As such, it is not considered a quality issue with the remaining analytes for the sample or the SDG. The analyte DEHP is generally considered to be highly suspect as a false positive for this SDG. The other two detected analytes in the equipment blank are not noted anywhere else in this SDG. The equipment blank detections appear to be emanating from either the reagent grade water used for the equipment blank, the plastic decontamination buckets, or from a laboratory process.

Trip Blank
There were no detections in the trip blank associated with this sample set.

QA/QC Discussion San Marcos Storm Water Samples
(Sampled August 15, 2013)

Issues associated with all San Marcos Storm Water Samples collected August 15th
Method 3511/8082 PCBs - Due to insufficient sample volume no MS/MSD was performed for the samples associated with batches 91906 and 91769. 3511/8082 compounds are noted as non-detect in the associated sample set. The results are accepted, but future sampling events are to include additional sample volume.

Method 3511/8081 Pesticides - Due to insufficient sample volume no MS/MSD was performed for the samples associated with batches 91879 and 91907. 3511/8081 compounds are noted as non-detect in the associated sample set. The results are accepted, but future sampling events are to include additional sample volume.

Method 3520/8270 SVOCs - Due to insufficient sample volume no MS/MSD was performed for the samples associated with batches 91795 and 91874. Future sampling events are to include additional sample volume.

Method 8151A Herbicides - The recovery percent deviation between the primary and confirmation column exceeded 40% for 2,4-DCAA in the MS/MSD pair, the LCS, and the associated samples. The lower value was reported in accordance with TestAmerica's SOP. The results are accepted.

Issues associated with HSM 210-1, HSM 210-2, HSM 210-3, HSM 230-1, HSM 231-2, HSM 231-3, & HSM 270-1
Method 8270 SVOCs - Bis (2-ethylhexyl) phthalate was detected at very low concentration (below the RL) in the method blank associated with this sample set. Due to the detection of this compound in the method blank any detections in the associated sample set are dismissed.

Issues associated with HSM 240-1 & HSM 250-1
Method 8082A PCBs - Two surrogates are utilized for this analysis. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. These samples contained the surrogate DCB Decachlorobiphenyl outside acceptable limits, but Tetrachloro-m-xylene within acceptable limits. 8082A compounds are noted as non-detect in the associated samples. These results are accepted.

Additional Issues by Individual Sample

HSM 210-1

Method 8151A Herbicides - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Pentachlorophenol. However, the LCS was within acceptable limits. Pentachlorophenol is noted as non-detect in the associated sample. The results are accepted.

Method 6020 Metals - Percent recovery results for the MS/MSD pair, the MS, or the MSD were outside acceptable limits for Calcium, Magnesium, Sodium, Strontium and Nickel. However, the LCS was within acceptable limits. The results are accepted.

HSM 231-1

Method 8081B Pesticides - Two surrogates are used for this analysis. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. This sample contained the surrogate DCB Decachlorobiphenyl outside control limits. However, tetrachloro-x-xylene was within acceptable limits. The results are accepted.

HSM240-2

Method 351.2 TKN - Percent recovery results for the MS associated with this sample were outside acceptable limits for TKN. However, the LCS was within acceptable limits. The results are accepted.

HSM 260-3 FD

Method 300.0 Anions - Percent recovery results for the MS associated with this sample were outside acceptable limits for chloride. However, the LCS was within acceptance limits. The results are accepted.

TestAmerica Laboratory *Data Group Numbers* (HCP storm water samples collected October 13, 2013, Comal Springs):

560-43094-1 (HCS 210-1)	***560-43094-10*** (HCS 250-1)
560-43094-2 (HCS 210-2)	***560-43094-11*** (HCS 260-2)
560-43094-3 (HCS 210-3)	***560-43094-12*** (HCS 260-3)
560-43094-4 (HCS 240-1)	***560-43094-13*** (HCS 270-1)
560-43094-5 (HCS 240-2)	***560-43094-14*** (HCS 270-2)
560-43094-6 (HCS 240-3)	***560-43094-15*** (HCS 270-3)
560-43094-7 (HCS 240-3 FD)	***560-43094-16*** (HCS 270-2 FD)
560-43094-8 (HCS 250-2)	***560-43094-17*** (Eq. Blank)
560-43094-9 (HCS 250-3)	***560-43094-18*** (Trip Blank)

General Comments

Although some analytical issues are noted for the data group, unless otherwise noted in the detail discussion the data are considered valid for the purposes of the investigation. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values which are flagged for hold time exceedance are not used for sample assessment purposes. The detection of bis(2-ethylhexyl) phthalate in the sample set is generally considered to be a post collection contaminant. However, without performance of additional study (beyond the scope of this effort) the compound cannot be completely discounted in all cases.

