GW – 004

2012 - 2013
PILOT TEST

03 / 11 / 2014

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April 11, 2014

Mr. Glenn von Gonten
Senior Hydrologist
Environmental Bureau
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Re: Former Chevron North Eunice Gas Plant (Discharge Permit GW-004)
Review of Pilot Test Data

Dear Mr. Von Gonten,

As Operator of the remediation program at the Former North Eunice Gas Plant, Chevron Environmental Management Company (CEMC) is submitting an electronic version (in .PDF format) of the following report dated March 2014:

- *Review of Pilot Test Data; Former Eunice North Gas Plant; Eunice, New Mexico*

This report was prepared by Conestoga-Rovers & Associates (CRA) on behalf of CEMC to document the results of two pilot tests conducted at the above referenced site in late 2012 through 2013. These pilot tests were designed to assess the potential for utilization of two different injectant compounds for remediation of the hexavalent chromium concentrations in groundwater that exceed NMWQCC standards.

This report is being provided in accordance with the most recent renewal of Discharge Permit GW-004 and is being provided to the NMOCD in electronic format via the FTP site. At this time, CEMC is evaluating the results of the pilot test and CRA recommendations to develop a path forward for remediation of the hexavalent chromium plume.

Should you have any questions or comments with respect to this report of the forward plan for remediation, please do not hesitate to contact me by phone at 713-372-7705 or via e-mail at kegan.boyer@chevron.com.

Sincerely,

Kegan W. Boyer, P.G.
Environmental Project Manager

cc: Mike Wisniowiecki, CRA

Review of Pilot Test Data

Former Eunice North Gas Plant
Eunice, New Mexico

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Section 1.0 Introduction

1.1 Overview

This Report presents the data from pilot studies performed during 2012 and 2013 by environmental consultant Conestoga-Rovers & Associates (CRA) on behalf of Chevron Environmental Management Company (CEMC) at the Former Eunice North Gas Plant, hereafter referred to as the "Site."

1.2 Facility Location and History

The Site is located approximately 0.5 mile north of the Town of Eunice in the south half of the southeast quarter (SE/4) of the northeast quarter (NE/4) of Section 28, Township 21 South (T-21-S), Range 37 East (R-37-E). The approximate latitude/longitude coordinates for the Site are 32°27'01.46"N and 103°09'42.71"W. For the purpose of this report, the assessment Site included in the groundwater monitoring program is comprised of the original gas plant property and surrounding areas.

The Site was originally constructed by Skelly Oil Company during the 1940s, and subsequently acquired and modified by Texaco Exploration and Production, Inc. (Texaco) to operate as a turbo expander-type natural gas processing plant for extraction of natural gas liquids (NGL). Texaco operated the plant into the 1980s when the plant operations ceased and much of the equipment was dismantled and/or shut-in. Structures remaining on Site include two compressors, a compressor building, a cooling tower, former office buildings, aboveground storage tanks, sumps, and piping. Operations were transferred to Versado Gas Processors, LLC (Versado) on July 1, 1998. Versado is a limited liability partnership originally between CEMC and Dynegy Midstream Services (Dynegy). Dynegy continued to operate the two compressors in the northern portion of the Site. Dynegy subsequently was purchased by Targa Midstream Services, L.P. (Targa). Targa became a partner with Versado and currently operates the facility as a natural gas compressor station.

In the early 1990s, Texaco discovered benzene and chromium contamination in soils and groundwater at the Site. In 1996, the New Mexico Oil Conservation Division (NMOCD) required an initial investigation of sumps at the plant as a condition of Groundwater Discharge Permit GW-004. This investigation confirmed dissolved benzene and chromium in groundwater at concentrations exceeding New Mexico Water Quality Control Commission (NMWQCC) human health standards. It was thought that the source of the chromium contamination could be from cooling tower blow-down waters discharged around the surface of the plant. Sequential discharge permits have been submitted as needed. The current permit (Appendix A) was approved in January 2012 and is effective until March 2016.

1.3 Previous Results

Beginning in 2003, remedial efforts to treat chromium contamination in groundwater were initiated. A "study area" was established in areas of highest chromium concentrations (IW-001 and IW-002 located

in the west side of plant, IW-003 located approximately 2,500 feet east of the plant), and three injection wells were installed to allow pilot testing of remedial alternatives. An initial remedial alternative was tested in an "In Situ Reactive Zone" (IRZ). Groundwater treatment, consisting of injections of molasses, was attempted to provide a carbohydrate-based electron donor to lower the oxidation-reduction potential of groundwater to stimulate reduction of hexavalent chromium to trivalent chromium. Trivalent chromium is less toxic and readily precipitates as $Cr(OH)_3$ under alkaline or slightly acidic conditions. The initial pilot study was expanded by installation of a longitudinal array of 14 injection wells completed at the northeastern end of the chromium plume (distal array) approximately 2,500 feet eat northeast of the plant (see Figure 2). The IRZ treatment was applied to this array. IRZ treatments were discontinued in 2005 when bench testing (described below) demonstrated an alternative method could be a potentially more effective remedy.

A bench-scale study was performed by SECOR (a previous environmental consultant to EMC) to determine the optimum treatment chemical for chromium treatment, and findings are summarized in the *Reductive Treatment Bench-Scale Testing Evaluation* (SECOR, January 2006). This study, which was peer reviewed by Chevron's Remediation System Review Team (RSRT) group, found that molasses treatment should be discontinued since bench testing indicated it would reduce the pH of the groundwater and retain dissolved metals in solution. In 2008, the bench tested remedial alternative was implemented as an in situ pilot study. Injection wells IW018 through IW028 (medial array) were selected as injection wells since they bisected the dissolved chromium plume perpendicular to the groundwater flow direction. An inorganic reducing agent (calcium polysulfide) along with an electron donor (sodium acetate solution) was injected at each well continuously for 7 days. The pilot study demonstrated that chromium concentrations were reduced in the area of the injections, however, clogging of the wells occurred and this treatment method was not further pursued.

1.4 Current Pilot Study

In June 2012, four deep groundwater monitor wells were installed in the southeast corner of the Targa facility property, three in the vicinity of deep well MW-007A (MW-096, MW-097, IW-029) and one in the vicinity of deep well MW-009A (IW-030) (see Figure 1). These wells were installed as part of two chromium remediation pilot tests initiated in September 2012 to further evaluate two alternative methods for treatment of dissolved hexavalent chromium at the Site. The pilot study wells were installed just upgradient (west) of the large chromium plume located to the east of the gas plant property boundary. The pilot tests were approved by NMOCD and described in renewed Discharge Permit GW-004. Historic chromium concentrations at well MW-007A have ranged from 290 micrograms per liter (µg/L) to 730 µg/L. In 2011 and 2012 the chromium concentration remained below 300 µg/L. Historic concentrations at well MW009A have been between 630 µg/L and 940 µg/L with the exception of an anomalously low concentration of 67 µg/L reported for the May 2011 monitoring event. The chromium concentration was at 630 µg/L in May 2012, which was the monitoring event prior to the initiation of the pilot study.

A pilot-scale study was performed in order to test the potential of in situ chemical reduction (ISCR) and in situ biochemical reduction (ISBR) to remove dissolved chromium from the groundwater. Two pilot study areas were set up at the Site. The area containing injection well IW029 was used to test ISCR by the injection of a sodium dithionite solution. The area containing injection well IW030 was used to test ISBR by the injection of an emulsified vegetable oil (EVO) solution. Pilot study injections were performed on October 23 and 24, 2012. Post-injection monitoring was performed. The baseline monitoring event was performed in September 2012, prior to the injections. For Pilot Study #1 (the EVO study), the wells were monitored in November and December 2012 and January 2013. These monitoring events were timed to be 1, 2, and 3 months after the injection event. Monitoring was performed for total and hexavalent chromium, bromide, sulfate, sulfide, sodium, and total and dissolved iron. For Pilot Study #2, (the sodium dithionite study), the wells were monitored in January 2013, April 2013, July 2013 and October/November 2013. These monitoring events were timed to be 3, 6, 9, and 12 months after the injection event. Monitoring was performed for total and hexavalent chromium, bromide, sulfate, sulfide, ammonia -nitrogen, orthophosphate-phosphorus total organic carbon, total, and dissolved iron. During well purging activities for both pilot studies, field parameters (pH, temperature, conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP)) were monitored as required in the Discharge Permit. Stable field parameters were documented for each well sampled, assuring that the groundwater reached a stable condition during purging and that a representative sample was be collected. Analytical reports for these monitoring events are included as Appendix B.

Section 2.0 Technology Descriptions

2.1 Reduction of Chromium by Injection of a Reducing Agent

The oxidation states of chromium (Cr) range from minus 2 ($CrII^-$) to plus six ($CrVI^+$), but only the trivalent chromium ($CrIII^+$) and hexavalent chromium ($CrVI^+$) oxidation states are stable under most natural water conditions. $CrVI^+$ is known to be toxic to humans, animals, and plants, and is more mobile in the environment than $CrIII^+$. Conversely, $CrIII^+$ is less toxic and readily precipitates as chromium trioxide ($Cr(OH)_3$) under alkaline or even slightly acidic conditions. Therefore, reduction of $CrVI^+$ to $CrIII^+$ is a potential option for treatment of sites containing $CrVI^+$. Treatment can be accomplished by several methods.

In situ geofixation of chromium is the process of introducing a suitable reducing chemical reagent into the subsurface to reduce $CrVI^+$ to $CrIII^+$. The reduced chromium would be stable because it undergoes geochemical fixation onto the aquifer solids. Reagents such as calcium polysulfide, sodium dithionite, and sodium bisulfite can be used for the geofixation of chromium. It has been observed that short, alternating injections of reducing agent can result in effective distribution of the reducing agent in the subsurface. The reduction of the chromium can be monitored by collection of groundwater samples.

When the groundwater samples turn gray in color with a distinct black precipitate, chromium is being reduced. If the samples are yellow, $CrVI^{+}$ is still present.

2.1.1 Potential By-Products

It has also been observed that when a reducing agent is added, the concentration of other dissolved metals such as iron may increase, however, these increases are expected to be transient. In this study, increases in the iron concentration were observed only at the injection wells. Iron concentrations did reach levels that exceeded the 1-milligram per liter (mg/L) NMWQCC Standard; however, these concentrations were expected to decrease rapidly after the study as conditions returned to their native, more oxidizing state. The dissolved iron would then reprecipitate from the groundwater. If sodium dithionite is used as the reducing agent, concentrations of sodium would also increase in the treatment area. At this Site, the pre-treatment sodium concentrations in the treatment area exceed the 250-mg/L NMWQCC standard for sodium. The additional sodium in the injected material was expected to disperse over time, therefore, sodium concentrations in the treatment area would return to baseline levels and the elevated sodium would be transient. Sulfide is the other by-product of a sodium dithionite injection; however, it is not soluble and settles out of the groundwater rapidly such that it is rarely detected in the groundwater.

2.1.2 Potential Chromium Reduction

For the reducing agent pilot study 2,800 gallons of a 5-percent sodium dithionite solution was injected into injection well IW029. This amount of sodium dithionite could theoretically reduce 87.3 pounds of $CrVI^{+}$ to $CrIII^{+}$. Chromium was present in IW029 at 184 µg/L during the September 2012 baseline monitoring event; therefore, the amount of sodium dithionite added was, in theory, sufficient to treat 57 million gallons of groundwater. The aquifer in the pilot study area is between 10 and 45 feet thick; therefore, the amount injected would, in theory, treat an area of over 500,000 square feet. However, these calculations represent idealized conditions that would not occur in the field, and the actual amount of treatment would be expected to be at least an order of magnitude lower, and would be limited more by the physical ability of the injected material to disperse from the point of injection than the stoichiometric demand of the chromium for the sodium dithionite.

2.2 Reduction of Chromium by Biodegradation

In this procedure, $CrVI^{+}$ is reduced by anaerobic bacteria, which grow in the presence of an adequate nutrient medium and in the absence of oxygen. The soil containing $CrVI^{+}$ is first treated with a nutrient medium, and the pH is adjusted to an optimum level for the growth of anaerobic bacteria. The nutrient medium is usually a combination of a carbon source and a source of energy for the growth of the anaerobic bacteria. The carbon source is typically a lactate, molasses, or a soy-lactate mixture. Under optimal conditions, bacteria grow and reduce $CrVI^{+}$ to $CrIII^{+}$. It is relatively low cost treatment and is very effective.

2.2.1 Potential By-Products

This treatment creates reducing conditions in the treatment area, therefore, the concentration of other dissolved metals such as iron may increase; however, these increases are expected to be transient since iron will reprecipitate as conditions return to their native, more oxidizing state. In this study, increases in iron concentrations were observed only in the injection wells. Iron concentrations did reach levels that exceeded the 1-mg/L NMWQCC standard; however, these concentrations were expected to decrease rapidly after the study as iron precipitates from the groundwater. Under reducing conditions, sulfate is converted to sulfide by sulfate reducing bacteria (SRB). The sulfide precipitates primarily as metal sulfides. Therefore, sulfate concentrations and the concentrations of some metals may decrease in the groundwater. Sulfide is not soluble and settles out of the groundwater rapidly such that it is rarely detected in the groundwater.

2.2.2 Potential Chromium Reduction

For the biological pilot study, 2,800 gallons of a 10-percent EVO solution was injected into injection well IW030. EVO sorbs to soil at a 0.001-pound EVO per pound of soil, and the aquifer in the pilot study area is between 10 and 45 feet thick; therefore, the amount injected would, in theory, treat an area of between 250 and 1,100 square feet depending on the aquifer thickness at the treated location. This measurement is expected to be accurate since the soil sorption demand for EVO is verifiable by measurement.

Section 3.0 Pilot Study

3.1 Injections

In Pilot Test Area #1 (sodium dithionite pilot test), approximately 2,800 gallons of a 5-percent sodium dithionite solution was injected into injection well IW029 on October 23 and 24, 2012. Sodium dithionite was added to water in 1,000-gallon tanks and mixed using a recirculating pump. The sodium dithionite solution was injected by gravity at approximately 10 gallons per minute (GPM).

In Pilot Test Area #2, approximately 2,800 gallons of a 10-percent EVO solution was injected into injection well IW030 on October 23 and 24, 2012. The EVO was diluted in batches and injected by gravity at rates between 3 and 10 GPM. Five hundred gallons of chase water was injected by gravity after the EVO solution was injected.

3.2 Tracer

Sodium bromide was added to both injection solutions as a tracer. Bromide acts as a conservative tracer since it is typically naturally present at only low background concentrations. It is highly water

soluble and is not degraded. Sodium bromide is mixed into the injection solution and migrates in the subsurface with the injected material. Monitoring for bromide ions is performed to determine where the injected material has dispersed. Sodium bromide was added at a concentration of 0.1 percent to both solutions.

3.3 Monitoring

In Pilot Test Area #1, injection well IW029 and monitoring wells MW007A, MW096, and MW097 are located within the pilot study area as shown on Figure 1. The baseline monitoring event was performed in September 2012 prior to the injections. The wells were monitored again in November and December 2012 and January 2013. These monitoring events were timed to be 1, 2, and 3 months after the injection event. Monitoring was performed for total and hexavalent chromium, bromide, sulfate, sulfide, sodium, and total and dissolved iron. Total and hexavalent chromium were monitored in order to determine whether hexavalent chromium was being converted to trivalent chromium and settling out of the groundwater, reducing the total amount of chromium in the groundwater. Bromide was monitored to assess the dispersion and migration of the injected material using the sodium bromide tracer. Sulfate and sulfide were monitored because sodium dithionite can decompose to form sulfate or sulfide. Sodium was monitoring to track both the sodium dithionite and the sodium bromide that were added. Total and dissolved iron was monitored to determine whether reducing conditions had been created in the treatment area. The ratio of total iron to dissolved iron indicates whether reducing conditions are present. If iron is primarily in the dissolved form, then reducing conditions, which would favor the reduction of hexavalent chromium to trivalent chromium, are present.

In Pilot Test Area #2, injection well IW030 and monitoring wells MW009A, MW089SA, and IW028 are located within the pilot study area (Figure 1). The baseline monitoring event was performed in September 2012. The wells were monitored again in January 2013, April 2013, July 2013, and October/November 2013. These monitoring events were timed to be 3, 6, 9, and 12 months after the injection event. Monitoring was performed for total and hexavalent chromium, bromide, sulfate, sulfide, ammonia -nitrogen, orthophosphate-phosphorus, total organic carbon, total, and dissolved iron. Total and hexavalent chromium were monitored in order to determine whether hexavalent chromium was being converted to trivalent chromium and settling out of the groundwater, which would reduce the total amount of chromium in the groundwater. Bromide was monitored to assess the dispersion of the injected material using the sodium bromide tracer. Sulfate and sulfide were monitored to determine whether anaerobic processes such as the conversion of sulfate to sulfide by sulfate reducing bacteria (SRB) were occurring. SRB are active under conditions that would cause the reduction of hexavalent chromium to trivalent chromium therefore if sulfate reduction is taking place, conditions have likely been optimized for chromium reduction also. Ammonia –nitrogen and orthophosphate-phosphorus are nutrients that are essential for microbial metabolism therefore the presence of these nutrients indicates the potential for a large amount of microbial growth and activity that would create conditions that would cause chromium to be reduced. Total organic carbon was monitoring to

determine where the injected carbon source (EVO) had reached and whether it was becoming consumed. Total and dissolved iron was monitored to determine whether reducing conditions had been created in the treatment area. The ratio of total iron to dissolved iron indicates whether reducing conditions are present. If iron is primarily in the dissolved form then reducing conditions which would favor the reduction of hexavalent chromium to trivalent chromium are present.

Section 4.0 Monitoring Data

4.1 Pilot Study #1 (Sodium Dithionite Study)

4.1.1 Chromium

At injection well IW029, the concentrations of total chromium and $CrVI^+$ at the September 2012 baseline sampling event were 184 micrograms per liter (µg/L) and 126 µg/L, respectively which exceeded the NMWQCC standard of 50 µg/L. One month after the sodium dithionite injection in November 2012, these concentrations had been reduced to non-detect levels. However, after 2 months in December 2012, total chromium was present at 21.4 µg/L, which was below the NMWQCC standard of 50 µg/L, but $CrVI^+$ was measured at 161 µg/L which exceeded the NMWQCC standard of 50 µg/L. Similarly, 3 months after the sodium dithionite injection in January 2013, total chromium was measured at 12.5 µg/L, which was below the NMWQCC standard of 50 µg/L, while $CrVI^+$ was measured at 197 µg/L, which exceeded the NMWQCC standard of 50 µg/L. One of these methods was clearly not accurate. Total chromium was measured using an ICP method, while $CrVI^+$ was measured using a colorimetric method. The colorimetric method is subject to interferences by metals such as iron; therefore, the $CrVI^+$ data were likely not accurate due to the high iron concentrations in the post-injection samples. The total chromium data showed that the sodium dithionite injection reduced total chromium in groundwater by 93 percent in the area of the injection well.