In several cases, an analytical method for this sample set used a MS/MSD pair, MS, MSD, LCS, or method blank that originated from a sample data group other than this one. Corrective action was discussed with the lab to make sure these quality control samples come from the appropriate sample data groups in the future. The laboratory data group numbers and methods associated with sample sets other than the appropriate HCP sample set are not discussed below but are documented in the laboratory report available in Appendix C.

Equipment Blank

Fluoride was detected in the equipment blank sample at very low concentration (below the RL). The Fluoride detection may be an indication that additional rinse using reagent grade water is needed.

Trip Blank

There were no detections in the trip blank associated with this sample set.

Issues associated with all Comal storm water samples collected October 13th
Method 8082A PCBs - The method blank associated with these samples was analyzed for PCBs using two surrogates. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The sample contained the surrogate DCB Decachlorobiphenyl outside acceptance limits, but Tetrachloro-m-xylene within acceptable limits. Therefore, the results are accepted.

Method 8141B Pesticides - The recovery percent deviation of the LCS and LCSD for preparation batch 640-105213 recovered outside control limits for mevinphos and diclorvos. Dichlorvos and Mecinphos have been identified as a poor performers when utilized for this analysis. Therefore, re-extraction/re-analysis was not preformed. The results are accepted. Mevinphos and diclorvos are noted as non-detect in the sample set.

Method 3520C/8270 SVOCs - Insufficient sample volume was available to perform a MS/MSD with Semi-volatiles batch 93897. The results are accepted, future sampling events are to include additional sample volume.

Method 8151A Herbicides - A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. TestAmerica's SOP allows for one analyte to recover outside acceptance criteria for this method when a full list spike is utilized. The LCS/MS/MSD associated with batch 298553 had Pentachlorophenol outside control limits; therefore, re-extraction/re-analysis was not performed. The results are accepted. Pentachlorophenol is noted as non-detect in the sample set.

Issues associated with HCS 210-1, HCS 210-2, HCS 240-1, HCS 240-2, HCS 240-3, HCS 240-3 FD, HCS 260-2, HCS 270-1, HCS 270-2 FD, & HCS 270-3
Method 8151A Herbicides - The recovery percent deviation between the primary column and confirmation column exceeded 40% for 2,4-DCAA in these samples, the MS/MSD pair, LCS, and method blank. The lower value is reported in accordance with TestAmerica's SOP. The associated samples are noted as non-detect for 8151A compounds. The results are accepted.

Issues associated with HCS 210-1, HCS 210-2, HCS 210-3, HCS 240-1, HCS 240-2, HCS 240-3, HCS 250-1, HCS 250-2, HCS 270-2, HCS 270-2 FD, & HCS 270-3
Method 8270C SVOCs - The method blank for batch 94092 contained bis(2-ethylhexyl) phthalate above the MDL. This target analyte concentration was less than the RL; therefore, re-extraction and/or re-analysis of samples was not performed. Due to detection in the method blank, any detections of bis(2-ethylhexyl) phthalate in the associated samples is dismissed.

Issues associated with HCS 240-3 FD, HCS 250-2, HCS 250-3, HCS 260-3, HCS 270-1, HCS 270-2, HCS 270-2 FD, & equipment blank.
Method 8081B Pesticides - Surrogate recovery for these samples was outside the upper control limit. These samples did not contain the target analytes; therefore, re-extraction and/or re-analysis was not performed. The results are accepted.

Issues associated with HCS 210-1, HCS 250-1, HCS 260-2, & HCS 270-3
Method 8081B Pesticides - Three surrogates are used for this analysis. TestAmerica's SOP allows two of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. Theses samples contained the surrogate(s) Tetrachlorobiphenyl and/or Dibutylchlorendate and/or DCB Decachlorobiphenyl outside limits. These samples contained the allowable number of surrogates outside acceptable limits; therefore, the results are accepted.