Monitoring well MW007A is located approximately 15 feet to the east (downgradient) of the injection well. No reductions in the concentrations of total chromium or $CrVI^+$ were observed at this location during the pilot study. Prior to the pilot study injection the concentrations of total chromium and $CrVI^+$ at this location were measured at 296 µg/L and 308 µg/L, respectively during the September 2012 baseline monitoring event. One month after the injections, in November 2012, these values were 327 µg/L and 319 µg/L indicating little change as a result of the injection. Two months after the pilot study injection, in December 2012 the concentrations of total chromium and $CrVI^+$ had increased to 633 µg/L and 603 µg/L, respectively, however, by three months after the injection, in January 2013, the values had returned to 258 µg/L and 254 µg/L, respectively which were close to the pre-treatment levels. Therefore a transient increase in chromium concentrations was observed at this location during the pilot study period, however, no sustained change in chromium concentrations was observed, suggesting that sufficient sodium dithionite did not reach this area. This suggestion is supported by other data collected from this well as discussed below.

Monitoring well MW096 is located approximately 40 feet to the east (downgradient) of the injection well. Concentrations of total chromium and $CrVI^+$ were low to non-detect both before and after the sodium dithionite injection. $CrVI^+$ was not detected at a concentration above 10 µg/L at this well during the pilot study period. Total chromium was not detected at a concentration above 10 µg/L during the September 2012 baseline monitoring event. During the November and December 2012 monitoring events, 1 and 2 months after the injection, total chromium concentrations were 18 µg/L and 15 µg/L respectively. By the January 2013 monitoring event, 4 months after the injection, the total chromium concentration had returned to less than 10 µg/L. Therefore no sustained effects of the injection were observed at this well.

Monitoring well MW097 is located approximately 15 feet to the north (side gradient) of the injection well. At the September 2012 baseline monitoring event, the initial concentrations of total chromium and $CrVI^+$ at this location were 323 µg/L and 322 µg/L, respectively. Concentrations of both total chromium and $CrVI^+$ increased to 562 µg/L and 436 µg/L 1 month after the injection (at the November 2012 monitoring event) but decreased to 207 µg/L and 183 µg/L, respectively 2 months after the injection, at the December 2012 monitoring event. By 3 months after the injection, at the January 2013 monitoring event, the concentrations of total chromium and $CrVI^+$ had rebounded to 307 µg/L and 272 µg/L, which were close to pretreatment levels. The data showed that a temporary 36-percent reduction in chromium concentration had occurred at this location. Monitoring wells MW-008A and MW-87A are located upgradient of well MW097 and show that chromium is present in groundwater upgradient of well MW097. Therefore, the rebound was likely caused by untreated groundwater moving downgradient into the treatment area. These concentrations are shown graphically in Figure 3.

4.1.2 Other Metals

At injection well IW029, the concentration of dissolved iron increased from non-detect levels prior to the injection to greater than 100 milligrams per liter (mg/L) after the injection. This increase showed that reducing conditions had been created in the area of the injection well. Sodium concentrations increased from 424 mg/L prior to the injection to greater than 4,000 mg/L after the injection reflecting the introduction of both sodium dithionite and sodium bromide. Sodium concentrations, at this location exceeded the 250 mg/L NMWQCC standard both before and after the injection. The high concentrations observed after the injection were expected to decrease rapidly as the injected sodium dispersed, therefore the increase is expected to be transient. At monitoring well MW007A, concentrations of total and dissolved iron remained at non-detect levels throughout the study period. A small increase in the sodium concentration, from 235 mg/L to greater than 300 mg/L was observed after the injection. These data suggested that reducing conditions were not created in the area of monitoring well MW007A and that very little of the injected material reached this location. Monitoring well MW007A is located approximately 15 feet downgradient of the injection well; therefore, these data

suggested that the injected material migrated less than 15 feet downgradient during the monitoring period.

Total and dissolved iron also remained at non-detect levels throughout the monitoring period at monitoring wells MW096 and MW097, suggesting that reducing conditions were not produced at these areas. Sodium concentrations did not increase at MW096, suggesting that the amendments did not reach this well; however, the sodium concentration at well MW097 increased from 375 mg/L to greater than 500 mg/L after the injection, suggesting that a small amount of the injected material had reached this well.

Based on the increase in sodium, it was calculated that sodium dithionite at this well had a concentration of 465 mg/L, which should have been sufficient to reduce the chromium that was present at this location. However, it appears that the sodium dithionite was consumed by other reduceable species such as iron and, therefore, the amount present was not sufficient to reduce the chromium to below the NMWQCC standard.

4.1.3 Sulfate/Sulfide/Bromide

At injection well IW029, the sulfate concentration increased immediately after the sodium dithionite injection. Sulfide was not detected prior to the injection and remained below the detection limit 1 month after the injection; however, by 2 months after the injection, the sulfide concentration had increased from less than 5 mg/L to 5,600 mg/L, indicating that sulfides were being formed. By 3 months after the injection, this concentration had decreased to 1,600 mg/L, indicating that solid sulfides were settling out of the groundwater. The bromide concentration at injection well IW029 was 12.6 mg/L prior to the injection and increased to 387 mg/L 1 month after the injection event. It then decreased to 250 mg/L and 183 mg/L, 2 and 3 months after the injection event, as the injected material moved out of the area of the injection well.

At monitoring well MW007A, the sulfate concentration showed an increase 1 and 2 months after the sodium dithionite injection; however, by 3 months after the injection, it had fallen to below the baseline level. No increase in sulfide or bromide concentration was observed at this location. These data suggest that minimal amounts of the injected material had reached well MW007A.

Increases in sulfate, sulfide, and bromide were not observed after the sodium dithionite injection at monitoring well MW096, which supported the conclusion drawn earlier that the injected material did not reach this well.

At monitoring well MW097, the sulfate concentration was 769 mg/L prior to the injection and increased to 1,360 mg/L 1 month after the injection and then to 1,610 mg/L 2 months after the injection. The sulfate concentration decreased slightly to 1,590 3 months after the injection. Sulfide was not detected

at this location throughout the pilot study period. The bromide concentration at this location was 6.98 mg/L prior to the injection and increased to 12.8 mg/L 1 month after the injection event. After 2 months, it had decreased to 7.8 mg/L and increased again to 18.4 mg/L 3 months after the injection event. These data support the conclusion drawn above that a small amount of the injected material had reached the area of well MW097.

4.1.4 Pilot Study #1 Observations

- Ninety-three percent removal of total chromium was observed in the injection well during the pilot study period.
- $CrVI^+$ data did not show a reduction; however, these data are believed to be inaccurate due to the iron interference.
- Reducing conditions were established in the area of the injection well.
- Sodium, sulfate, sulfide, and bromide data all showed that the injected material reached the area of the injection well.
- A temporary 36-percent reductions in total chromium and a 43 percent reduction in $CrVI^+$ were observed at monitoring well MW097.
- Reducing conditions did not appear to have been established in the area of monitoring well MW097; however, sodium, sulfate, and bromide data suggested that a small amount of the injected material had reached this area. Well. MW097 is located approximately 15 feet to the north (side gradient) of the injection well.
- The data suggested that minimal amounts of injected material reached monitoring wells MW007A and MW096. These wells are located downgradient of the injection well.
- Pilot study data showed that treatment of chromium to below the NMWQCC standard occurred in the area of the injection well; however, minimal downgradient dispersion of the amendment occurred. Temporary treatment of 36 percent of the total chromium and 43 percent of the $CrVI^+$ occurred up to 15 feet to the north of the injection well; however, the majority of the sodium dithionite appeared to have been consumed closer to the injection well.

4.2 Pilot Study #2 (Soy-Lactate Study)

4.2.1 Chromium

At the September 2012 baseline monitoring event, the initial concentrations of total chromium and $CrVI^+$ at injection well IW030 were 429 µg/L and 356 µg/L, respectively, which exceeded NMWQCC standard of 50 µg/L. Three months after the EVO injection at the January 2013 monitoring event, the total chromium concentration had been reduced to 68.4 µg/L, which was an 81-percent reduction although the total chromium concentration exceeded the 50-µg/L NMWQCC standard. The $CrVI^+$ concentration had increased to 448 µg/L. This increase was likely due to iron interference with the

analysis as discussed above for Pilot Study #1. By 6 months after the EVO injection, at the April 2013 monitoring event, total chromium and $CrVI^+$ had been reduced to less than 10 µg/L, which is less than the 50-µg/L standard. The concentration remained below the 50-µg/L standard at the 9- and 12-month post-treatment monitoring events. The chromium data showed that the EVO injection reduced total chromium and $CrVI^+$ in groundwater in the area of the injection well by greater than 85 percent and reduced the concentrations of total chromium and $CrVI^+$ to below the 50-µg/L NMWQCC standard.

Monitoring well MW009A is located approximately 15 feet to the east (downgradient) of the injection well. No reductions in the concentrations of total chromium or $CrVI^+$ were observed at this location during the pilot study until the 12-month post-treatment monitoring event in October 2013 when a small, 13-percent reduction in chromium was observed. Initial concentrations of total chromium and $CrVI^+$ measured at the September 2012 baseline sampling event were 615 µg/L and 634 µg/L, respectively. During the 3-, 6-, and 9 month post-injection monitoring events in January, April, and July 2013, concentrations of total chromium ranged from 628 to 683 µg/L, and concentrations of $CrVI^+$ ranged from 652 to 681 µg/L; these concentrations all exceeded the 50-µg/L NMWQCC standard. At the October 2013 monitoring event, concentrations of total chromium and $CrVI^+$ had been reduced to 549 µg/L and 552 µg/L, respectively. These concentrations exceeded the NMWQCC standard.

Monitoring well IW028 is located approximately 50 feet downgradient of the injection well. Concentrations of total chromium and $CrVI^+$ fluctuated during the pilot study period. The initial $CrVI^+$ concentration was 15 µg/L prior to the EVO injection, which was below the 50-µg/L NMWQCC standard. Three months after the injection at the January 2013 monitoring event, it had increased to 56.3 µg/L, which was above the 50-µg/L NMWQCC standard; after 6 months at the April 2013 monitoring event, it had increased to 719 µg/L, which was above the NMWQCC standard; after 9 months at the July 2013 monitoring event, it had decreased to 20.0 µg/L, which was below the 50-µg/L NMWQCC standard; and after 12 months at the October 2013 monitoring event, it had increased to 30.2 µg/L, which was below the NMWQCC standard. The total chromium concentrations showed the same fluctuations as the $CrVI^+$ concentrations. These fluctuations may not be associated with the EVO injection. Monitoring well IW028 is a new monitoring well; therefore, historical data were not available. The closest well for which historical data was available was well MW009A. At this well, $CrVI^+$ concentrations appear to have remained stable from 2006 and 2012 with the exception of a lower concentration in 2011. However, this well was sampled annually in the spring; therefore, potential seasonal fluctuations were not captured. The observed fluctuations may be due to seasonal variations.

Monitoring well MW089SA is located approximately 15 feet to the southeast (side gradient) of the injection well. The initial concentrations of total chromium and $CrVI^+$ measured at the September 2012 baseline monitoring event at this location were 27.9 µg/L and 27.0 µg/L, respectively which were below the 50-µg/L NMWQCC standard. Concentrations of both total chromium and $CrVI^+$ increased after 6 months to 1,230 µg/L and 1,150 µg/L, respectively, which was above the NMWQCC standard, at the April 2013 monitoring event. The concentrations then decreased to 33.3 µg/L and 30.3 µg/L,

respectively 9 months after the injection at the July 2013 monitoring event, which were below the NMWQCC standard, and then increased to 1,170 µg/L and 1,160 µg/L, which were above the NMWQCC standard at the 12-month post-injection monitoring event in October 2013. The data showed that that chromium concentrations at this location fluctuated. The higher concentrations of greater than 1,000 µg/L were similar to historic concentrations at this well, which were primarily measured in the spring and summer; however, lower concentrations of 23 µg/L and 20 µg/L, for total chromium and $CrVI^{+}$, respectively were observed at the May 2012 monitoring event, which was 4 months before the September 2012 monitoring event, when similar concentrations were observed. These data suggested that the fluctuations observed may not be associated with the EVO injection. These concentrations are shown graphically on Figure 4.

4.2.2 Iron

At injection well IW030, the concentration of dissolved iron increased from less than 0.2 mg/L at the September 2012 baseline monitoring event performed prior to the injection to greater than 82.9 mg/L 3 months after the injection at the January 2013 monitoring event. This concentration exceeded the 1-mg/L NMWQCC standard for iron. The dissolved iron concentration had decreased to 38.3 mg/L by the 12 months post-treatment monitoring event at the October 2013 monitoring event. This concentration exceeded the NMWQCC standard but indicated a decreasing trend. The increase in dissolved iron concentrations showed that reducing conditions had been created in the area of the injection well. At monitoring well MW009A, the concentrations of total and dissolved iron remained at less than 0.2 mg/L throughout the study period. These data suggested that reducing conditions were not created in the area of monitoring well MW009A. Total and dissolved iron also remained at non-detect levels throughout the monitoring period at monitoring wells IW028 and MW089SA, suggested that reducing conditions were not established in these areas.

4.2.3 Sulfate/Sulfide/Bromide

At injection well IW030, the concentration of sulfate decreased from 1,320 mg/L at the September 2012 baseline monitoring event to less than 10 mg/L 3 months after the EVO injection at the January 2013 monitoring event. The baseline concentration of 1,320 mg/L exceeded the 600-mg/L NMWQCC standard. The sulfate concentration remained at less than 10 mg/L through the rest of the pilot study. These data showed that anaerobic conditions had been established causing sulfate to be converted to sulfide by SRB. Sulfide was not detected prior to the injection and remained below the detection limit throughout the pilot study period; however, sulfides are not soluble in water. Therefore, if solid sulfides were settling out of the groundwater at approximately the same rate they were formed, sulfide would not be detected in the groundwater. The bromide concentration at injection well IW030 was 14.9 mg/L prior to the injection at the September 2012 monitoring event and increased to 149 mg/L 3 months after the injection at the January 2013 monitoring event. The concentration then decreased to 112 mg/L 6 months after the injection at the April 2013 monitoring event, but increased again to

250 mg/L and 291 mg/L 9 months and 12 months after the injection at the July and October 2013 monitoring events. These data showed that the amendments remained in the pilot study area.

At monitoring well MW009A, sulfate remained high at greater than 600 mg/L, which exceeded the NMWQCC standard, and sulfide was not detected through the pilot study period. No increase in bromide concentrations was observed at this location. These data suggested that minimal amounts of the injected material had reached the area of well MW009A.

At monitoring well IW028, the sulfate concentration was 488 mg/L at the September 2012 baseline monitoring event, which is below the NMWQCC standard. The sulfate concentrations increased to 754 mg/L and 1,460 mg/L, at 3 and 6 months respectively after the EVO injection which were above the 600-mg/L NMWQCC standard. The sulfate concentration then decreased to 347 mg/L after 9 months at the July 2013 monitoring event and returned to the pretreatment level of 500 mg/L after 12 months at the October 2013 monitoring event. Sulfide was not detected throughout the pilot study period. No increase in bromide concentrations was observed at this location. These data suggested that minimal amounts of the injected material had reached the area of well IW028.

At monitoring well MW089SA, the sulfate concentration was 220 mg/L prior to the injection at the September 2012 monitoring event, which was below the 600-mg/L NMWQCC standard. The sulfate concentration increased to 1,560 mg/L, 6 months after the injection at the April 2013 monitoring event which was above the NMWQCC standard, decreased to 187 mg/L, 9 months after the injection at the July 2013 monitoring even which was below the NMWQCC standard and then increased to 1,360 mg/L, 12 months after the injection at the October 2013 monitoring event which was above the NMWQCC standard. Fluctuations in chromium concentrations were also observed at this location and may be associated with fluctuating groundwater levels. Sulfide was not detected at this location throughout the pilot study period except after 9 months at the July 2013 monitoring event when it was detected at 2.4 mg/L and after 12 months at the October 2013 monitoring event when it was detected at 5 mg/L. These levels were at or below the analytical detection limit and, therefore, it was not necessarily an increase. The bromide concentration at this location was 5.21 mg/L prior to the injection had increased slightly 8.7 mg/L by 6 months after the injection event at the April 2013 monitoring event. By 9 months after the injection at the July 2013 monitoring event it had decreased to a non-detect level but increased again to 8.2 mg/L by the October 2013 monitoring event. These data support the conclusion discussed above that a small amount of the injected material had reached the area of well MW089SA and that the changes in the concentrations were more influenced by fluctuations in groundwater levels than by the injected material.

4.2.4 Nutrients

At injection well, IW030, concentrations of both ammonia-nitrogen and orthophosphate-phosphorus were at non-detect levels prior to the EVO injection at the September 2012 baseline monitoring event.

Orthophosphate-phosphorus remained below the detection limit throughout the pilot study period; however, concentrations of ammonia-nitrogen increased to 3.01 mg/L 6 months after the injection at the April 2013 monitoring event, decreased to 0.04 mg/L 9 months after the injection at the July 2013 monitoring event and then increased slightly to 0.1 mg/L 12 months after the injection at the October 2013 monitoring event. Ammonia-nitrogen was added as part of the EVO injection, however the data showed that it was quickly consumed indicting that the area was nitrogen limited and that the addition of more nitrogen would stimulate increased microbial activity. At monitoring wells MW009A, IW028, and MW089SA, both ammonia-nitrogen and orthophosphate-phosphorus remained below their detection limits throughout the pilot study period indicating that the ammonia-nitrogen contained in the injected amendment did not reach this well. Based on these data, additional nitrogen and phosphorus nutrients should be added with any future EVO injection.

4.2.5 Total Organic Compound (TOC)

At injection well IW030, TOC was at 5.92 mg/L prior to the EVO injection at the September 2012 monitoring event but increased to 1,800 mg/L 3 months after the injection at the January 2013 monitoring event and then decreased to 816 mg/L 6 months after the injection at the April 2013 monitoring event and 761 mg/L by 12 months after the injection at the October 2013 monitoring event. These data showed that organic carbon was introduced into the area by the EVO injection. No increase in TOC was observed at wells MW009A or IW028. At MW089SA, the pre-treatment TOC was 2.75 mg/L, which increased to 6.75 mg/L 6 months after the injection at the April 2013 monitoring event, decreased to 3.05 mg/L 9 months after the injection at the July 2013 monitoring event, and then increased again to 6.91 mg/L 12 months after the injection at the October 2013 monitoring event. These fluctuations showed the same pattern that was observed for other parameters at this well and may be associated with fluctuations in the groundwater level.