Issues associate with HCS 210-1, HCS 210-2, & HCS 270-2 FD
Method 3520C/8270 SVOCs - Elevated reporting limits are provided for these samples due to insufficient sample volume for preparation/analysis. Future sampling events are to include additional sample volume.

Issues associated with HCS 210-1
Method 8151A Herbicides - Percent recovery results for the MS/MSD pair, the MS, or the MSD associated with this sample were outside acceptable limits for Pentachlorophenol and Dinoseb. The LCS was within acceptance criteria. Therefore, the results are accepted. The sample is noted as non-detect for pentachlorophenol and dinoseb.

Method 6010B Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silicon. The LCS was within acceptable limits. Therefore, the results are accepted.

Method 300.0 Anions - Percent recovery results for the MS/MSD pair, the MS, or the MSD associated with this sample were outside acceptable limits for Bromide, Nitrate and Sulfate. The LCS was within acceptable limits. Therefore, the results are accepted.

Issues associated with HCS 240-3 FD
Method 351.2 TKN - Percent recovery results for the MSD associated with this sample were outside acceptable limits for TKN. The LCS was within acceptable limits. Therefore, the results are accepted.

TestAmerica Laboratory *Data Group Numbers* (HCP storm water samples collected October 31, 2013, San Marcos Springs):

560-43443-1 (HSM 210-1)
560-43443-2 (HSM 210-2)
560-43443-3 (HSM 210-3)
560-43443-4 (HSM 210-3 FD)
560-43443-5 (HSM 230-1)
560-43443-6 (HSM 230-2)
560-43443-7 (HSM 230-3)
560-43443-8 (HSM 231-1)
560-43443-9 (HSM 231-2)
560-43443-10 (HSM 231-3)
560-43443-11 (HSM 240-1)
560-43443-12 (HSM 240-2)
560-43443-13 (HSM 240-3)
560-43443-14 (HSM 240-3 FD)
560-43443-15 (HSM 250-1)
560-43443-16 (HSM 250-2)
560-43443-17 (HSM 250-3)
560-43443-18 (HSM 260-1)
560-43443-19 (HSM 260-2)
560-43443-20 (HSM 260-3)
560-43443-21 (HSM 270-1)
560-43443-22 (HSM 270-2)
560-43443-23 (HSM 270-3)
560-43443-24 (HSM 260-3 FD)
560-43443-25 (Eq. Blank)
560-43443-26 (Trip Blank)

General Comments

Although some analytical issues are noted for the data group, unless otherwise noted in the detail discussion the data are considered valid for the purposes of the investigation. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values which are flagged for hold time exceedance are not used for sample assessment purposes. The detection of bis(2-ethylhexyl) phthalate in the sample set is generally considered to be a post collection contaminant. However, without performance of additional study (beyond the scope of this effort) the compound cannot be completely discounted in all cases.

In several cases, an analytical method for this sample set used a MS/MSD pair, MS, MSD, LCS, or method blank that originated from a sample data group other than this one. Corrective action was discussed with the lab to make sure these quality control samples come from the appropriate sample data groups in the future. The laboratory data group numbers and methods associated with sample sets other than the appropriate HCP sample set are not discussed below but are documented in the laboratory report available in Appendix C.

Equipment Blank

Chloromethane and Nickel were detected in the equipment blank sample at low concentrations (below the RL). The detected compounds may be an indication that additional rinse using reagent grade water is needed.

Trip Blank

There were no detections in the trip blank associated with this sample set.

Issues associated with all San Marcos storm water samples collected October 31st
Method 8260B VOCs - The LCS recovered outside control limits for 1,2,4-trichlorobenzene & 1,2,3-trichlorobenzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported

Method 8081B Pesticides - The LCS and/or the LCSD for batch 94821 recovered outside control limits for alpha and gamma chlorodane. These analytes were biased high in the LCS and were not detected in the associated samples above the RL. The results are accepted, but quantitation of these compounds may be questionable.

Method 8151A Herbicides - The recovery percent deviation between the primary and confirmation column exceeded 40% for 2,4-DCAA. The lower value has been reported and qualified in accordance with TestAmerica's SOP. The results are accepted, but detections of this compound are below the RL and quantitation may be questionable.

Issues associated with HSM 260-1, HSM 260-2, HSM 260-3, HSM 260-3 FD, HSM 270-1, HSM 270-2, & HSM 270-3
Method 6020 Metals - The method blank for preparation batch 94781 contained no Copper above or below the absolute value of the RL for Copper. These samples, associated with this method blank, each have an "L" flag indicating that the samples had a matrix that was cleaner than the method blank for Copper. While the method blank met acceptance limits, the associated samples were so clean they showed a value less than the absolute value of the RL.

Issues associated with HSM 230-3 & HSM 270-3
Methods 3520C/8270C SVOCs - Elevated reporting limits are provided for this sample due to insufficient sample provided for preparation/analysis. The sample is noted as non-detect for 3520C/8270C compounds. Future sampling events are to include additional sample volume.

Issues associated with HSM 210-1
Method 8141B Pesticides - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Monochrotophos. The LCS was within acceptable limits. Monochrotophos is noted non-detect in the associated sample. The results are accepted.

Method 8141B Pesticides - The relative percent deviation was outside acceptable limits for Fensulfothion and Monochrotophos in the MS/MSD pair associated with this sample. The LCS was within acceptable limits. The two compounds are noted non-detect in the associated sample. The results are accepted.

Method 6010 Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silicon. However, the LCS was within acceptable limits. Therefore, the results are accepted.

Method 351.2 TKN - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for TKN. The LCS was within acceptable limits. Therefore, data are reported.

Issues associated with HSM 240-2
Method 351.2 TKN - Percent recovery results for the MS associated with this sample were outside acceptable limits for TKN. However, the LCS was within acceptable limits. The results are accepted.

Method SM2540C TDS - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for TDS. The LCS was within acceptable limits. The results are accepted.

Issues associated with HSM 250-2
Method 6010 Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silicon. However, the LCS was within acceptable limits. The results are accepted.

Method 300.0 Anions - Percent recovery results for the MS associated with this sample were outside acceptable limits for Sulfate. The LCS was within acceptable limits. The results are accepted.

Issues associated with HSM 260-1
Method 8260 VOCs - Percent recovery results for the MS/MSD pair, the MS or the MSD associated with this sample were outside acceptable limits for 1, 2, 3-Trichlorobenzene, 1, 2, 4-Trichlorobenzene and Hexachlorobutadiene. The LCS met acceptance criteria. The results are accepted.

Method 300.0 Anions - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Bromide. The LCS was within acceptable limits. The results are accepted.

Issues associated with HSM 270-2
Method 8270 SVOCs - Percent recovery results for the MS/MSD pair, the MS or the MSD associated with this sample were outside acceptable limits for 3, 3-Dichlorobenzidine, Bis(2-chloroethoxy)methane, Bis(2-chloroethyl)ether, 4-Bromophenyl phenyl ether, 2-Chloronaphthalene, 4-Chlorophenyl phenyl ether, Dibenzofuran, 3, 3-Dichlorbenzidine, Diethyl phthalate, Dimethyl phthalate, 2, 6-Dinitrotoluene, Fluorene, Isophorone, 2-Methylnaphthalene, 2-Nitroaniline, 3-Nitroaniline, Napthalene, N-Nitrosodiphenylamine, 1, 2, 4-Trichlorobenzene, 4-Chloro-3-methylphenol, 2-Chlorophenol and 2, 4, 5-Trichlorophenol. However, the LCS was within acceptable limits and 8270 compounds are noted non-detect in the sample. The results are accepted.