4.2.6 Pilot Study #2 Observations

- Ninety-six percent removal of chromium was observed in the area of the injection well during the pilot study period.
- Iron and sulfate data showed that reducing conditions were established in the area of the injection well.
- The bromide data showed that the injected material remained in the area of the injection well.
- The amendment increased the ammonia-nitrogen and TOC concentrations in the area of the injection well since they were both injected.
- The ammonia-nitrogen was consumed quickly indicating a possible nutrient limitation in the area.
- Reductions in chromium concentrations were not observed outside the area of the injection well, and sulfate and iron data suggested that reducing conditions were not established outside the area of the injection well.

- The bromide and TOC data showed that the injected material did not reach wells MW009A or IW028, which are located to the east of the injection well. A small amount of the injected material did reach well MW089SA, which is located to the southeast of the injection well.
- Pilot study data showed that treatment of chromium to below the 50 µg/L NMWQCC standard occurred in the area of the injection well; however, minimal dispersion occurred to the east. Some dispersion occurred up to 15 feet to the southeast of the well; however, this area did not receive sufficient amendments to create reducing conditions and to treat the chromium present.
- Monitoring parameters in well MW089SA showed a seasonal fluctuation and may be associated with fluctuations in the groundwater level

Section 5.0 Comparison with Previous Pilot Study

A pilot study for in situ treatment of chromium-impacted groundwater was conducted by Stantec at the Site July 21 through July 28, 2008. The goal of the pilot study was to convert hexavalent chromium to trivalent chromium and reduce overall total dissolved chromium concentrations by an order of magnitude to levels that approached the maximum contaminant level (MCL) of 50 µg/L. The results of the pilot study showed that although chromium concentrations were reduced in the area of the injection, clogging of the well occurred.

The fouling observed in the pilot study did not appear to be a result of well construction, as the reagent (sodium acetate) was injected successfully. The fouling observed during calcium polysulfide injection could have been caused by a combination of sulfide reactions with iron and manganese as well as precipitation of elemental sulfur. Also, calcium polysulfide is a viscous material with a high pH, which may have led to the fouling observed. For this reason, sodium dithionite was recommended for the CRA pilot study. Sodium dithionite does not increase pH and was expected to produce the less fouling.

Fouling of the wells was not observed during the CRA pilot study; therefore, the substitution of sodium dithionite for calcium polysulfide did prevent fouling. Reductions in chromium concentrations of greater than 90 percent were observed in both pilot studies, indicating that sodium dithionite and EVO are equally effective for chromium treatment as compared to calcium polysulfide and sodium acetate. The additional benefits of the reagents used in the CRA study are that sodium dithionite did not cause the well to become clogged and that EVO is biodegraded much more slowly than sodium acetate; therefore, it lasts longer in the subsurface than sodium acetate and will sustain long-term chromium treatment.

Section 6.0 Conclusions

The results of the CRA pilot study showed that the substitution of sodium dithionite for calcium polysulfide eliminated the well clogging observed during the Stantec pilot study without compromising

chromium treatment. The CRA studies also showed that both sodium dithionite and EVO were effective treatments for the conversion of $CrVI^{+}$ to $CrIII^{+}$ and the subsequent precipitation of $CrIII^{+}$ from groundwater. Both reagents treated chromium within the area of the injection wells to below the NMWQCC standard but did not treat groundwater more than 15 feet from the injection well. Based on CRA experience with in situ treatment, fifteen feet is a large radius of influence for an in situ injection, and treatment at this distance was not expected.

The doses of the reagents used in the pilot study were 5 percent sodium dithionite and 10 percent EVO. They were shown to provide effective treatment; however, based on the nutrient limitation observed in Pilot Study #2, the addition of nitrogen and phosphorus nutrients along with the EVO is recommended. Sodium dithionite is a less expensive reagent than EVO and reduced the dissolved chromium concentrations to below the NDWQCC standard for 1 month; however, EVO reduced the dissolved chromium concentrations for 3 months and sustained the treatment to concentrations below the NMWQCC standard for the remaining 9 months of the study period. Based on CRA experience with EVO, the injection is expected to sustain the reducing conditions that would favor chromium precipitation for up to 2 years. Precipitated chromium is expected to remain fixed long term. Therefore, for fast effective treatment of the source area, sodium dithionite would be the recommended reagent; however, for sustained treatment of an area where migration of additional chromium-containing groundwater is expected, EVO would be the recommended reagent. The migration of additional chromium-containing groundwater into the area was observed during the sodium dithionite study, indicating that the chosen remedy would need to accommodate the migration of untreated groundwater from upgradient into the treatment area. Therefore, EVO would be the recommended reagent for this Site.

All of Which is Respectfully Submitted,

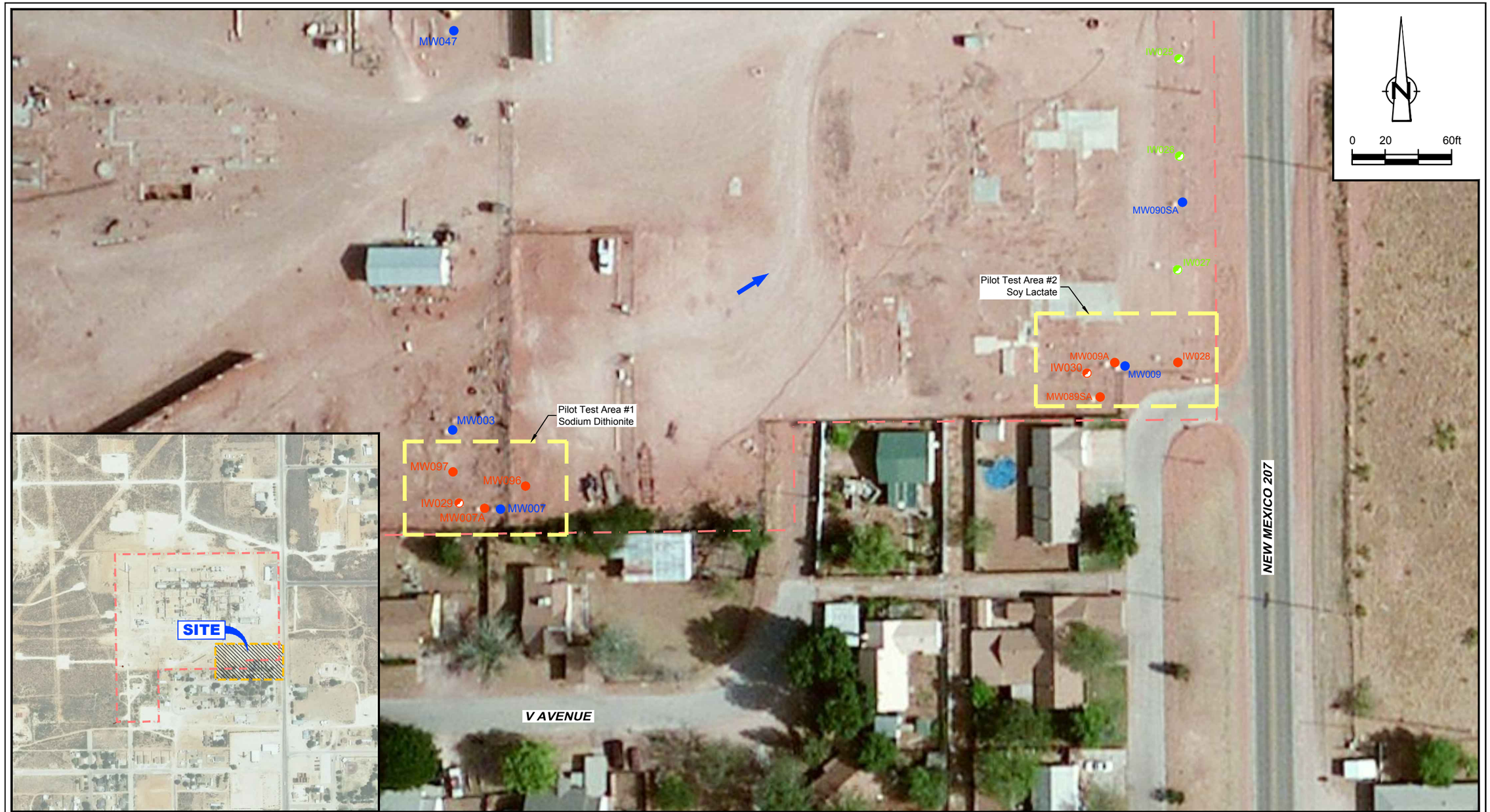
CONESTOGA-ROVERS & ASSOCIATES

Mike Wisniowiecki
Senior Project Manager

Joe Cruseturner
Principal

MW/al/9

FIGURES



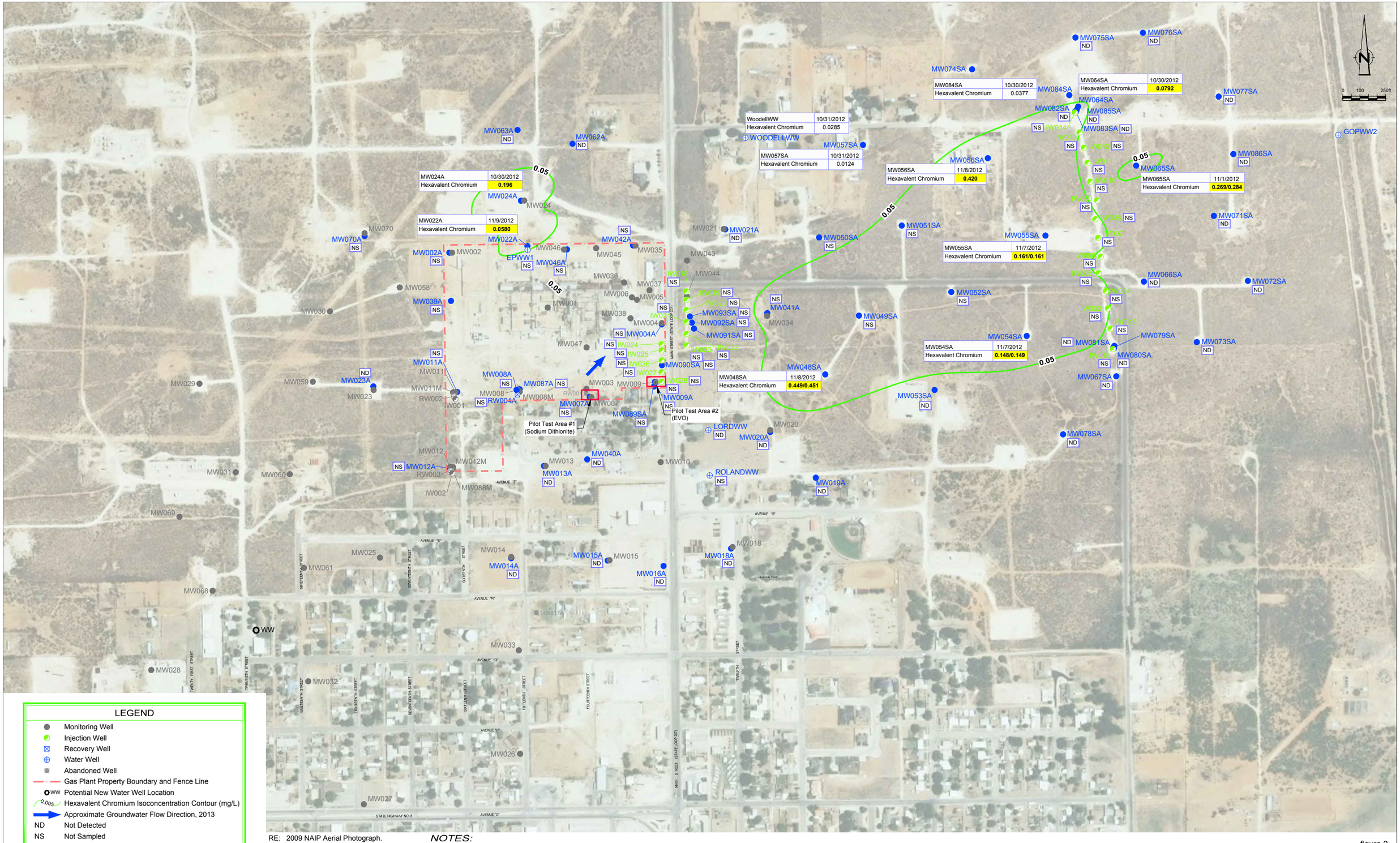
LEGEND

- Monitoring Well
- Previous Injection Well
- Pilot Test Monitor Well
- Pilot Test Injection Well
- Approximate Groundwater Flow Direction, 2013
- Gas Plant Property Boundary and Fence Line
- Pilot Test Boundary

figure 1

PILOT TEST WELL NETWORK
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

073018-00(009)GN-DL001_ MAR 3/2014



LEGEND

- Monitoring Well
- Injection Well
- Recovery Well
- Water Well
- Abandoned Well
- Gas Plant Property Boundary and Fence Line
- WW Potential New Water Well Location
- 0.005 Hexavalent Chromium Isoconcentration Contour (mg/L)
- Approximate Groundwater Flow Direction, 2013
- ND Not Detected
- NS Not Sampled

Sample ID — MW048SA | 11/8/2012 — Sample Date
Constituent — Hexavalent Chromium | 0.449/0.451 — Result (mg/L)
Parent Result (mg/L)

RE: 2009 NAIP Aerial Photograph.

NOTES:

1. All results in mg/L.
2. Highlighted cells indicate concentration exceeds NMWQCC Standards for Hexavalent Chromium of 0.05 mg/L.

figure 2

DEEP WELL CHROMIUM PLUME
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

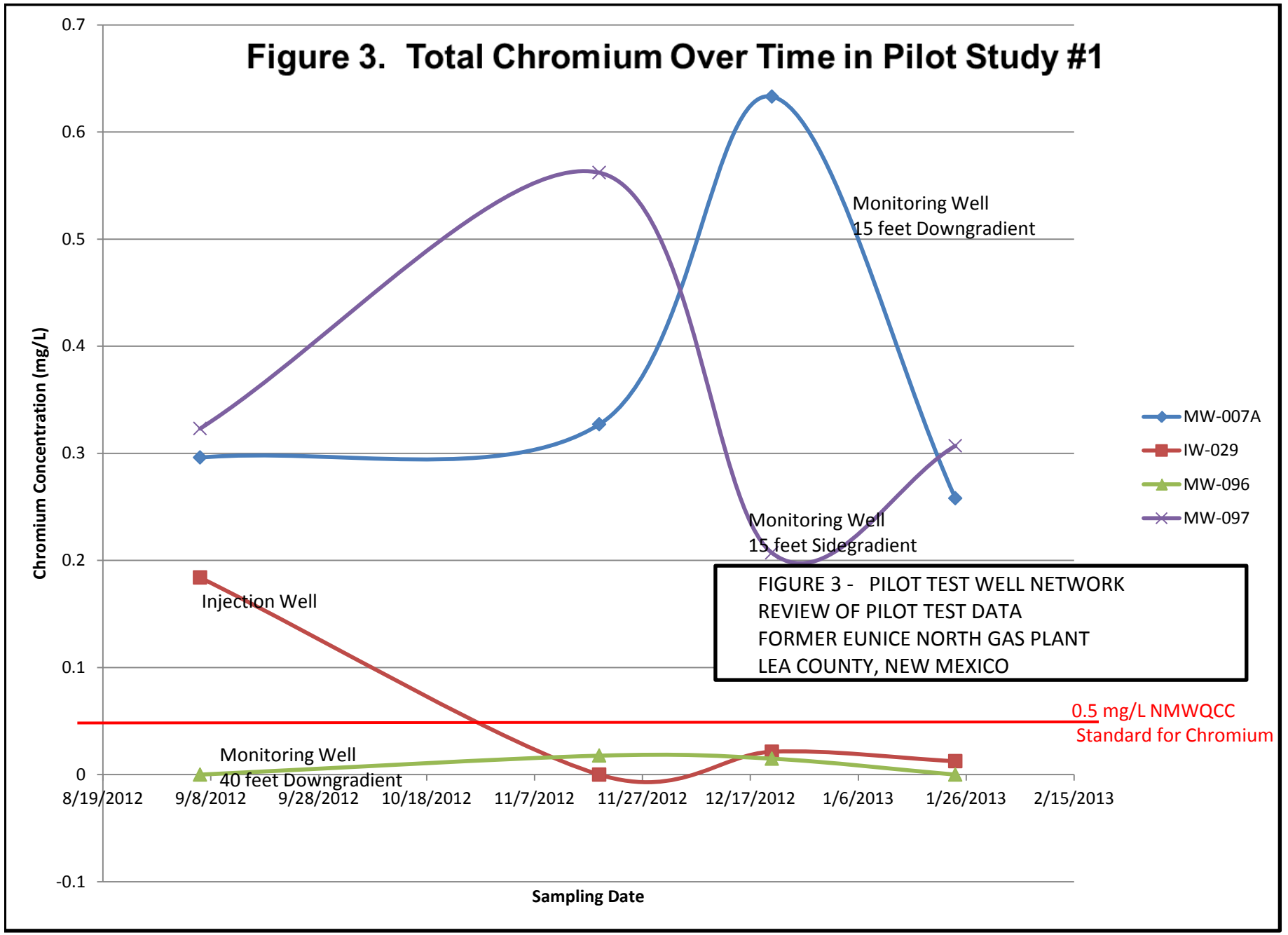


Figure 3. Total Chromium Over Time in Pilot Study #1
Chromium Concentration (mg/L)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
8/19/2012
9/8/2012
9/28/2012
10/18/2012
11/7/2012
11/27/2012
12/17/2012
1/6/2013
1/26/2013
2/15/2013
Sampling Date
Monitoring Well
15 feet Downgradient
Monitoring Well
15 feet Sidegradient
Injection Well
Monitoring Well
40 feet Downgradient
MW-007A
IW-029
MW-096
MW-097
FIGURE 3 - PILOT TEST WELL NETWORK
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
LEA COUNTY, NEW MEXICO
0.5 mg/L NMWQCC
Standard for Chromium