Method 8270 SVOCs - The relative percent deviation in the MS/MSD pair for this sample was outside acceptable limits for Acenaphthene, Acenaphthylene, Benzyl alcohol, Bis(2-chloroethoxy)methane, Bis(2-chloroethyl)ether, 4-Chloroaniline, 2-Chloronaphthalene, Dibenzofuran, 1, 2-Dichlorobenzene, 1, 3-dichlorobenzene, 1, 4-Dichlorobenzene, Hexachlorocyclopentadiene, Hexachloroethane, Isophorone, 2-Methylnapthalene, Naphthalene, Nitrobenzene, N-Nitrosodi-n-propylamine, 1, 2, 4-Trichlorobenzene, 2-Chlorophenol, 2, 4-Dichlorophenol, 2, 4-Dimethylphenol, 2-Methylphenol, 3 & 4 Methylphenol, 2-Nitrophenol, Phenol and 2, 4, 6-Trichlorophenol. However, the LCS was within acceptable limits and 8270 compounds are noted non-detect in the sample. The results are accepted.

Method 8151A Herbicides - Percent recovery results for the MS/MSD pair, the MS, or the MSD associated with this sample were outside acceptable limits for Dichlorprop, Pentachlorophenol and Silvex (2, 4, 5-TP). The LCS was within acceptable limits and 8151A compounds are noted non-detect in the sample. The results are accepted.

Method 8151A Herbicides - In the MS/MSD pair associated with this sample, the recovery percent deviation between the primary and confirmation column exceeded 40% for 2,4-DCAA. The lower value has been reported and qualified in accordance with TestAmerica's SOP. The sample is noted as non-detect for any 8151A compounds. The results are accepted.

TestAmerica Laboratory *Data Group Numbers* (HCP storm water samples collected November 1, 2013, San Marcos Springs):

560-43468-1 (HSM 210-4)
560-43468-2 (HSM 230-4)
560-43468-3 (HSM 231-4)
560-43468-4 (HSM 250-4)
560-43468-5 (HSM 240-4)
560-43468-6 (HSM 260-4)
560-43468-7 (HSM 270-4)

General Comments
Although some analytical issues are noted for the data group, unless otherwise noted in the detail discussion the data are considered valid for the purposes of the investigation. pH values are collected in the field at the time of sample collection and are listed in the field parameters for each sample event. As such, the laboratory pH values which are flagged for hold time exceedance are not used for sample assessment purposes.

In several cases, an analytical method for this sample set used a MS/MSD pair, MS, MSD, LCS, or method blank that originated from a sample data group other than this one. Corrective action was discussed with the lab to make sure these quality control samples come from the appropriate sample data groups in the future. The laboratory data group numbers and methods associated with sample sets other than the appropriate HCP sample set are not discussed below but are documented in the laboratory report available in Appendix C.

Equipment Blank
This sample data group is a continuation of the previous sample set collected on October 31, 2013. The equipment blank referenced with the samples collected prior to this sample set is also associated with these samples.

Trip Blank
This sample data group is a continuation of the previous sample set collected on October 31, 2013. The trip blank referenced with the samples collected prior to this sample set is also associated with these samples.

Issues associated with all San Marcos storm water samples collected November 1st
Method 8141B Pesticides - The recovery percent deviation of the LCS and LCSD for preparation batch 640-105681 recovered outside control limits for fensulfothion. The LCS and the LCSD percent recovery were within acceptable limits. The results are accepted.

Method 8151A Herbicides - The recovery percent deviation between the primary and confirmation column exceeded 40% for 2,4-DCAA. The lower value has been reported and qualified in accordance with TestAmerica's SOP. The sample set is noted as non-detect for any 8151A compounds. The results are accepted.

Method 6020 Metals - The serial dilution performed for the samples associated with batch 94889 were outside control limits for Calcium. Calcium concentrations are within the expected range, and the results appear acceptable.

Issues associated with HSM 210-4
Method 8141B Pesticides - Percent recovery results for the MS/MSD pair, the MS or the MSD were outside acceptable limits for Mevinphos and Monochrotophos. However, the LCS was within acceptable limits. The sample is noted non-detect for 8141B compounds. The results are accepted.

Method 8141B Pesticides - The relative percent deviation was outside acceptable limits for Mevinphos and Monochrotophos in the MS/MSD pair associated with this sample. However, the LCS was within acceptable limits. The sample is noted non-detect for 8141B compounds. The results are accepted.

Method 6010 Metals - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Silicon. The LCS was within acceptable limits. The results are accepted.

Methods 3520C/8270C SVOCs - Elevated reporting limits are provided for this sample due to insufficient sample provided for preparation/analysis. The sample is noted as non-detect for 3520C/8270C compounds. Future sampling events are to include additional sample volume.

Issues associated with HSM 230-4
Method 300.0 Anions - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for Sulfate. However, the LCS was within acceptable limits. The results are accepted.

Methods 3520C/8270C SVOCs - Elevated reporting limits are provided for this sample due to insufficient sample provided for preparation/analysis. The sample is noted as non-detect for 3520C/8270C compounds. Future sampling events are to include additional sample volume.

Issues associated with HSM 231-4
Method 351.2 TKN - Percent recovery results for the MS/MSD pair associated with this sample were outside acceptable limits for TKN. The LCS was within acceptable limits. Therefore, the results are accepted.

TestAmerica Laboratory *Data Group Numbers* (HCP sediment samples collected on June 10-13, 2013 Comal and San Marcos springs):

560-40484-1 (HCS 310)
560-40484-2 (HCS 320)
560-40484-3 (HCS 340)
560-40484-4 (Eq. Blank)
560-40484-5 (Trip Blank)
560-40521-1 (HCS 330)
560-40521-2 (HCS 360)
560-40521-3 (HCS 330 FD)
560-40521-4 (HSM 310)
560-40591-1 (HSM 320)
560-40591-2 (HSM 330)
560-40591-3 (HSM 340)
560-40591-4 (HSM 350)
560-40622-1 (HSM 360)
560-40622-2 (HSM 360 FD)
560-40622-3 (HSM 370)
560-40622-4 (Trip Blank)

General Comments
Although some analytical issues are noted for the data group, unless otherwise noted in the detailed discussion the data are considered valid for the purposes of the investigation. Sediment pH values, along with other field parameters, were not collected in the field at the time of sample collection and are not listed for each sample event. As such, the laboratory pH values which are flagged for hold time exceedance are the only pH values available for sample assessment purposes.

Equipment Blank
Di-n-butyl phthalate, Strontium, TOC, DOC, and TSS were detected in the equipment blank sample. Di-n-butyl phthalate, Strontium, TOC, and DOC were detected at low levels (below the reporting limit). TOC was also detected in the laboratory method blank. The TOC detection in the equipment blank is dismissed due to detection in the method blank. TSS was detected above the analytical method reporting limit. The Di-n-butyl phthalate detection may be a post collection contaminant, and the other detections indicate additional rinse cycles (using reagent grade water) may be required on sample equipment.

Trip Blank (Comal)
There were no detections in the trip blank associated with this sample set.

Trip Blank (San Marcos)
There were no detections in the trip blank associated with this sample set.

QA/QC Discussion - Comal Springs Sediment Samples
(Sampled June 10 & 11, 2013)

Issues associated with all Comal Sediment Samples: HCS 310, HCS 320, HCS 330, HCS 330 FD, HCS 340, & HCS 360

Method 8151A Herbicides - This method incorporates the use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless the results from both columns are outside criteria. Any results which fall outside criteria are qualified and reported. Contamination peak coeluting with 2,4-DCAA caused a high biased condition on column two; therefore, all surrogates are reported from column one.

Method 8151A Herbicides - Due to insufficient sample volume, no MS/MSD was performed for batch 680-280649 associated with this sample. The LCS was duplicated to provide precision data. Future sampling events are to include additional sample volume.

Issues associated with HCS 310, HCS 320, HCS 330, HCS 340, & HCS 360

Method SW8270C SVOCs - Due to the matrix, the initial volume used for these samples deviated from the standard procedure: Approximately 3.00 g of sample matrix was used instead of the specified 30.00 g. The reporting limits have been adjusted proportionately. The results are accepted.

Issues associated with HCS 330, HCS 330 FD, & HCS 360

Method 8141B Pesticides - Percent recovery of the Triphenylphosphate surrogate was outside control limits for this sample. Re-extraction and/or re-analysis was performed outside holding time with acceptable results. Both sets of data are included in the lab's report and the results are accepted. Note that results with hold time violations (H-flag) are not reported in the text of the report, but are shown in the laboratory report.

Method 3550C/8141/8081 Pesticides - Due to insufficient sample volume no MS/MSD was prepped/analyzed with pesticides batch 102773 associated with this sample. Future sampling events are to include additional sample volume.