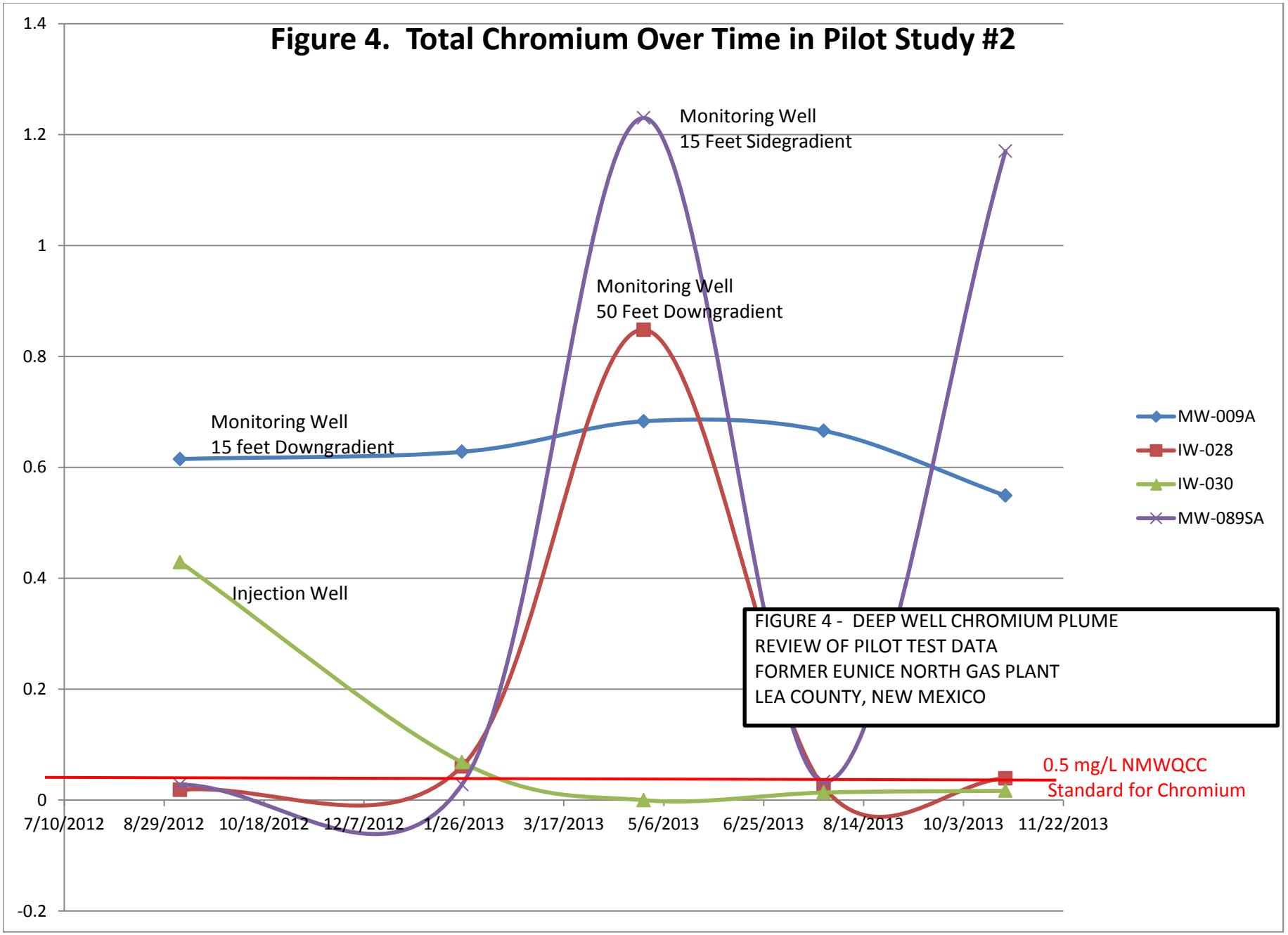


Figure 4. Total Chromium Over Time in Pilot Study #2
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
7/10/2012
8/29/2012
10/18/2012
12/7/2012
1/26/2013
3/17/2013
5/6/2013
6/25/2013
8/14/2013
10/3/2013
11/22/2013
Monitoring Well
15 Feet Sidegradient
Monitoring Well
50 Feet Downgradient
Monitoring Well
15 feet Downgradient
Injection Well
MW-009A
IW-028
IW-030
MW-089SA
FIGURE 4 - DEEP WELL CHROMIUM PLUME
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
LEA COUNTY, NEW MEXICO
0.5 mg/L NMWQCC
Standard for Chromium

TABLES

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			*448605-004*	*452802-003*	*452802-006*	*454667-004*	*456341-003*	*448605-006*
Field ID:			*MW-007A-090612*	*MW-7A-111912*	*MW-7A-(Metal Strip)*	*MW-007A-122112*	*MW-007A-012413*	*MW-009A-090612*
Date Sampled:			*9/6/2012*	*11/19/2012*	*11/19/2012*	*12/21/2012*	*1/24/2013*	*9/6/2012*
		NMWQCC Standard*						
Parameters	***Units***							
Chromium, Hexavalent by SW 7196A								
Hexavalent Chromium	mg/L	0.05	0.308	0.319		0.693	0.254	0.634
Total Metals								
Chromium	mg/L	0.05	0.296	0.327	0.305	0.633	0.258	0.615
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Sodium	mg/L	- - -	235	333	337	344	208	306
Dissolved Metals								
Iron	mg/L	1.0	ND (0.200)	ND (0.200)		ND (0.200)	ND (0.200)	ND (0.200)
Inorganic Anions								
Bromide	mg/L	- - -	7.99	5.75		4.07	6.47	11
Chloride	mg/L	- - -				641 D		
Ortho-Phosphate	mg/L	- - -	ND (1.00)					ND (1.00)
Sulfate	mg/L	600	597	815		1080 D	518	691
Nitrogen Ammonia by SM4500-NH3C								
Nitrogen, Ammonia (as N)	mg/L	- - -	ND (0.100)					ND (1.00)
Sulfide by SM4500-S-F-00								
Sulfide, Total	mg/L	- - -	ND (5.00)	ND (5.00)		ND (5.00)	ND (5.00)	ND (5.00)
TOC by SM 5310C								
Total Organic Carbon	mg/L	- - -	4.57	2.88		4.41	2.95	2.8

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			*456437-005*	*462048-003*	*467355-003*	*472775-003*	*448605-005*	*456437-004*
Field ID:			*MW-009A-012513*	*MW-009A-042613*	*MW-009A-072513*	*MW-009A-102413*	*IW-028-090612*	*IW-28-012513*
Date Sampled:			*1/25/2013*	*4/26/2013*	*7/25/2013*	*10/24/2013*	*9/6/2012*	*1/25/2013*
		NMWQCC Standard*						
Parameters	***Units***							
Chromium, Hexavalent by SW 7196A								
Hexavalent Chromium	mg/L	0.05	0.652	0.657	0.681	0.552	0.015	0.0563
Total Metals								
Chromium	mg/L	0.05	0.628	0.683	0.666	0.549	0.0185	0.0609
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Sodium	mg/L	- - -	289	282	307	287	308	389
Dissolved Metals								
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Inorganic Anions								
Bromide	mg/L	- - -	ND (1.0)	5.05	ND (8.00)	9.6	7.07	ND (1.0)
Chloride	mg/L	- - -						
Ortho-Phosphate	mg/L	- - -		ND (2.00)	ND (8.00)	ND (8.00)	ND (1.00)	
Sulfate	mg/L	600	687	808	643	611	488	754
Nitrogen Ammonia by SM4500-NH3C								
Nitrogen, Ammonia (as N)	mg/L	- - -		ND (0.100)	ND (0.100)	ND (0.100)	ND (1.00)	
Sulfide by SM4500-S-F-00								
Sulfide, Total	mg/L	- - -	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)
TOC by SM 5310C								
Total Organic Carbon	mg/L	- - -	2.84	3.13	3.37	3.47	4.57	3.99

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			*462048-001*	*467355-001*	*473427-001*	*448605-003*	*452802-003*	*454667-003*	*456341-002*
Field ID:			*IW-028-042613*	*IW-28-072513*	*IW-28-110413*	*IW-029-090612*	*IW-029-111912*	*IW-029-122179*	*IW-029-012413*
Date Sampled:			*4/26/2013*	*7/25/2013*	*11/4/2013*	*9/6/2012*	*11/19/2012*	*12/21/2012*	*1/24/2013*
		NMWQCC Standard*							
Parameters	***Units***								
Chromium, Hexavalent by SW 7196A									
Hexavalent Chromium	mg/L	0.05	0.719	0.0200	0.0302	0.126	ND (0.0100)	0.161	0.197
Total Metals									
Chromium	mg/L	0.05	0.848	0.0238	0.0394	0.184	ND (0.0500)	0.0214	0.0125
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	58.1	164	155
Sodium	mg/L	- - -	569	270	296	424	4650	4610	3580
Dissolved Metals									
Iron	mg/L	1.0	ND (0.200)	ND (0.200)		ND (0.200)	119	99.3	108
Inorganic Anions									
Bromide	mg/L	- - -	7.82	ND (4.00)	ND (8.00)	12.6	387	250	183
Chloride	mg/L	- - -						702	
Ortho-Phosphate	mg/L	- - -	ND (4.00)	ND (4.00)		ND (1.00)			
Sulfate	mg/L	600	1460	347	500	1190	4630	2930	2930
Nitrogen Ammonia by SM4500-NH3C									
Nitrogen, Ammonia (as N)	mg/L	- - -	ND (0.100)	0.0137 BJ	ND (0.100)	ND (1.00)			
Sulfide by SM4500-S-F-00									
Sulfide, Total	mg/L	- - -	ND (5.00)	4.00 J	ND (5.00)	ND (5.00)	ND (5.00)	5600	1600
TOC by SM 5310C									
Total Organic Carbon	mg/L	- - -	5.32	4.87	4.24	4.99	27.2	52.2	28.7

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			*448605-007*	*456437-002*	*462048-004*	*467355-004*	*472775-002*	*448605-008*	*456437-003*	*462048-002*
Field ID:			*IW-030-(p)090612*	*IW-030-012513*	*IW-030-042613*	*IW-30-072513*	*IW-30-102413*	*MW-089SA-090612*	*MW-89SA-012513*	*MW-0089SA-042613*
Date Sampled:			*9/6/2012*	*1/25/2013*	*4/26/2013*	*7/25/2013*	*10/24/2013*	*9/6/2012*	*1/25/2013*	*4/26/2013*
		NMWQCC Standard*								
Parameters	***Units***									
Chromium, Hexavalent by SW 7196A										
Hexavalent Chromium	mg/L	0.05	0.356	0.448	ND (0.0100)	ND (0.100)	ND (0.2)	0.027	0.0256	1.15
Total Metals										
Chromium	mg/L	0.05	0.429	0.0684	ND (0.0100)	0.0137	0.0168	0.0279	0.0298	1.23
Iron	mg/L	1.0	0.227	103	54.2	109	118	ND (0.200)	ND (0.200)	ND (0.200)
Sodium	mg/L	- - -	470	160	131	180	206	235	205	491
Dissolved Metals										
Iron	mg/L	1.0	ND (0.200)	82.9	5.29	41.6	38.3	ND (0.200)	ND (0.200)	ND (0.200)
Inorganic Anions										
Bromide	mg/L	- - -	14.9	149	112	250	291	5.21	ND (0.200)	8.7
Chloride	mg/L	- - -								
Ortho-Phosphate	mg/L	- - -	ND (1.00)		ND (0.200)	ND (8.00)	ND (8.00)	ND (1.00)		ND (4.00)
Sulfate	mg/L	600	1320	ND (10)	ND (20.0)	ND (40.00)	ND (40.00)	220	206	1560
Nitrogen Ammonia by SM4500-NH3C										
Nitrogen, Ammonia (as N)	mg/L	- - -	ND (1.00)		3.01	0.0442 BJ	0.1	ND (1.00)		ND (0.100)
Sulfide by SM4500-S-F-00										
Sulfide, Total	mg/L	- - -	ND (5.00)	ND (5.00)	ND (5.00)	ND (50.0)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)
TOC by SM 5310C										
Total Organic Carbon	mg/L	- - -	5.92	1800	816	661	761	2.75	3.00	6.75

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			*467355-002*	*472775-001*	*448605-002*	*452802-001*	*454667-001*	*456437-001*	*448605-001*	*452802-002*	*454667-002*
Field ID:			*MW-89-SA-072513*	*MW89SA-102413*	*MW-96-090612*	*MW-96-111912*	*MW-096-122112*	*MW-96-012513*	*MW-097-090512*	*MW-97-111912*	*MW-097-122112*
Date Sampled:		NMWQCC Standard*	*7/25/2013*	*10/24/2013*	*9/6/2012*	*11/19/2012*	*12/21/2012*	*1/25/2013*	*9/5/2012*	*11/19/2012*	*12/21/2012*
Parameters	***Units***										
Chromium, Hexavalent by SW 7196A											
Hexavalent Chromium	mg/L	0.05	0.0303	1.16	ND (0.0100)	ND (0.0100)	ND (0.0100)	ND (0.0100)	0.322	0.436	0.183
Total Metals											
Chromium	mg/L	0.05	0.0333	1.17	ND (0.0100)	0.0177	0.0149	ND (0.0100)	0.323	0.562	0.207
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Sodium	mg/L	- - -	213	434	183	155	144	153	375	515	571
Dissolved Metals											
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Inorganic Anions											
Bromide	mg/L	- - -	ND (4.00)	8.2	7.07	5.20	3.32	ND (0.200)	6.98	12.8	7.8
Chloride	mg/L	- - -					205				930 D
Ortho-Phosphate	mg/L	- - -	ND (4.00)	ND (8.00)	ND (1.00)				ND (0.200)		
Sulfate	mg/L	600	187	1360	398	407	306	318	769	1360	1610 D
Nitrogen Ammonia by SM4500-NH3C											
Nitrogen, Ammonia (as N)	mg/L	- - -	ND (0.100)	ND (0.100)	0.101				0.164		
Sulfide by SM4500-S-F-00											
Sulfide, Total	mg/L	- - -	2.4	5.00	ND (5.00)	ND (5.00)	ND (5.00)	ND (50.0)	ND (5.00)	ND (5.00)	ND (5.00)
TOC by SM 5310C											
Total Organic Carbon	mg/L	- - -	3.05	6.91	2.75	1.66	1.84	1.47	1.12	4.90	6.71

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			*456341-001*	*448605-009*	*452802-005*	*454667-005*	*462048-005*	*467355-005*	*456341-004*
Field ID:			*MW-097-012413*	*Dup-10-90612*	*Dup-1-111912*	*Dup-1-122112*	*DUP-1-042613*	*DUP-1-072513*	*Dup*
Date Sampled:			*1/24/2013*	*9/6/2012*	*11/19/2012*	*12/21/2012*	*4/26/2013*	*7/25/2013*	*1/24/2013*
		NMWQCC Standard*							
Parameters	***Units***								
Chromium, Hexavalent by SW 7196A									
Hexavalent Chromium	mg/L	0.05	0.272	0.125	ND (0.0100)	0.18	0.757	0.0191	0.164
Total Metals									
Chromium	mg/L	0.05	0.307	0.185	ND (0.0500)	0.213	0.786	0.0221	0.182
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	167	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Sodium	mg/L	- - -	635	427	5660	598	534	242	602
Dissolved Metals									
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	217	ND (0.200)	ND (0.200)	ND (0.200)	ND (0.200)
Inorganic Anions									
Bromide	mg/L	- - -	18.4	12.3	462	10.3	5.45	ND (4.00)	14.1
Chloride	mg/L	- - -				964 D			
Ortho-Phosphate	mg/L	- - -		ND (1.00)			ND (2.00)	ND (4.00)	
Sulfate	mg/L	600	1590	1200	4640	1570 D	1500	339	1570
Nitrogen Ammonia by SM4500-NH3C									
Nitrogen, Ammonia (as N)	mg/L	- - -		ND (1.00)			ND (0.100)	ND (0.100)	
Sulfide by SM4500-S-F-00									
Sulfide, Total	mg/L	- - -	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	3.2	ND (5.00)
TOC by SM 5310C									
Total Organic Carbon	mg/L	- - -	6.33	5.05	17.4	6.86	5.92	5.39	6.36

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

TABLE 1

FIELD PILOT STUDY MONITORING DATA
REVIEW OF PILOT TEST DATA
FORMER EUNICE NORTH GAS PLANT
NEW MEXICO

Lab ID:			***456437-006***	***456437-007***	***456437-008***
Field ID:			***DUP2012513***	***Metal QC1 (MW96)***	***IW28 Metal QC2***
Date Sampled:			***1/25/2013***	***1/25/2013***	***1/25/2013***
		NMWQCC Standard*			
Parameters	***Units***				
Chromium, Hexavalent by SW 7196A					
Hexavalent Chromium	mg/L	0.05	0.0556		
Total Metals					
Chromium	mg/L	0.05	0.0598	ND (0.0100)	0.0608
Iron	mg/L	1.0	ND (0.200)	ND (0.200)	ND (0.200)
Sodium	mg/L	- - -	381	152	381
Dissolved Metals					
Iron	mg/L	1.0	ND (0.200)		
Inorganic Anions					
Bromide	mg/L	- - -	ND (1.0)		
Chloride	mg/L	- - -			
Ortho-Phosphate	mg/L	- - -			
Sulfate	mg/L	600	738		
Nitrogen Ammonia by SM4500-NH3C					
Nitrogen, Ammonia (as N)	mg/L	- - -			
Sulfide by SM4500-S-F-00					
Sulfide, Total	mg/L	- - -	ND (5.00)		
TOC by SM 5310C					
Total Organic Carbon	mg/L	- - -	4.05		

Notes: * - New Mexico Water Quality Control Commission (NMWQCC) Standards 20.6.2.3103.A

Highlighting indicates values exceeds NMWQCC Standards

D - Samples were diluted due to targets detected over the highest point of the calibration curve, or due to the matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

B - A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

J - The target analyte was positively identified below the quantitation limit and above the detection limit.

Appendix A

Discharge Permit

DISCHARGE PERMIT GW-004

1. GENERAL PROVISIONS:

A. PERMITTEE AND PERMITTED FACILITY: The Oil Conservation Division (OCD) of the Energy, Minerals and Natural Resources Department issues Discharge Permit GW-004 (Discharge Permit) to Chevron U.S.A., Inc. (Owner/Operator), located at 1400 Smith Street, Houston, Texas 77002 to abate ground water and vadose zone contamination at its Eunice North Gas Plant (Facility) located at State Highway 207 (Eunice-Hobbs Highway) Eunice, New Mexico 88231 in the NE/4 of the SE/4 of Section 28, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.

As a result of historical operations at the site, Chevron is proposing to remediate chromium contaminated ground water by injecting 5 percent solution of sodium dithionite and/or a 10 percent soy lactate solution in injection wells to remediate contaminated ground water. Chevron will mix 2800 gallons fresh water with a five percent solution of sodium dithionite and/or mix 2800 gallons fresh water with ten percent soy lactate solution to generate a solution which will then be discharged into the Ogallala aquifer. The ground water will be sampled to determine the effectiveness of the discharged solution to remediate the chromium contamination. The depth to ground water in the Ogallala aquifer is 37 to 73 feet below the surface and the background total dissolved solids concentration is approximately 1,200 mg/L. The discharge plan specifies that Chevron will remediate contaminated ground at the site to meet the standards specified in the Water Quality Control Commission regulations (20.6.2.3103 NMAC).

B. SCOPE OF PERMIT: OCD has been granted authority to administer the Water Quality Act (Chapter 74, Article 6 NMSA 1978) as it applies to gas processing plants by statute and by delegation from the Water Quality Control Commission pursuant to Section 74-6-4(E) NMSA 1978.