Method SW9056 Sulfate - Sulfate was detected in the method blank. The concentration of sulfate in the method blank was above MDL, but below the RL. The result is accepted but quantitation at low concentrations may be affected.

Issues associated with HCS 310, HCS 320, & HCS 340

Method E365.4 - Due to the high concentration of phosphorus, the MS/MSD could not be evaluated for accuracy and precision. The LCS met acceptance criteria. The results are accepted.

Method 8141B Pesticides - The LCS and/or LCSD for batch 640-102485 recovered outside control limits for methyl azinphos. This analyte was biased high in the LCS and was not detected in the associated sample; therefore, the data is accepted.

Issues associated with HCS 310 & HCS 320
Method 8260B VOCs - The LCS for batch 88964 recovered outside control limits for Hexachlorobutadiene. This analyte was biased high in the LCS and was not detected in the associated sample; therefore, the data is accepted.

Issues associated with HCS 330 & HCS 330 FD
Method 8081B Pesticides - Percent recovery of the DCB Decachlorobiphenyl surrogate and the Tetrachloror-x-xylene surrogate were outside control limits for this sample. Re-extraction and/or re-analysis was performed outside of holding time with acceptable results. Both sets of data are included in the lab's report and results are accepted. Note that results with hold time violations (H-flag) are not reported in the text of the report, but are shown in the laboratory report.

Additional Issues by Individual Sample

HCS 310
Method 8081B Pesticides - Percent recovery of the surrogate DCB Decachlorobiphenyl was outside acceptable limits; however, the surrogate Tetrachloro-m-xylene was within acceptance limits. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis; therefore, the results are accepted.

Method SW6020 Metals - Percent recovery results for aluminum, antimony, barium, cadmium, calcium, chromium, copper, lead, strontium, and zinc in the MS/MSD were outside acceptable limits. The LCS was within acceptable limits; therefore, the results are accepted.

Method 6020 Metals - The relative percent deviation was outside acceptable limits for Zinc in the MS/MSD pair associated with this sample. The LCS was within acceptable limits. Therefore, the results are accepted

HCS 360
Method 8081B Pesticides - Percent recovery of the surrogate Tetrachloro-m-xylene was outside acceptable limits; however, the DCB Decachlorobiphenyl surrogate was within acceptance limits. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis; therefore, the results are accepted.

Method 6020 Metals - Percent recovery results or the MS/MSD pair, the MS, or the MSD were outside acceptable limits for aluminum, antimony, barium, iron, lead, and copper. The LCS was within acceptable limits; therefore, the results are accepted.

QA/QC Discussion - San Marcos Sediment Samples
(Sampled June 11, 12, & 13, 2013)

Issues associated with all San Marcos Sediment Samples: HSM 310, HSM 320, HSM 330, HSM 340, HSM 350, HSM 360, HSM 360 FD, & HSM 370

Due to an error in the reagents used in prep batch 102470, the recoveries for demeton-o, demeton-s, trichloronate and stirophos do not appear in the lab report. Demeton-o and demeton-s met control criteria. The actual recoveries and control limits are: demeton-o, recoveries 34/22%, control limits 13-111%; demeton-s, recoveries 72/48%, control limit 42-138%; trichloronate, recoveries 56/36%, control limit 42-141%; stirophos, recoveries 58/58%, control limit 60-128%.

Due to an error in the reagents used in prep batch 102773, the recoveries for demeton-o, demeton-s, trichloronate and stirophos do not appear in the lab report. Demeton-o, demeton-s, and trichloronate met control criteria. The actual recoveries and control limits are: demeton-o, recoveries 44/67%, control limit 13-111%; demeton-s, recoveries 72/110%, control limits 42-138%; trichloronate, recoveries 50/70%, control limit 42-141%; stirophos, recoveries 58/91%, control limit 60-128%.

Method 8141B Pesticides - The LCS and LCSD for batch 640-102773 recovered outside control limits for naled, and monocrotophos. Naled and monocrotophos were identified as a poor performing analytes when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Batch precision also exceeded control limits for monocrotophos. These results were reported and qualified. 8141B compounds are noted as non-detect in the associated samples, results are accepted.

Method 8151A Herbicides - This method incorporates the use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless the results from both columns are outside criteria. Any results which fall outside criteria are qualified and reported. Contamination peak coeluting with 2,4-DCAA caused a high biased condition on column two; therefore, all surrogates are reported from column one.

Method SW9056 Sulfate - Sulfate was detected in the method blank. The concentration of sulfate in the method blank was above MDL, but below the RL. The results are accepted but quantitation at low concentrations may be affected.

Issues associated with HSM 320, HSM 330, HSM 340, HSM 350, HSM 360, HSM 360 FD, & HSM 370

Method 8141B Pesticides - The LCS and/or the LCSD for batch 640-102773 recovered outside control limits for epn, malathion, ethyl parathion, and stirophos. The samples in prep batch 640-102773 were re-extracts from prep batch 640-102470 which also had LCS/LCSD exceedance of control limits. There was no sample left to re-extract. 8141B compounds are noted as non-detect in the associated samples, results are accepted.

Issues associated with HSM 310, HSM 330, HSM 340, HSM 350, HSM 360, & HSM 360 FD
Method 8141B Pesticides - Percent recovery of the Triphenylphosphate surrogate was outside control limits for these samples. Re-extraction and/or re-analysis was performed outside holding time with acceptable results. Both sets of data are included in the lab's report. 8141B compounds are noted as non-detect in the associated samples, results are accepted. Note that results with hold time violations (H-flag) are not reported in the text of the report, but are shown in the laboratory report.

Issues associated with HSM 310, HSM 320, HSM 330, HSM 340, & HSM 350
Method 8141B Pesticides - The LCS and/or the LCSD for batch 640-102470 recovered outside control limits for ethyl parathion, methyl parathion, chlorpyrifos, fenthion, Phorate and epn. The samples were re-extracted out of hold time in prep batch 640-102773. 8141B compounds are noted as non-detect in the associated samples, the results are accepted. Note that results with hold time violations (H-flag) are not reported in the text of the report, but are shown in the laboratory report.

Method 8151A Herbicides - Due to insufficient sample volume, no MS/MSD was performed for batch 680-280649 associated with these samples. The LCS was duplicated to provide precision data. Future sampling events are to include additional sample volume.

Issues associated with HSM 310, HSM 360, HSM 360 FD, & HSM 370
Method 3550C/8141/8081 Pesticides - Due to insufficient sample volume no MS/MSD was prepped/analyzed with pesticides batch 102773 associated with these samples. Future sampling events are to include additional sample volume.

Issues associated with HSM 330, HSM 350, HSM 360, & HSM 360 FD
Method 8081B Pesticides - Percent recovery of the DCB Decachlorobiphenyl surrogate and the Tetrachloro-x-xylene surrogate were outside control limits for these samples. Re-extraction and/or re-analysis was performed outside of holding time with acceptable results. Both sets of data are included in the lab's report and results are accepted. Note that results with hold time violations (H-flag) are not reported in the text of the report, but are shown in the laboratory report.

Issues associated with HSM 320, HSM 330, HSM 340, & HSM 350
Method 8141B Pesticides - The recovery percent deviation of the LCS and LCSD for preparation batch 640-102773 recovered outside control limits for various analytes. 8141B compounds are noted as non-detect in the associated samples, results are accepted.

Issues associated with HSM 310, HSM 320, & HSM 340
Method 8081B Pesticides - Percent recovery of the surrogate Tetrachloro-m-xylene was outside acceptable limits; however, the DCB Decachlorobiphenyl surrogate was within acceptance limits. TestAmerica's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis; therefore, the results are accepted.

HSM 310 (Sampled June 11)

Method 8141B Pesticides - The LCS and/or the LCSD for batch 640-102773 recovered outside control limits for epn, malathion, ethyl parathion, azinphos-methyl, bolster, chlorpyrifos, coumaphos, famphur, fensulfothion, fenthion, methyl parathion, mevinphos, runnel, and tokuthion. The samples in prep batch 640-102773 were re-extracts from prep batch 640-102470 which also had LCS/LCSD exceedance of control limits. There was no sample left to re-extract. 8141B compounds are noted as non-detect in the associated sample, results are accepted.