The Water Quality Act and the rules issued under that Act protect ground water and surface water of the State of New Mexico by providing that, unless otherwise allowed by rule, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless such discharge is pursuant to an approved discharge plan. See 20.6.2.3104 NMAC and 20.6.2.3106 NMAC.

This Discharge Permit does not authorize any treatment of, or on-site disposal of, any materials, product, by-product, or oil field waste, including, but not limited to, the on-site disposal of lube oil, glycol, antifreeze, filters, elemental sulfur, washdown water, contaminated soil, and cooling tower blowdown water.

This Discharge Permit does not convey any property rights of any sort nor any exclusive privilege, and does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state, federal, or local laws, rules or regulations.

The Owner/Operator shall operate in accordance with the Discharge Permit conditions to comply with the Water Quality Act and the rules issued pursuant to that Act, so that neither a hazard to public health nor undue risk to property will result (see 20.6.2.3109C NMAC); so that no discharge will cause or may cause any stream standard to be violated (see 20.6.2.3109H(2) NMAC); so that no discharge of any water contaminant will result in a hazard to public health, (see 20.6.2.3109H(3) NMAC); and so that the numerical standards specified of 20.6.2.3103 NMAC are not exceeded.

The Owner/Operator shall not allow or cause water pollution, discharge, or release of any water contaminant that exceeds the Water Quality Control Commission (WQCC) standards specified at 20.6.2.3101 NMAC and 20.6.2.3103 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams).

C. DISCHARGE PERMIT CONDITIONS: By signing this Discharge Permit, the Owner/Operator agrees to the specific provisions set out in this document, and the commitments made in the approved Discharge Plan Application and the attachments to that application, which are incorporated into the Discharge Permit by reference.

If this Discharge Permit is a permit renewal, it replaces the permit being renewed. Replacement of a prior permit does not relieve the Owner/Operator of its responsibility to comply with the terms of that prior permit while that permit was in effect.

D. DEFINITIONS: Terms not specifically defined in this Discharge Permit shall have the same meanings as those in the Water Quality Act or the rules adopted pursuant to that Act, as the context requires.

E. FILING FEES AND PERMIT FEES: Pursuant to 20.6.2.3114 NMAC, every facility that submits a discharge permit application for initial approval or renewal shall pay the permit fees specified in Table 1 and the filing fee specified in Table 2 of 20.6.2.3114 NMAC. OCD has already received the required $100.00 filing fee for this application. The flat fee for "Abatement of Ground Water and Vadose Zone Contamination at Oil and Gas Sites" is $2,600.00. The Owner/Operator shall submit this amount along with the signed Discharge Permit. Checks should be payable to the **"New Mexico Water Quality Management Fund,"** not the Oil Conservation Division.

F. EFFECTIVE DATE, EXPIRATION, RENEWAL CONDITIONS, AND PENALTIES FOR OPERATING WITHOUT A DISCHARGE PERMIT: This Discharge Permit is effective when the Division's Environmental Bureau receives the signed Discharge Permit from the Owner/Operator and the $2,600.00 fee. This Discharge Permit will expire on March 16, 2016. The Owner/Operator shall submit an application for renewal no later than 120 calendar days before that expiration date, pursuant to 20.6.2.3106F NMAC. If an Owner/Operator submits a renewal application at least 120 calendar days before the Discharge Permit expires and is in compliance with the approved Discharge Permit, then the existing Discharge Permit will not expire until OCD has approved or disapproved the renewal application. Operating with an expired Discharge Permit may subject the Owner/Operator to

civil and/or criminal penalties. See Section 74-6-10.1 NMSA 1978 and Section 74-6-10.2 NMSA 1978.

G. MODIFICATIONS: The Owner/Operator shall notify the Division's Environmental Bureau of any facility expansion, production increase, or process modification that would result in any significant modification in the discharge of water contaminants. See 20.6.2.3107C NMAC. The Division's Environmental Bureau may require the Owner/Operator to submit a permit modification pursuant to 20.6.2.3109E NMAC and may modify or terminate a permit pursuant to Section 74-6-5(M) through (N) NMSA 1978.

H. TRANSFER OF DISCHARGE PERMIT: Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of the Facility, the transferor shall notify the transferee in writing of the existence of the Discharge Permit, and shall deliver or send by certified mail to the Division's Environmental Bureau a copy of such written notification, together with a certification or other proof that such notification has been received by the transferee pursuant to 20.6.2.3111 NMAC. Upon receipt of such notification, the transferee shall inquire into all of the provisions and requirements contained in the Discharge Permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the Division's file or files concerning the Discharge Permit. Upon assuming either ownership or possession of the Facility the transferee shall have the same rights and responsibilities under the Discharge Permit as were applicable to the transferor. See 20.6.2.3111 NMAC.

Transfer of the ownership, control, or possession of the Facility does not relieve the transferor of responsibility or liability for any act or omission which occurred while the transferor owned, controlled, or was in possession of the Facility. See 20.6.2.3111E NMAC.

I. CLOSURE PLAN AND FINANCIAL ASSURANCE: The Owner/Operator shall notify the Division's Environmental Bureau in writing when any operations of its Facility are to be discontinued for a period in excess of six months. Upon review of the Owner/Operator's notice, the Division's Environmental Bureau will determine whether to modify this permit pursuant to 20.6.2.3107 NMAC and 20.6.2.3109E NMAC or to require the Owner/Operator to submit a closure plan and/or post-closure plan, including financial assurance.

J. COMPLIANCE AND ENFORCEMENT: If the Owner/Operator violates or is violating a condition of this Discharge Permit, the Division's Environmental Bureau may issue a compliance order requiring compliance immediately or within a specified time period, suspending or terminating this Discharge Permit, and/or assessing a civil penalty. See Section 74-6-10 NMSA 1978. The Division's Environmental Bureau may also commence a civil action in district court for appropriate relief, including injunctive relief. See Section 74-6-10(A)(2) NMSA 1978 and Section 74-6-11 NMSA 1978. The Owner/Operator may be subject to criminal penalties for discharging a water contaminant without a discharge permit or in violation of a condition of a discharge permit; making any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the Water Quality Act; falsifying, tampering with

or rendering inaccurate any monitoring device, method or record required to be maintained under the Water Quality Act; or failing to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation. See Section 74-6-10.2 NMSA 1978.

2. GENERAL FACILITY OPERATIONS:

A. OPERATIONAL MONITORING: The Owner/Operator shall comply with its approved monitoring programs pursuant 20.6.2.3107 NMAC.

1. Ground Water Monitoring System: The Owner/Operator shall monitor and sample all ground water monitor wells in accordance with its approved ground water abatement program, including the monitor wells for the hydrocarbon plume, the chloride plume, and the chromium plume.

2. Installation of Monitor Wells Near Injection Wells IW023 and IW024:

a. The Owner/Operator shall install three monitor wells near Injection Well IW023 and three monitor wells near Injection Well IW024 in accordance with its renewal application of December 6, 2010.

b. The Owner/Operator shall monitor the near monitor wells to determine whether it has achieved its primary objectives as specified in its renewal application of December 6, 2010.

3. Dithionite Injection Pilot Study Monitoring

a. Field Monitoring: During the injection, the Owner/Operator shall monitor the three monitoring wells hourly for pH, DO, ORP, conductivity, and temperature.

b. Post-Injection Monitoring and Sampling: The Owner/Operator shall sample the three monitor wells and IW023 monthly for 3 months after the injection, using the injection and monitoring wells, to evaluate the effectiveness of the sodium dithionite treatment. Ground water samples will be collected and analyzed for total and hexavalent chromium, bromide, sulfate, sulfide, total organic carbon, sodium, total and dissolved iron, and field parameters (pH, temperature, conductivity, DO and ORP).

4. Biodegradation Pilot Study

a. Baseline Sampling: Prior to the injection of a soy-lactate solution, the Owner/Operator shall sample and analyze IW023 and the three monitoring wells for total and hexavalent chromium, sulfate, sulfide, ammonia-nitrogen, orthophosphate-phosphorus, total anaerobic microbial counts, total organic carbon, total and dissolved iron, and field parameters (pH, temperature, conductivity, DO, and ORP).

b. Field Monitoring: During the injection, the Owner/Operator shall monitor the three monitor wells hourly for pH, DO, ORP, conductivity, and temperature.

c. Post -Injection Monitoring and Sampling: The Owner/Operator shall sample the IW024 and the three monitoring wells to evaluate the treatment effectiveness. Ground water samples will be collected for successive quarters after the injection event and analyzed for total and hexavalent chromium, sulfate, sulfide, ammonia -nitrogen, orthophosphate - phosphorus, total anaerobic microbial counts, total organic carbon, total and dissolved iron, and field parameters (pH, temperature, conductivity, DO, and ORP).

B. CONTINGENCY PLANS: The Owner/Operator shall implement its approved Contingency Plans to cope with failure of the discharge permit or system in accordance with Permit Condition 2.F.

C. CLOSURE PLAN: After completing abatement of all ground water and vadose contamination required under Permit Condition 2.G, the Owner/Operator shall perform the following closure measures:

1. Remove or plug all lines leading to and from ground water recovery or injection wells so that a discharge can no longer occur.

2. Remove all abatement system components from the site, if applicable.

3. After receiving notification from the Division's Environmental Bureau that post-closure monitoring may cease, the Owner/Operator shall plug and abandon its monitor well(s).

D. RECORD KEEPING: The Owner/Operator shall maintain records of all inspections required by this Discharge Permit at its local office located at 240 Avenue O, Eunice, NM 88231 for a minimum of five years and shall make those records available for inspection by the Division's Environmental Bureau.

E. RELEASE REPORTING: The Owner/Operator shall comply with the following permit conditions, pursuant to 20.6.2.1203 NMAC, if it determines that a release of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, has occurred. The Owner/Operator shall report unauthorized releases of water contaminants in accordance with any additional commitments made in its approved Contingency Plan. If the Owner/Operator determines that any constituent exceeds the standards specified at 20.6.2.3103 NMAC, then it shall report a release to the Division's Environmental Bureau.

1. Oral Notification: As soon as possible after learning of such a discharge, but in no event more than twenty-four (24) hours thereafter, the Owner/Operator shall orally notify the Division's Environmental Bureau. The Owner/Operator shall provide the following:

- the name, address, and telephone number of the person or persons in charge of the facility, as well as of the Owner/Operator of the facility;
- the name and location of the facility;

- the date, time, location, and duration of the discharge;
- the source and cause of discharge;
- a description of the discharge, including its chemical composition;
- the estimated volume of the discharge; and,
- any actions taken to mitigate immediate damage from the discharge.

2. **Written Notification:** Within one week after the Owner/Operator has learned of the discharge, the Owner/Operator shall send written notification to the Division's Environmental Bureau verifying the prior oral notification as to each of the foregoing items and providing any appropriate additions or corrections to the information contained in the prior oral notification.

F. ABATEMENT PLAN: Pursuant to 20.6.2.4105A(6) NMAC, an Owner/Operator is exempt from the requirement to obtain and implement an Abatement Plan, as required in 20.6.2.4104 NMAC. However, an Owner/Operator's Discharge Permit must address abatement of contaminated ground water and be consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, Subsections C and E of Section 20.6.2.4106, Sections 20.6.2.4107 and 20.6.2.4112 NMAC.

1. **Purpose of Abatement Plan:** The Owner/Operator shall abate polluted ground water so as to either remediate or protect the ground water for use as domestic and agricultural water supply.

2. **Abatement Standards and Requirements:** The Owner/Operator shall abate the vadose zone so that water contaminants in the vadose zone shall not contaminate ground water or surface water, through leaching, percolation or as the water table elevation fluctuates. The Owner/Operator, where the Total Dissolved Solids concentration is 10,000 mg/L or less, shall abate contaminated ground water so that toxic pollutant(s), as defined in 20.6.2.7WW NMAC, shall not be present and so that the standards of 20.6.2.3103 NMAC shall be met.

3. **Ground Water Abatement:** The Owner/Operator shall implement its approved ground water abatement program until it has remediated the contaminated ground water to meet the standards and requirements set forth in 20.6.2.4103 NMAC.

4. **Completion and Termination:** Pursuant to 20.6.2.4112 NMAC, abatement shall be considered complete when the standards and requirements specified in 20.6.2.4103 NMAC are met. At that time, the Owner/Operator shall submit an abatement completion report, documenting compliance with the standards and requirements set forth in 20.6.2.4103 NMAC and this Discharge Permit, to Division's Environmental Bureau for approval. The abatement completion report also shall propose any changes to long term monitoring and site maintenance activities, if needed, to be performed after termination of the abatement plan.

G. OTHER REQUIREMENTS:

1. Inspection and Entry: Pursuant to 20.6.2.4107A NMAC, the Owner/Operator shall allow the Division's Environmental Bureau, upon the presentation of proper credentials, to:

- enter the facility at reasonable times;
- inspect and copy records required by this discharge permit;
- inspect any treatment works, monitoring, and analytical equipment;
- sample any wastes, ground water, surface water, stream sediment, plants, animals, or vadose-zone material including vadose-zone vapor;
- use the Owner/Operator's monitoring systems and wells in order to collect samples; and
- gain access to off-site property not owned or controlled by the Owner/Operator, but accessible to the Owner/Operator through a third-party access agreement, provided that it is allowed by the agreement.

2. Advance Notice: Pursuant to 20.6.2.4107B NMAC, The Owner/Operator shall provide the Division's Environmental Bureau with at least four (4) working days advance notice of any sampling to be performed pursuant to this Discharge Permit, or any well plugging, abandonment or destruction at the facility site.

3. Plugging and Abandonment: Pursuant to 20.6.2.4107C NMAC, the Owner/Operator shall request by certified mail, approval by the Division's Environmental Bureau to plug and abandon a monitor well, unless such approval is required from the State Engineer. The proposed action shall be designed to prevent water pollution that could result from water contaminants migrating through the well or borehole. The proposed action shall not take place without written approval from the Division's Environmental Bureau, unless written approval or disapproval is not received by the Owner/Operator within thirty (30) days of the date of receipt of the proposal.

H. ANNUAL REPORT: The Owner/Operator shall submit its annual report for each calendar year pursuant to 20.6.2.3107 NMAC to the Division's Environmental Bureau by March 15th of the following year. The annual report shall include the following:

1. Results of its ground water monitoring program; including:

- summary tables listing laboratory analytic results of all ground water and soil samples. Any WQCC constituent found to exceed the groundwater standard shall be highlighted and noted in the annual report. Copies of the most recent year's laboratory analytical data sheets shall also be submitted.
- annual water table potentiometric maps. A corrected water table elevation shall be determined for all wells containing non-aqueous phase liquids. These maps shall show well locations, pertinent site features, and the direction and magnitude of the hydraulic gradient.
- semi-annual isopleth maps for the following constituents: non-aqueous phase liquids; chlorides; chromium; and, BTEX.

- semi-annual geologic cross-sections (both dip and strike), using the geologic/lithologic logs from the monitor, recovery, and injection wells, depicting the concentrations for the following constituents: non-aqueous phase liquids; chlorides; chromium; and, BTEX.
- estimate or measure of the volume of the solutions discharged during each quarter and the total volume discharged to date.

2. Summary of any releases and corrective actions taken in accordance with its approved Contingency Plan.

3. CLASS V WELLS: Pursuant to 20.6.2.5002B NMAC, leach fields and other wastewater disposal systems at Division-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are UIC Class V injection wells, including ground water management wells. This Discharge Permit does not authorize the use of a Class V injection well for the disposal of industrial waste at the Facility. Pursuant to 20.6.2.5005 NMAC, the Owner/Operator shall close any Class V industrial waste injection wells at its Facility that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes (*e.g.,* septic systems, leach fields, dry wells, *etc.*) other than the injection remediation wells within 90 calendar days of the issuance of this Discharge Permit. The Owner/Operator shall document the closure of any Class V wells used for the disposal of non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes other than contaminated ground water in its Annual Report.

Other Class V wells, including wells used only for the injection of domestic wastes, must be permitted by the New Mexico Environment Department.

4. SCHEDULE OF COMPLIANCE:

A. PERMIT CERTIFICATION: The Owner/Operator shall sign and return this Permit to the Division's Environmental Bureau within 45 days of its receipt of this Permit.

B. SUBMISSION OF THE PERMIT FEES: As specified in Permit Condition 1.F, the Owner/Operator shall submit the fee of $2,600.00 along with the signed Discharge Permit within 45 days of the receipt of the Discharge Permit. Checks should be payable to the **"New Mexico Water Quality Management Fund,"** not the Oil Conservation Division.

C. ANNUAL REPORT: As specified in Permit Condition 2.H, the Owner/Operator shall submit its annual report to the Division's Environmental Bureau by March 15th of the following year.

5. CERTIFICATION: (OWNER/OPERATOR) by the officer whose signature appears below, acknowledges receipt of this Discharge Permit, and has reviewed its terms and conditions.

Chevron U.S.A. Inc

Company Name - print name

Robert A. Guldner

Company Representative - print name

Company Representative - Signature

Title: Manager OE/HBS

Date: 01/23/2012

Appendix B

Analytical Reports

B&A Laboratories, Inc.
10650 Culebra Rd., Suite 104-154
San Antonio, TX 78251-4949
Ph: (210) 509-3334 Fax (210) 509-3335
Houston - Dallas - San Antonio - Odessa
Tampa - Atlanta - Phoenix

281680

Invoice No. 281680

Client Information		Invoice Information	
Invoice to:	**Conestoga Rovers & Associates**	**Invoice Date:**	09/17/2012
Contact:	Claudia Ramos	**Due Date:**	10/17/2012
Address:	2135 S Loop 250 W Midland, TX 79703	**Terms:**	30 Days
Project Name:	North Eunice	**PO #:**	4051255
Project #:	073018	**Lab PM:**	Nicholas Straccione

Comments:

Products / Services	WO Number	Matrix	TAT	Qty	Price	Ext. Price
Chromium, Hexavalent by SW 7196A	448605	Water	5 Day TAT	9	25.00	$225.00
Total Metals by EPA 6010B	448605	Water	5 Day TAT	9	30.00	$270.00
Dissolved Metals per ICP by SW846 6010B	448605	Water	5 Day TAT	9	8.00	$72.00
Inorganic Anions by EPA 300/300.1	448605	Water	5 Day TAT	9	40.00	$360.00
TOC by SM 5310C	448605	Water	5 Day TAT	9	35.00	$315.00
Sub-Total anerobic bacteria	448605	Water	5 Day TAT	9	35.00	$315.00
Sulfide by SM4500-S-F-00	448605	Water	5 Day TAT	9	40.00	$360.00
Nitrogen Ammonia by SM4500-NH3C	448605	Water	5 Day TAT	9	35.00	$315.00

Total: $2,232.00

Please detach this portion and return with your payment

Client Information		Invoice Information: 281680	
Client:	**Conestoga Rovers & Associates**	**Work Order Number:**	448605
Contact:	Claudia Ramos	**Due Date:**	10/17/2012
Terms:	30 Days	**Invoice Amount:**	$2,232.00
PO #:	4051255	**Amount Remitted:**	

Past Due Invoices are subject to a 1.5% per Month service charge, plus collection fees.

Please send your payments to: Xenco Laboratories, Inc.
10650 Culebra Rd., Suite 104-154,
San Antonio, Texas 78251-4949
Houston - Dallas - San Antonio - Odessa
Tampa - Atlanta

Make checks payable or Credit Card payments to B&A Laboratories, Inc.

visit our webpage at **www.xenco.com**

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Mike W.
Company Name: CRA
Company Address: 2135 W Loop 250N
City/State/Zip: Midland, TX 79703
Telephone No: 432-686-0086 Fax No: 432-686-0186
Sampler Signature: Justin Nixon e-mail:

Project Name: North Eunice
Project #: 073018
Project Loc: Eunice, NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 448605

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW=Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TOTAL: TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW07 090512			9.5.12	1535			X																				

Special Instructions: read attached ssow

Relinquished by:	Date	Time	Received by:	Date	Time
	8-6-12	214			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Shawnee Smith	8-6-12	14:14

Laboratory Comments:

Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	(Y)	N
Labels on container(s)	Y	N
Custody seals on container(s)	(Y)	N
Custody seals on cooler(s)	(Y)	N
Sample Hand Delivered	(Y)	N

by Sampler/Client Rep. ? by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 1.5 °C

CRA Simplified Scope of Work (SSOW)/Laboratory Services Purchase Order

SSOW Ref. Code
073018_20120823

Project Name: Chevron-North Eunice
Phase/Study Title: Baseline Sampling
CRA Project No./Phase/Task: 073018
Event Description: Pilot Test - GW Sampling
Project Location: Eunice, New Mexico

Item	Sample Matrix	Analytical Parameters	Analytical Methods	Holding Time	Unit Prices	Applicable Surcharge Multiplier (1)	Extended Prices	Estimated Sample Qty/Event	Field QC Samples: MS	MSD	Lab Dup	Trip Blk	RBlk	Fld Dup	Other	Total Sample Qty.	Billable Samples	Estimated Cost/Event
1	water	Total, Chromium, Iron, Sodium	SW-846 6010B	180 days	$ 30.00	1.00	$ 30.00	8				2		2		12	12	$360.00
2	water	Hexavalent Chromium	SW-846 7196A	24 hours	$ 25.00	1.00	$ 25.00	8						2		10	10	$250.00
3	water	Anions (SO4, Br)	E 300	28 days	$ 40.00	1.00	$ 40.00	8						2		10	10	$400.00
4	water	Sulfide	SM4500	7 days	$ 40.00	1.00	$ 40.00	8						2		10	10	$400.00
5	water	Ammonia-Nitrogen	SM4500	28 days	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
6	water	Total Organic Carbon TOC	SM5310	28 days	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
7	water	Orthophosphate-phosphorus	E300	48 hrs	$ 14.00	1.00	$ 14.00	8						2		10	10	$140.00
8	water	Total Anaerobic Microbial Count		24 hrs	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
9	water	Dissolved Iron	SW-846 6010B	180 days	$ 10.00	1.00	$ 10.00	8						2		10	10	$100.00

(1) Explanation of Surcharges:

Estimated Event Subtotal:	$2,700.00
Laboratory Surcharge(s):	$0.00
Estimated Event Total Costs:	$2,700.00

Lab Contracting Summary:

Governing Terms and Conditions

- ☐ **Master Agreement Number:**
- ☑ **Exhibit "A" Terms and Conditions**
- ☐ **Client Contract**

CRA Purchase Order Number:	4051255
Name of Client:	
Other Additional Insureds:	
Governing Law:	Texas
Currency:	US
Address Invoice to:	CRA c/o Claudia Ramos 6320 Rothway, Suite 100 Houston, TX 77040

Claudia Ramos — 8/23/2012
(authorized CRA signature) (date signed)

Nick Straccione — 8/23/2012
(authorized Vendor signature) (date signed)

Typed name constitutes authorized signature.

Vendor to provide and deliver all items or services set out or otherwise described below subject to the governing terms and conditions checked above. This Purchase Order expressly limits acceptance to such terms and conditions. Any additional or different terms proposed by Vendor are rejected unless expressly agreed to in writing by CRA. To accept this Purchase Order, Vendor must sign, date, and return one copy of this page to issuer before starting any work. CRA's receipt of Signature of this Purchase Order may be sent by facsimile (with confirmation by transmitting machine) and/or transmitted by portable document file (PDF) which shall be treated as an original signature, and any such signature, facsimile, PDF file, or copy of this signed Purchase Order shall be valid as an original and shall be binding as if it were the original. Show Purchase Order No. on all correspondence, insurance certificates, invoices, and delivery papers.

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Mike Wisniowiecki

Company Name: CRA

Company Address: 2135 S Loop 250 N

City/State/Zip: Midland, TX 79703

Telephone No: 432-686-0086 Fax No: 432-686-0186

Sampler Signature:

e-mail: MWisniowieck@CRAworld.com

Project Name: North Eunice

Project #: 073018

Project Loc: Eunice, NM

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

↳ can we combine results w/ COC turned in on 9.6.12 for North Eunice Also.

(lab use only) ORDER #: 448648 5

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW=Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	TOTAL: Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
02	MW 6 090612			9-6-12	0930		6	X																				X
03	IW 02 090612			9-6-12	1030		6	X																				X
04	MW 07A 090612			9-6-12	1130		6	X																				X
05	FW 02 8090612			9-6-12	1240		6	X																				X
06	MW 09A 090612			9-6-12	1330		6	X																				X
07	IW 030(P) 090612			9-6-12	1410		6	X																				X
08	MW 089SA 090612			9-6-12	1505		6	X																				X
09	Dup 090612																											

Special Instructions:
See Attached SSOW for analyses. Copy of COC turned in on 9.6.12 also attached. Can we put both into one report.

Relinquished by:	Date	Time	Received by:	Date	Time
	9-7-12	0830			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				9/7/12	8:30

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 3.5 2.0

Analytical Report 448605

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

North Eunice

073018

17-SEP-12

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

17-SEP-12

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **448605**
North Eunice
Project Address: Eunice, NM

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 448605. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 448605 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 448605

Conestoga Rovers & Associates, Midland, TX

North Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW047 090512	W	09-05-12 15:35		448605-001
MW96090612	W	09-06-12 09:30		448605-002
IW029090612	W	09-06-12 10:30		448605-003
MW007A090612	W	09-06-12 11:30		448605-004
IW028090612	W	09-06-12 12:40		448605-005
MW009A090612	W	09-06-12 13:30		448605-006
IW030(p)090612	W	09-06-12 14:10		448605-007
MW0895A090612	W	09-06-12 15:05		448605-008
Dup1090612	W	09-06-12 00:00		448605-009

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates

Project Name: North Eunice

Project ID:	*073018*	*Report Date:*	*17-SEP-12*
Work Order Number:	*448605*	*Date Received:*	*09/06/2012*

Sample receipt non conformances and comments:

Samples #2-9 (received 09-07) were taken to the lab by the client one day after sample#1 (received 09-06)

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-896116 Inorganic Anions by EPA 300/300.1
E300

Batch 896116, Ortho-Phosphate recovered below QC limits
Samples affected are: 448605-001.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Batch: LBA-896119 Inorganic Anions by EPA 300/300.1
E300

Batch 896119, Ortho-Phosphate recovered below QC limits
Samples affected are: 448605-004, -002, -003.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Batch: LBA-896120 Inorganic Anions by EPA 300/300.1
E300

Batch 896120, Ortho-Phosphate recovered below QC limits in the Matrix Spike.
Samples affected are: 448605-007, -006, -009, -005, -008.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 17-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	448605-001		448605-002		448605-003		448605-004		448605-005		448605-006	
	Field Id:	MW047 090512		MW96090612		IW029090612		MW007A090612		IW028090612		MW009A090612	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Sep-05-12 15:35		Sep-06-12 09:30		Sep-06-12 10:30		Sep-06-12 11:30		Sep-06-12 12:40		Sep-06-12 13:30	
Chromium, Hexavalent by SW 7196A	***Extracted:***												
	Analyzed:	Sep-06-12 16:45		Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Hexavalent Chromium		0.322	0.0100	ND	0.0100	0.126	0.0100	0.308	0.0100	0.0150	0.0100	0.634	0.0100
Dissolved Metals per ICP by SW846 6010B	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30	
	Analyzed:	Sep-12-12 03:09		Sep-12-12 03:15		Sep-12-12 03:20		Sep-12-12 03:26		Sep-12-12 03:32		Sep-12-12 03:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Iron		ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Inorganic Anions by EPA 300/300.1 SUB: E871002	***Extracted:***	Sep-08-12 05:49		Sep-08-12 20:22		Sep-08-12 20:38		Sep-08-12 20:54		Sep-08-12 22:31		Sep-08-12 22:47	
	Analyzed:	Sep-08-12 05:49		Sep-08-12 20:22		Sep-08-12 20:38		Sep-08-12 20:54		Sep-08-12 22:31		Sep-08-12 22:47	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Bromide		6.98	0.200	7.07	1.00	12.6	1.00	7.99	1.00	7.07	1.00	11.0	1.00
Ortho-Phosphate		ND	0.200	ND	1.00	ND	1.00	ND	1.00	ND	1.00	ND	1.00
Sulfate		769	5.00	398	2.50	1190	2.50	597	2.50	488	2.50	691	2.50
Nitrogen Ammonia by SM4500-NH3C SUB: E871002	***Extracted:***												
	Analyzed:	Sep-11-12 11:59		Sep-11-12 12:00		Sep-11-12 12:01		Sep-11-12 12:03		Sep-11-12 12:04		Sep-11-12 12:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Nitrogen, Ammonia (as N)		0.164	0.100	0.101	0.100	ND	0.100	ND	0.100	ND	0.100	ND	0.100
Sulfide by SM4500-S-F-00 SUB: E871002	***Extracted:***												
	Analyzed:	Sep-10-12 11:30		Sep-10-12 11:31		Sep-10-12 11:32		Sep-10-12 11:33		Sep-10-12 11:34		Sep-10-12 11:35	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Sulfide, total		ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00
TOC by SM 5310C SUB: E871002	***Extracted:***												
	Analyzed:	Sep-10-12 12:19		Sep-10-12 12:35		Sep-10-12 12:52		Sep-10-12 13:09		Sep-10-12 13:49		Sep-10-12 14:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Organic Carbon		1.12	1.00	2.75	1.00	4.99	1.00	2.30	1.00	4.57	1.00	2.80	1.00

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 17-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	448605-001		448605-002		448605-003		448605-004		448605-005		448605-006	
	Field Id:	MW047 090512		MW96090612		IW029090612		MW007A090612		IW028090612		MW009A090612	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Sep-05-12 15:35		Sep-06-12 09:30		Sep-06-12 10:30		Sep-06-12 11:30		Sep-06-12 12:40		Sep-06-12 13:30	
Total Metals by EPA 6010B **SUB: E871002**	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30	
	Analyzed:	Sep-12-12 01:51		Sep-12-12 02:13		Sep-12-12 02:19		Sep-12-12 02:24		Sep-12-12 02:41		Sep-12-12 02:47	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chromium		0.323	0.0100	ND	0.0100	0.184	0.0100	0.296	0.0100	0.0185	0.0100	0.615	0.0100
Iron		ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Sodium		375	0.500	183	0.500	424	0.500	235	0.500	308	0.500	306	0.500

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 17-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	448605-007		448605-008		448605-009					
	Field Id:	IW030(p)090612		MW0895A090612		Dup1090612					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Sep-06-12 14:10		Sep-06-12 15:05		Sep-06-12 00:00					
Chromium, Hexavalent by SW 7196A	***Extracted:***										
	Analyzed:	Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Hexavalent Chromium		0.356	0.0100	0.0270	0.0100	0.125	0.0100				
Dissolved Metals per ICP by SW846 6010B	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30					
	Analyzed:	Sep-12-12 03:54		Sep-12-12 04:00		Sep-12-12 04:05					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Iron		ND	0.200	ND	0.200	ND	0.200				
Inorganic Anions by EPA 300/300.1 SUB: E871002	***Extracted:***	Sep-08-12 23:03		Sep-08-12 23:19		Sep-08-12 23:35					
	Analyzed:	Sep-08-12 23:03		Sep-08-12 23:19		Sep-08-12 23:35					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Bromide		14.9	1.00	5.21	1.00	12.3	1.00				
Ortho-Phosphate		ND	1.00	ND	1.00	ND	1.00				
Sulfate		1320	2.50	220	2.50	1200	2.50				
Nitrogen Ammonia by SM4500-NH3C SUB: E871002	***Extracted:***										
	Analyzed:	Sep-11-12 12:07		Sep-11-12 12:09		Sep-11-12 12:10					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Nitrogen, Ammonia (as N)		ND	0.100	ND	0.100	ND	0.100				
Sulfide by SM4500-S-F-00 SUB: E871002	***Extracted:***										
	Analyzed:	Sep-10-12 11:36		Sep-10-12 11:38		Sep-10-12 11:39					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Sulfide, total		ND	5.00	ND	5.00	ND	5.00				
TOC by SM 5310C SUB: E871002	***Extracted:***										
	Analyzed:	Sep-10-12 14:22		Sep-10-12 14:38		Sep-10-12 14:54					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Total Organic Carbon		5.92	1.00	2.75	1.00	5.05	1.00				

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 17-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	448605-007		448605-008		448605-009					
	Field Id:	IW030(p)090612		MW0895A090612		Dup1090612					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Sep-06-12 14:10		Sep-06-12 15:05		Sep-06-12 00:00					
Total Metals by EPA 6010B SUB: E871002	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30					
	Analyzed:	Sep-12-12 02:52		Sep-12-12 02:58		Sep-12-12 03:04					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Chromium		0.429	0.0100	0.0279	0.0100	0.185	0.0100				
Iron		0.227	0.200	ND	0.200	ND	0.200				
Sodium		470	0.500	235	0.500	427	0.500				

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Blank Spike Recovery

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Lab Batch #: 896454 **Sample:** 896454-1-BKS **Matrix:** Water

Date Analyzed: 09/07/2012 **Date Prepared:** 09/07/2012 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0235	94	80-120	

Lab Batch #: 896456 **Sample:** 896456-1-BKS **Matrix:** Water

Date Analyzed: 09/06/2012 **Date Prepared:** 09/06/2012 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0232	93	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Analyst: TTE **Date Prepared:** 09/08/2012 **Date Analyzed:** 09/08/2012

Lab Batch ID: 896116 **Sample:** 626946-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.47	95	10.0	9.56	96	1	80-120	20	
Ortho-Phosphate	<0.200	10.0	10.2	102	10.0	10.8	108	6	80-120	20	
Sulfate	<0.500	50.0	53.5	107	50.0	54.2	108	1	80-120	20	

Analyst: TTE **Date Prepared:** 09/08/2012 **Date Analyzed:** 09/08/2012

Lab Batch ID: 896119 **Sample:** 626948-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.18	92	10.0	9.28	93	1	80-120	20	
Ortho-Phosphate	<0.200	10.0	9.81	98	10.0	10.0	100	2	80-120	20	
Sulfate	<0.500	50.0	52.2	104	50.0	52.7	105	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Analyst: TTE **Date Prepared:** 09/08/2012 **Date Analyzed:** 09/08/2012

Lab Batch ID: 896120 **Sample:** 626950-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.66	97	10.0	9.68	97	0	80-120	20	
Ortho-Phosphate	<0.200	10.0	9.19	92	10.0	9.30	93	1	80-120	20	
Sulfate	<0.500	50.0	53.8	108	50.0	53.2	106	1	80-120	20	

Analyst: DEP **Date Prepared:** 09/11/2012 **Date Analyzed:** 09/11/2012

Lab Batch ID: 896226 **Sample:** 896226-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Nitrogen Ammonia by SM4500-NH3C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.68	107	2.50	2.70	108	1	80-120	20	

Analyst: TTE **Date Prepared:** 09/10/2012 **Date Analyzed:** 09/10/2012

Lab Batch ID: 896149 **Sample:** 896149-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	1000	100	1000	1000	100	0	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Analyst: TTE **Date Prepared:** 09/10/2012 **Date Analyzed:** 09/10/2012

Lab Batch ID: 896183 **Sample:** 896183-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	<1.00	15.0	14.3	95	15.0	14.4	96	1	90-110	20	

Analyst: MKO **Date Prepared:** 09/10/2012 **Date Analyzed:** 09/12/2012

Lab Batch ID: 896366 **Sample:** 626973-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.942	94	1.00	0.914	91	3	80-120	20	
Iron	<0.200	5.00	4.84	97	5.00	4.70	94	3	80-120	20	
Sodium	<0.500	25.0	26.4	106	25.0	25.4	102	4	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896116 **Project ID:** 073018

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448576-001 S **Batch #:** 1 **Matrix:** Drinking Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	<0.200	10.0	11.2	112	80-120	
Sulfate	45.3	50.0	89.1	88	80-120	

Lab Batch #: 896116

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448578-002 S **Batch #:** 1 **Matrix:** Drinking Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	0.534	10.0	9.51	90	80-120	
Sulfate	1.68	50.0	54.7	106	80-120	

Lab Batch #: 896119

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448674-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	7.05	100	92.2	85	80-120	
Ortho-Phosphate	<2.00	100	74.4	74	80-120	X
Sulfate	10.3	500	526	103	80-120	

Lab Batch #: 896119

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448709-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	6.05	100	92.9	87	80-120	
Ortho-Phosphate	<2.00	100	71.0	71	80-120	X
Sulfate	78.9	500	593	103	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS Recoveries

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896120 **Project ID:** 073018

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448605-009 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	12.3	50.0	64.3	104	80-120	
Ortho-Phosphate	<1.00	50.0	38.0	76	80-120	X
Sulfate	1200	250	1410	84	80-120	

Lab Batch #: 896120

Date Analyzed: 09/09/2012 **Date Prepared:** 09/09/2012 **Analyst:** TTE

QC- Sample ID: 448680-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	4.55	100	98.3	94	80-120	
Ortho-Phosphate	<2.00	100	83.6	84	80-120	
Sulfate	93.9	500	637	109	80-120	

Lab Batch #: 896226

Date Analyzed: 09/11/2012 **Date Prepared:** 09/11/2012 **Analyst:** DEP

QC- Sample ID: 448605-006 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Nitrogen Ammonia by SM4500-NH3C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.60	104	80-120	

Lab Batch #: 896183

Date Analyzed: 09/10/2012 **Date Prepared:** 09/10/2012 **Analyst:** TTE

QC- Sample ID: 448581-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	1.07	15.0	15.8	98	90-110	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS Recoveries

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896183 **Project ID:** 073018

Date Analyzed: 09/10/2012 **Date Prepared:** 09/10/2012 **Analyst:** TTE

QC- Sample ID: 448581-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	1.17	15.0	15.9	98	90-110	

Lab Batch #: 896366

Date Analyzed: 09/12/2012 **Date Prepared:** 09/10/2012 **Analyst:** MKO

QC- Sample ID: 448605-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chromium	0.323	1.00	1.22	90	80-120	
Iron	<0.200	5.00	4.82	96	80-120	
Sodium	375	25.0	396	84	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: North Eunice

Work Order # : 448605 **Project ID:** 073018

Lab Batch ID: 896454 **QC- Sample ID:** 448605-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/07/2012 **Date Prepared:** 09/07/2012 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Hexavalent Chromium	<0.0100	0.200	0.233	117	0.200	0.233	117	0	80-120	20	

Lab Batch ID: 896456 **QC- Sample ID:** 448547-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/06/2012 **Date Prepared:** 09/06/2012 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Hexavalent Chromium	<0.0100	0.200	0.238	119	0.200	0.238	119	0	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896454 **Project ID:** 073018
Date Analyzed: 09/07/2012 09:15 **Date Prepared:** 09/07/2012 **Analyst:** WRU
QC- Sample ID: 448605-002 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 896456
Date Analyzed: 09/06/2012 11:30 **Date Prepared:** 09/06/2012 **Analyst:** WRU
QC- Sample ID: 448547-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 896149
Date Analyzed: 09/10/2012 11:41 **Date Prepared:** 09/10/2012 **Analyst:** TTE
QC- Sample ID: 448605-009 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Lab Batch #: 896149
Date Analyzed: 09/10/2012 11:22 **Date Prepared:** 09/10/2012 **Analyst:** TTE
QC- Sample ID: 448699-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/05/2012 Justin Nixon
Received: 09/07/2012
Analyzed: 09/07/2012

Hygeia Sample ID	96108 QC X
Client Sample ID	**448605-001**
Location	
Sample Type	Water
Sample Amount	0.1 mL
Medium / Method	R2A
Dilution Factor(s)	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	13	1	13,000	100
Total CFU	13,000 / 100 mL			
Comments				

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311	Project No.: CRA
Nick Straccione	Project Name:
Xenco Laboratories	Collected: 09/05/2012 Justin Nixon
4141 Greenbriar	Received: 09/07/2012
Stafford, TX 77477	Analyzed: 09/07/2012

Analyst Anita Schauer

Lab Director Crystal Enloe

Thank you for using Hygeia Laboratories Inc. We strive to provide superior quality and service.

This report may not be reproduced except in full, and only with the written approval of this laboratory. Please contact Hygeia regarding any questions about these results, this report, or the analytical methods employed.

Data in this report are reliable within two significant figures. Sample results are not corrected based on results of blanks. The minimum reporting limit (MRL) is calculated as the lowest dilution tested/volume. Estimates of uncertainty are available upon request. CFU = colony forming units. CFU/unit is calculated as raw count*dilution/sample amount. Total CFU/unit is the sum of individual CFUs/unit and is considered <MRL if no colonies are present.

Confidentiality Notice:

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Guidelines for Interpretation:

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork. Bacteria have been associated with a variety of health effects and sensitivity varies from person to person. Contact the CDC (www.cdc.gov) for information regarding potential health risks related to exposure in air or on surfaces and the USEPA (www.epa.gov) for existing established standards including regulated water quality standards.

Liability Notice:

Hygeia Laboratories Inc. and its personnel shall not be held liable for any misinformation provided to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report relates only to samples submitted and analyzed.

Revision 0 09/14/2012 as

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

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Houston, TX 77042
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Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/06/2012 client
Received: 09/08/2012
Analyzed: 09/08/2012

Hygeia Sample ID	96133	96134	96135
Client Sample ID	**448605 - 002**	**448605 - 003**	**448605 - 004**
Location			
Sample Type	Water	Water	Water
Sample Amount	0.1 mL	0.1 mL	1 mL
Medium / Method	R2A	R2A	R2A
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	543	1	543,000	100	411	1	411,000	100	2416	1	241,600	100
Total CFU	543,000 / 100 mL				411,000 / 100 mL				241,600 / 100 mL			
Comments												

Hygeia Reference No. 30311120195HO **Report No.** 21400 **Revison** 0

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

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Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/06/2012 client
Received: 09/08/2012
Analyzed: 09/08/2012

Hygeia Sample ID	96136	96137	96138
Client Sample ID	**448605 - 005**	**448605 - 006**	**448605 - 007**
Location			
Sample Type	Water	Water	Water
Sample Amount	1 mL	1 mL	0.1 mL
Medium / Method	R2A	R2A	R2A
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	120	1	12,000	100	21	1	2,100	100	57	1	57,000	100
Total CFU	12,000 / 100 mL				2,100 / 100 mL				57,000 / 100 mL			
Comments												

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

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Houston, TX 77042
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Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/06/2012 client
Received: 09/08/2012
Analyzed: 09/08/2012

Hygeia Sample ID	96139	96140
Client Sample ID	**448605 - 008**	**448605 - 009**
Location		
Sample Type	Water	Water
Sample Amount	1 mL	1 mL
Medium / Method	R2A	R2A
Dilution Factor(s)	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	66	1	6,600	100	155	1	15,500	100
Total CFU	6,600 / 100 mL				15,500 / 100 mL			
Comments								

Hygeia Reference No. 30311120195HO **Report No.** 21400 **Revison** 0

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

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Client No.: 30311	Project No.: CRA
Nick Straccione	Project Name:
Xenco Laboratories	Collected: 09/06/2012 client
4141 Greenbriar	Received: 09/08/2012
Stafford, TX 77477	Analyzed: 09/08/2012

Analyst _____
Anita Schauer

Lab Director _____
Crystal Enloe

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Revision 0 09/14/2012 as

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Mike Wa.
Company Name: CRA
Company Address: 2135 W Loop 250N
City/State/Zip: Midland, TX 79703
Telephone No: 432-686-0086 Fax No: 432-686-0186
Sampler Signature: Justin Nixon e-mail:

Project Name: North Eunice
Project #: 073018
Project Loc: Eunice, NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 448605

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW=Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: / TOTAL: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW07 090512			9.5.12	1535			X																				

Special Instructions: read attached ssow

	Date	Time		Date	Time
Relinquished by:	8.6.12	214	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by ELOT: Shawnee Smith	8-6-12	14:14

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 1.5 °C

CRA Simplified Scope of Work (SSOW)/Laboratory Services Purchase Order

SSOW Ref. Code
073018_20120823

Project Name: Chevron-North Eunice
Phase/Study Title: Baseline Sampling
CRA Project No./Phase/Task: 073018
Event Description: Pilot Test - GW Sampling
Project Location: Eunice, New Mexico

Item	Sample Matrix	Analytical Parameters	Analytical Methods	Holding Time	Unit Prices	Applicable Surcharge Multiplier (1)	Extended Prices	Estimated Sample Qty/Event	Field QC Samples: MS	MSD	Lab Dup	Trip Blk	RBlk	Fld Dup	Other	Total Sample Qty.	Billable Samples	Estimated Cost/Event
1	water	Total, Chromium, Iron, Sodium	SW-846 6010B	180 days	$ 30.00	1.00	$ 30.00	8				2		2		12	12	$360.00
2	water	Hexavalent Chromium	SW-846 7196A	24 hours	$ 25.00	1.00	$ 25.00	8						2		10	10	$250.00
3	water	Anions (SO4, Br)	E 300	28 days	$ 40.00	1.00	$ 40.00	8						2		10	10	$400.00
4	water	Sulfide	SM4500	7 days	$ 40.00	1.00	$ 40.00	8						2		10	10	$400.00
5	water	Ammonia-Nitrogen	SM4500	28 days	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
6	water	Total Organic Carbon TOC	SM5310	28 days	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
7	water	Orthophosphate-phosphorus	E300	48 hrs	$ 14.00	1.00	$ 14.00	8						2		10	10	$140.00
8	water	Total Anaerobic Microbial Count		24 hrs	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
9	water	Dissolved Iron	SW-846 6010B	180 days	$ 10.00	1.00	$ 10.00	8						2		10	10	$100.00

(1) Explanation of Surcharges:

Estimated Event Subtotal:	$2,700.00
Laboratory Surcharge(s):	$0.00
Estimated Event Total Costs:	$2,700.00

Lab Contracting Summary:

Governing Terms and Conditions

- ☐ Master Agreement Number:
- ☑ Exhibit "A" Terms and Conditions
- ☐ Client Contract

CRA Purchase Order Number: 4051255
Name of Client:
Other Additional Insureds:
Governing Law: Texas
Currency: US
Address Invoice to: CRA c/o Claudia Ramos
6320 Rothway, Suite 100
Houston, TX 77040

Claudia Ramos — 8/23/2012
(authorized CRA signature) (date signed)

Nick Straccione — 8/23/2012
(authorized Vendor signature) (date signed)

Typed name constitutes authorized signature.

Vendor to provide and deliver all items or services set out or otherwise described below subject to the governing terms and conditions checked above. This Purchase Order expressly limits acceptance to such terms and conditions. Any additional or different terms proposed by Vendor are rejected unless expressly agreed to in writing by CRA. To accept this Purchase Order, Vendor must sign, date, and return one copy of this page to issuer before starting any work. CRA's receipt of Signature of this Purchase Order may be sent by facsimile (with confirmation by transmitting machine) and/or transmitted by portable document file (PDF) which shall be treated as an original signature, and any such signature, facsimile, PDF file, or copy of this signed Purchase Order shall be valid as an original and shall be binding as if it were the original. Show Purchase Order No. on all correspondence, insurance certificates, invoices, and delivery papers.

200016-PO(QSF-024-Lab)-Rev.10 1/18/2011

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Mike Wisniowiecki
Company Name: CRA
Company Address: 2135 S Loop 250 N
City/State/Zip: Midland, TX 79703
Telephone No: 432-686-0086
Fax No: 432-686-0186
Sampler Signature:
e-mail: MWisniowieck@CRAworld.com

Project Name: North Eunice
Project #: 073018
Project Loc: Eunice, NM
PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

↳ can we combine results w/ COC turned in on 9.6.12 for North Eunice also.

(lab use only)
ORDER #: 448648 5

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW=Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TPH: TX1005 TX1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
02	MW 6 090612			9-6-12	0930		6	X																						X
03	IW 02 090612			9-6-12	1030		6	X																						X
04	MW 07A 090612			9-6-12	1130		6	X																						X
05	FW 02 8090612			9-6-12	1240		6	X																						X
06	MW 09A 090612			9-6-12	1330		6	X																						X
07	IW 030(P) 090612			9-6-12	1410		6	X																						X
08	MW 089A 090612			9-6-12	1505		6	X																						X
09	Dup 090612																													

Special Instructions:
See Attached SSOW for analyses. Copy of COC turned in on 9.6.12 also attached. Can we put both into one report.

Relinquished by:	Date	Time	Received by:	Date	Time
	9-7-12	0830			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Thuy Brown	9/7/12	8:30

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 3.5 2.0c

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 09/06/2012 04:14:00 PM

Work Order #: 448605

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles/ container?	**Yes**
#6 *Custody Seals Signed and dated for Containers/coolers	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 448605

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

North Eunice

073018

20-SEP-12

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

20-SEP-12

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **448605**
North Eunice
Project Address: Eunice, NM

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 448605. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 448605 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 448605

Conestoga Rovers & Associates, Midland, TX

North Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW097 090512	W	09-05-12 15:35		448605-001
MW96090612	W	09-06-12 09:30		448605-002
IW029090612	W	09-06-12 10:30		448605-003
MW007A090612	W	09-06-12 11:30		448605-004
IW028090612	W	09-06-12 12:40		448605-005
MW009A090612	W	09-06-12 13:30		448605-006
IW030(p)090612	W	09-06-12 14:10		448605-007
MW089SA 090612	W	09-06-12 15:05		448605-008
Dup1090612	W	09-06-12 00:00		448605-009

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: North Eunice

Project ID:	*073018*	*Report Date:*	*20-SEP-12*
Work Order Number:	*448605*	*Date Received:*	*09/06/2012*

Sample receipt non conformances and comments:
Samples #2-9 (received 09-07) were taken to the lab by the client one day after sample#1 (received 09-06)

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-896116 Inorganic Anions by EPA 300/300.1
E300

Batch 896116, Ortho-Phosphate recovered below QC limits
Samples affected are: 448605-001.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Batch: LBA-896119 Inorganic Anions by EPA 300/300.1
E300

Batch 896119, Ortho-Phosphate recovered below QC limits
Samples affected are: 448605-004, -002, -003.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Batch: LBA-896120 Inorganic Anions by EPA 300/300.1
E300

Batch 896120, Ortho-Phosphate recovered below QC limits in the Matrix Spike.
Samples affected are: 448605-007, -006, -009, -005, -008.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 20-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	448605-001		448605-002		448605-003		448605-004		448605-005		448605-006	
	Field Id:	MW097 090512		MW96090612		IW029090612		MW007A090612		IW028090612		MW009A090612	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Sep-05-12 15:35		Sep-06-12 09:30		Sep-06-12 10:30		Sep-06-12 11:30		Sep-06-12 12:40		Sep-06-12 13:30	
Chromium, Hexavalent by SW 7196A	***Extracted:***												
	Analyzed:	Sep-06-12 16:45		Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Hexavalent Chromium		0.322	0.0100	ND	0.0100	0.126	0.0100	0.308	0.0100	0.0150	0.0100	0.634	0.0100
Dissolved Metals per ICP by SW846 6010B	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30	
	Analyzed:	Sep-12-12 03:09		Sep-12-12 03:15		Sep-12-12 03:20		Sep-12-12 03:26		Sep-12-12 03:32		Sep-12-12 03:48	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Iron		ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Inorganic Anions by EPA 300/300.1 SUB: E871002	***Extracted:***	Sep-08-12 05:49		Sep-08-12 20:22		Sep-08-12 20:38		Sep-08-12 20:54		Sep-08-12 22:31		Sep-08-12 22:47	
	Analyzed:	Sep-08-12 05:49		Sep-08-12 20:22		Sep-08-12 20:38		Sep-08-12 20:54		Sep-08-12 22:31		Sep-08-12 22:47	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Bromide		6.98	0.200	7.07	1.00	12.6	1.00	7.99	1.00	7.07	1.00	11.0	1.00
Ortho-Phosphate		ND	0.200	ND	1.00	ND	1.00	ND	1.00	ND	1.00	ND	1.00
Sulfate		769	5.00	398	2.50	1190	2.50	597	2.50	488	2.50	691	2.50
Nitrogen Ammonia by SM4500-NH3C SUB: E871002	***Extracted:***												
	Analyzed:	Sep-11-12 11:59		Sep-11-12 12:00		Sep-11-12 12:01		Sep-11-12 12:03		Sep-11-12 12:04		Sep-11-12 12:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Nitrogen, Ammonia (as N)		0.164	0.100	0.101	0.100	ND	0.100	ND	0.100	ND	0.100	ND	0.100
Sulfide by SM4500-S-F-00 SUB: E871002	***Extracted:***												
	Analyzed:	Sep-10-12 11:30		Sep-10-12 11:31		Sep-10-12 11:32		Sep-10-12 11:33		Sep-10-12 11:34		Sep-10-12 11:35	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Sulfide, total		ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00
TOC by SM 5310C SUB: E871002	***Extracted:***												
	Analyzed:	Sep-10-12 12:19		Sep-10-12 12:35		Sep-10-12 12:52		Sep-10-12 13:09		Sep-10-12 13:49		Sep-10-12 14:05	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Organic Carbon		1.12	1.00	2.75	1.00	4.99	1.00	2.30	1.00	4.57	1.00	2.80	1.00

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 20-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	448605-001		448605-002		448605-003		448605-004		448605-005		448605-006	
	Field Id:	MW097 090512		MW96090612		IW029090612		MW007A090612		IW028090612		MW009A090612	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Sep-05-12 15:35		Sep-06-12 09:30		Sep-06-12 10:30		Sep-06-12 11:30		Sep-06-12 12:40		Sep-06-12 13:30	
Total Metals by EPA 6010B **SUB: E871002**	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30	
	Analyzed:	Sep-12-12 01:51		Sep-12-12 02:13		Sep-12-12 02:19		Sep-12-12 02:24		Sep-12-12 02:41		Sep-12-12 02:47	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chromium		0.323	0.0100	ND	0.0100	0.184	0.0100	0.296	0.0100	0.0185	0.0100	0.615	0.0100
Iron		ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Sodium		375	0.500	183	0.500	424	0.500	235	0.500	308	0.500	306	0.500

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 20-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	448605-007		448605-008		448605-009					
	Field Id:	IW030(p)090612		MW089SA 090612		Dup1090612					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Sep-06-12 14:10		Sep-06-12 15:05		Sep-06-12 00:00					
Chromium, Hexavalent by SW 7196A	***Extracted:***										
	Analyzed:	Sep-07-12 09:15		Sep-07-12 09:15		Sep-07-12 09:15					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Hexavalent Chromium		0.356	0.0100	0.0270	0.0100	0.125	0.0100				
Dissolved Metals per ICP by SW846 6010B	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30					
	Analyzed:	Sep-12-12 03:54		Sep-12-12 04:00		Sep-12-12 04:05					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Iron		ND	0.200	ND	0.200	ND	0.200				
Inorganic Anions by EPA 300/300.1 SUB: E871002	***Extracted:***	Sep-08-12 23:03		Sep-08-12 23:19		Sep-08-12 23:35					
	Analyzed:	Sep-08-12 23:03		Sep-08-12 23:19		Sep-08-12 23:35					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Bromide		14.9	1.00	5.21	1.00	12.3	1.00				
Ortho-Phosphate		ND	1.00	ND	1.00	ND	1.00				
Sulfate		1320	2.50	220	2.50	1200	2.50				
Nitrogen Ammonia by SM4500-NH3C SUB: E871002	***Extracted:***										
	Analyzed:	Sep-11-12 12:07		Sep-11-12 12:09		Sep-11-12 12:10					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Nitrogen, Ammonia (as N)		ND	0.100	ND	0.100	ND	0.100				
Sulfide by SM4500-S-F-00 SUB: E871002	***Extracted:***										
	Analyzed:	Sep-10-12 11:36		Sep-10-12 11:38		Sep-10-12 11:39					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Sulfide, total		ND	5.00	ND	5.00	ND	5.00				
TOC by SM 5310C SUB: E871002	***Extracted:***										
	Analyzed:	Sep-10-12 14:22		Sep-10-12 14:38		Sep-10-12 14:54					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Total Organic Carbon		5.92	1.00	2.75	1.00	5.05	1.00				

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 448605

Conestoga Rovers & Associates, Midland, TX

Project Name: North Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: Eunice, NM

Date Received in Lab: Thu Sep-06-12 04:14 pm
Report Date: 20-SEP-12
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	448605-007		448605-008		448605-009					
	Field Id:	IW030(p)090612		MW089SA 090612		Dup1090612					
	Depth:										
	Matrix:	WATER		WATER		WATER					
	Sampled:	Sep-06-12 14:10		Sep-06-12 15:05		Sep-06-12 00:00					
Total Metals by EPA 6010B SUB: E871002	***Extracted:***	Sep-10-12 11:30		Sep-10-12 11:30		Sep-10-12 11:30					
	Analyzed:	Sep-12-12 02:52		Sep-12-12 02:58		Sep-12-12 03:04					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL				
Chromium		0.429	0.0100	0.0279	0.0100	0.185	0.0100				
Iron		0.227	0.200	ND	0.200	ND	0.200				
Sodium		470	0.500	235	0.500	427	0.500				

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Lab Batch #: 896454 **Sample:** 896454-1-BKS **Matrix:** Water

Date Analyzed: 09/07/2012 **Date Prepared:** 09/07/2012 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0235	94	80-120	

Lab Batch #: 896456 **Sample:** 896456-1-BKS **Matrix:** Water

Date Analyzed: 09/06/2012 **Date Prepared:** 09/06/2012 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0232	93	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Analyst: TTE **Date Prepared:** 09/08/2012 **Date Analyzed:** 09/08/2012

Lab Batch ID: 896116 **Sample:** 626946-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.47	95	10.0	9.56	96	1	80-120	20	
Ortho-Phosphate	<0.200	10.0	10.2	102	10.0	10.8	108	6	80-120	20	
Sulfate	<0.500	50.0	53.5	107	50.0	54.2	108	1	80-120	20	

Analyst: TTE **Date Prepared:** 09/08/2012 **Date Analyzed:** 09/08/2012

Lab Batch ID: 896119 **Sample:** 626948-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.18	92	10.0	9.28	93	1	80-120	20	
Ortho-Phosphate	<0.200	10.0	9.81	98	10.0	10.0	100	2	80-120	20	
Sulfate	<0.500	50.0	52.2	104	50.0	52.7	105	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Analyst: TTE **Date Prepared:** 09/08/2012 **Date Analyzed:** 09/08/2012

Lab Batch ID: 896120 **Sample:** 626950-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.66	97	10.0	9.68	97	0	80-120	20	
Ortho-Phosphate	<0.200	10.0	9.19	92	10.0	9.30	93	1	80-120	20	
Sulfate	<0.500	50.0	53.8	108	50.0	53.2	106	1	80-120	20	

Analyst: DEP **Date Prepared:** 09/11/2012 **Date Analyzed:** 09/11/2012

Lab Batch ID: 896226 **Sample:** 896226-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Nitrogen Ammonia by SM4500-NH3C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.68	107	2.50	2.70	108	1	80-120	20	

Analyst: TTE **Date Prepared:** 09/10/2012 **Date Analyzed:** 09/10/2012

Lab Batch ID: 896149 **Sample:** 896149-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	1000	100	1000	1000	100	0	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: North Eunice

Work Order #: 448605 **Project ID:** 073018

Analyst: TTE **Date Prepared:** 09/10/2012 **Date Analyzed:** 09/10/2012

Lab Batch ID: 896183 **Sample:** 896183-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	<1.00	15.0	14.3	95	15.0	14.4	96	1	90-110	20	

Analyst: MKO **Date Prepared:** 09/10/2012 **Date Analyzed:** 09/12/2012

Lab Batch ID: 896366 **Sample:** 626973-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.942	94	1.00	0.914	91	3	80-120	20	
Iron	<0.200	5.00	4.84	97	5.00	4.70	94	3	80-120	20	
Sodium	<0.500	25.0	26.4	106	25.0	25.4	102	4	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896116 **Project ID:** 073018

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448576-001 S **Batch #:** 1 **Matrix:** Drinking Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	<0.200	10.0	11.2	112	80-120	
Sulfate	45.3	50.0	89.1	88	80-120	

Lab Batch #: 896116

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448578-002 S **Batch #:** 1 **Matrix:** Drinking Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	0.534	10.0	9.51	90	80-120	
Sulfate	1.68	50.0	54.7	106	80-120	

Lab Batch #: 896119

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448674-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	7.05	100	92.2	85	80-120	
Ortho-Phosphate	<2.00	100	74.4	74	80-120	X
Sulfate	10.3	500	526	103	80-120	

Lab Batch #: 896119

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448709-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	6.05	100	92.9	87	80-120	
Ortho-Phosphate	<2.00	100	71.0	71	80-120	X
Sulfate	78.9	500	593	103	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS Recoveries

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896120 **Project ID:** 073018

Date Analyzed: 09/08/2012 **Date Prepared:** 09/08/2012 **Analyst:** TTE

QC- Sample ID: 448605-009 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	12.3	50.0	64.3	104	80-120	
Ortho-Phosphate	<1.00	50.0	38.0	76	80-120	X
Sulfate	1200	250	1410	84	80-120	

Lab Batch #: 896120

Date Analyzed: 09/09/2012 **Date Prepared:** 09/09/2012 **Analyst:** TTE

QC- Sample ID: 448680-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	4.55	100	98.3	94	80-120	
Ortho-Phosphate	<2.00	100	83.6	84	80-120	
Sulfate	93.9	500	637	109	80-120	

Lab Batch #: 896226

Date Analyzed: 09/11/2012 **Date Prepared:** 09/11/2012 **Analyst:** DEP

QC- Sample ID: 448605-006 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Nitrogen Ammonia by SM4500-NH3C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.60	104	80-120	

Lab Batch #: 896183

Date Analyzed: 09/10/2012 **Date Prepared:** 09/10/2012 **Analyst:** TTE

QC- Sample ID: 448581-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	1.07	15.0	15.8	98	90-110	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS Recoveries

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896183 **Project ID:** 073018

Date Analyzed: 09/10/2012 **Date Prepared:** 09/10/2012 **Analyst:** TTE

QC- Sample ID: 448581-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	1.17	15.0	15.9	98	90-110	

Lab Batch #: 896366

Date Analyzed: 09/12/2012 **Date Prepared:** 09/10/2012 **Analyst:** MKO

QC- Sample ID: 448605-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chromium	0.323	1.00	1.22	90	80-120	
Iron	<0.200	5.00	4.82	96	80-120	
Sodium	375	25.0	396	84	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: North Eunice

Work Order # : 448605 **Project ID:** 073018

Lab Batch ID: 896454 **QC- Sample ID:** 448605-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/07/2012 **Date Prepared:** 09/07/2012 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Hexavalent Chromium	<0.0100	0.200	0.233	117	0.200	0.233	117	0	80-120	20	

Lab Batch ID: 896456 **QC- Sample ID:** 448547-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 09/06/2012 **Date Prepared:** 09/06/2012 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Hexavalent Chromium	<0.0100	0.200	0.238	119	0.200	0.238	119	0	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: North Eunice

Work Order #: 448605

Lab Batch #: 896454 **Project ID:** 073018
Date Analyzed: 09/07/2012 09:15 **Date Prepared:** 09/07/2012 **Analyst:** WRU
QC- Sample ID: 448605-002 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 896456
Date Analyzed: 09/06/2012 11:30 **Date Prepared:** 09/06/2012 **Analyst:** WRU
QC- Sample ID: 448547-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 896149
Date Analyzed: 09/10/2012 11:41 **Date Prepared:** 09/10/2012 **Analyst:** TTE
QC- Sample ID: 448605-009 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Lab Batch #: 896149
Date Analyzed: 09/10/2012 11:22 **Date Prepared:** 09/10/2012 **Analyst:** TTE
QC- Sample ID: 448699-011 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/05/2012 Justin Nixon
Received: 09/07/2012
Analyzed: 09/07/2012

Hygeia Sample ID	96108 QC X
Client Sample ID	**448605-001**
Location	
Sample Type	Water
Sample Amount	0.1 mL
Medium / Method	R2A
Dilution Factor(s)	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	13	1	13,000	100
Total CFU	13,000 / 100 mL			
Comments				

Hygeia Reference No. 30311120194HO **Report No.** 21394 **Revison** 0

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311	Project No.: CRA
Nick Straccione	Project Name:
Xenco Laboratories	Collected: 09/05/2012 Justin Nixon
4141 Greenbriar	Received: 09/07/2012
Stafford, TX 77477	Analyzed: 09/07/2012

Analyst Anita Schauer

Lab Director Crystal Enloe

Thank you for using Hygeia Laboratories Inc. We strive to provide superior quality and service.

Data in this report are reliable within two significant figures. Sample results are not corrected based on results of blanks. The minimum reporting limit (MRL) is calculated as the lowest dilution tested/volume. Estimates of uncertainty are available upon request. CFU = colony forming units. CFU/unit is calculated as raw count*dilution/sample amount. Total CFU/unit is the sum of individual CFUs/unit and is considered <MRL if no colonies are present.

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Guidelines for Interpretation:

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork. Bacteria have been associated with a variety of health effects and sensitivity varies from person to person. Contact the CDC (www.cdc.gov) for information regarding potential health risks related to exposure in air or on surfaces and the USEPA (www.epa.gov) for existing established standards including regulated water quality standards.

Liability Notice:

Hygeia Laboratories Inc. and its personnel shall not be held liable for any misinformation provided to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report relates only to samples submitted and analyzed.

Revision 0 09/14/2012 as

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/06/2012 client
Received: 09/08/2012
Analyzed: 09/08/2012

Hygeia Sample ID	96133	96134	96135
Client Sample ID	**448605 - 002**	**448605 - 003**	**448605 - 004**
Location			
Sample Type	Water	Water	Water
Sample Amount	0.1 mL	0.1 mL	1 mL
Medium / Method	R2A	R2A	R2A
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	543	1	543,000	100	411	1	411,000	100	2416	1	241,600	100
Total CFU	543,000 / 100 mL				411,000 / 100 mL				241,600 / 100 mL			
Comments												

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/06/2012 client
Received: 09/08/2012
Analyzed: 09/08/2012

Hygeia Sample ID	96136	96137	96138
Client Sample ID	**448605 - 005**	**448605 - 006**	**448605 - 007**
Location			
Sample Type	Water	Water	Water
Sample Amount	1 mL	1 mL	0.1 mL
Medium / Method	R2A	R2A	R2A
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	120	1	12,000	100	21	1	2,100	100	57	1	57,000	100
Total CFU	12,000 / 100 mL				2,100 / 100 mL				57,000 / 100 mL			
Comments												

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
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www.hygeialabsinc.com

Client No.: 30311
Nick Straccione
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.: CRA
Project Name:
Collected: 09/06/2012 client
Received: 09/08/2012
Analyzed: 09/08/2012

Hygeia Sample ID	96139	96140
Client Sample ID	**448605 - 008**	**448605 - 009**
Location		
Sample Type	Water	Water
Sample Amount	1 mL	1 mL
Medium / Method	R2A	R2A
Dilution Factor(s)	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	CFU / 100 mL	%	Raw Count	Dilution	CFU / 100 mL	%
Anaerobic heterotrophic bacteria	66	1	6,600	100	155	1	15,500	100
Total CFU	6,600 / 100 mL				15,500 / 100 mL			
Comments								

Hygeia Reference No. 30311120195HO **Report No.** 21400 **Revison** 0

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311	Project No.: CRA
Nick Straccione	Project Name:
Xenco Laboratories	Collected: 09/06/2012 client
4141 Greenbriar	Received: 09/08/2012
Stafford, TX 77477	Analyzed: 09/08/2012

Analyst _____
Anita Schauer

Lab Director _____
Crystal Enloe

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This report may not be reproduced except in full, and only with the written approval of this laboratory. Please contact Hygeia regarding any questions about these results, this report, or the analytical methods employed.

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Revision 0 09/14/2012 as

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Mike Wa.
Company Name: CRA
Company Address: 2135 W Loop 250N
City/State/Zip: Midland, TX 79703
Telephone No: 432-686-0086 Fax No: 432-686-0186
Sampler Signature: Justin Nixon e-mail:

Project Name: North Eunice
Project #: 073018
Project Loc: Eunice, NM
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 448605

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW=Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: / TOTAL: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.				RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW07 090512			9.5.12	1535			X																							

Special Instructions: read attached ssow

Relinquished by:	Date	Time	Received by:	Date	Time
	8-6-12	214			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Shawnee Smith	Date 8-6-12	Time 14:14

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N

by Sampler/Client Rep. ? by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 1.5 °C

CRA Simplified Scope of Work (SSOW)/Laboratory Services Purchase Order

SSOW Ref. Code
073018_20120823

Project Name: Chevron-North Eunice
Phase/Study Title: Baseline Sampling
CRA Project No./Phase/Task: 073018
Event Description: Pilot Test - GW Sampling
Project Location: Eunice, New Mexico

Item	Sample Matrix	Analytical Parameters	Analytical Methods	Holding Time	Unit Prices	Applicable Surcharge Multiplier (1)	Extended Prices	Estimated Sample Qty/Event	Field QC Samples: MS	MSD	Lab Dup	Trip Blk	RBlk	Fld Dup	Other	Total Sample Qty.	Billable Samples	Estimated Cost/Event
1	water	Total, Chromium, Iron, Sodium	SW-846 6010B	180 days	$ 30.00	1.00	$ 30.00	8				2		2		12	12	$360.00
2	water	Hexavalent Chromium	SW-846 7196A	24 hours	$ 25.00	1.00	$ 25.00	8						2		10	10	$250.00
3	water	Anions (SO4, Br)	E 300	28 days	$ 40.00	1.00	$ 40.00	8						2		10	10	$400.00
4	water	Sulfide	SM4500	7 days	$ 40.00	1.00	$ 40.00	8						2		10	10	$400.00
5	water	Ammonia-Nitrogen	SM4500	28 days	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
6	water	Total Organic Carbon TOC	SM5310	28 days	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
7	water	Orthophosphate-phosphorus	E300	48 hrs	$ 14.00	1.00	$ 14.00	8						2		10	10	$140.00
8	water	Total Anaerobic Microbial Count		24 hrs	$ 35.00	1.00	$ 35.00	8						2		10	10	$350.00
9	water	Dissolved Iron	SW-846 6010B	180 days	$ 10.00	1.00	$ 10.00	8						2		10	10	$100.00

(1) Explanation of Surcharges:

Estimated Event Subtotal:	$2,700.00
Laboratory Surcharge(s):	$0.00
Estimated Event Total Costs:	$2,700.00

Lab Contracting Summary:

Governing Terms and Conditions

- ☐ Master Agreement Number:
- ☑ Exhibit "A" Terms and Conditions
- ☐ Client Contract

CRA Purchase Order Number:	4051255
Name of Client:	
Other Additional Insureds:	
Governing Law:	Texas
Currency:	US
Address Invoice to:	CRA c/o Claudia Ramos 6320 Rothway, Suite 100 Houston, TX 77040

Claudia Ramos — 8/23/2012
(authorized CRA signature) (date signed)

Nick Straccione — 8/23/2012
(authorized Vendor signature) (date signed)

Typed name constitutes authorized signature.

Vendor to provide and deliver all items or services set out or otherwise described below subject to the governing terms and conditions checked above. This Purchase Order expressly limits acceptance to such terms and conditions. Any additional or different terms proposed by Vendor are rejected unless expressly agreed to in writing by CRA. To accept this Purchase Order, Vendor must sign, date, and return one copy of this page to issuer before starting any work. CRA's receipt of Signature of this Purchase Order may be sent by facsimile (with confirmation by transmitting machine) and/or transmitted by portable document file (PDF) which shall be treated as an original signature, and any such signature, facsimile, PDF file, or copy of this signed Purchase Order shall be valid as an original and shall be binding as if it were the original. Show Purchase Order No. on all correspondence, insurance certificates, invoices, and delivery papers.

200016-PO(QSF-024-Lab)-Rev.10 1/18/2011

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Mike Wisniowiecki
Company Name: CRA
Company Address: 2135 S Loop 250 N
City/State/Zip: Midland, TX 79703
Telephone No: 432-686-0086 Fax No: 432-686-0186
Sampler Signature:
e-mail: MWisniowieck@CRAworld.com

Project Name: North Eunice
Project #: 073018
Project Loc: Eunice, NM
PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

↳ Can we combine results w/ COC turned in on 9-6-12 for North Eunice Also.

(lab use only)
ORDER #: 448648 5

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW=Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO_4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
02	MW960090612			9-6-12	0930		6	X																					X
03	IW029090612			9-6-12	1030		6	X																					X
04	MW 007A 090612			9-6-12	1130		6	X																					X
05	FW 028090612			9-6-12	1240		6	X																					X
06	MW 009A 090612			9-6-12	1330		6	X																					X
07	IW 030(P) 090612			9-6-12	1410		6	X																					X
08	MW 089SA 090612			9-6-12	1505		6	X																					X
09	Dup 090612																												

Special Instructions:
See Attached SSOW for analyses. Copy of COC turned in on 9-6-12 also attached. Can we put both into one report.

Relinquished by:	Date	Time	Received by:	Date	Time
	9-7-12	0830			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				9/7/12	8:30

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 3.5 2.0

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 09/06/2012 04:14:00 PM

Work Order #: 448605

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles/ container?	**Yes**
#6 *Custody Seals Signed and dated for Containers/coolers	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 452802

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

N. Eunice

073018-2012-01

06-DEC-12

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

06-DEC-12

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No: **452802**
N. Eunice
Project Address: TX

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 452802. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 452802 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 452802

Conestoga Rovers & Associates, Midland, TX

N. Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW96111912	W	11-19-12 15:00		452802-001
MW97111912	W	11-19-12 16:40		452802-002
IW029111912	W	11-19-12 17:20		452802-003
MW7A111912	W	11-19-12 18:55		452802-004
Dup1111912	W	11-19-12 00:00		452802-005
MW7A(Metal Strip)	W	11-19-12 00:00		452802-006

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: N. Eunice

Project ID:	*073018-2012-01*	*Report Date:*	*06-DEC-12*
Work Order Number:	*452802*	*Date Received:*	*11/20/2012*

Sample receipt non conformances and comments:
Sample 003, client IDIW029111912, and sample 005, client ID Dup1111912 appear to be duplicate samples but their physical characteristics were different. Sample 005 had a dark yellow color and sediment whereas sample 003 was lighter and contained little sediment. This would account for the varied results between the two samples. Results were confirmed by re-analysis.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-901453 Inorganic Anions by EPA 300/300.1
E300

Batch 901453, Sulfate recovered above QC limits in the Matrix Spike.
Samples affected are: 452802-001, -004, -002, -003, -005.
The Laboratory Control Sample for Sulfate is within laboratory Control Limits

Batch: LBA-901583 Total Metals by EPA 6010B
SW6010B

Batch 901583, Sodium recovered above QC limits in the Matrix Spike.
Samples affected are: 452802-001, -004, -002, -003, -005.
The Laboratory Control Sample for Sodium is within laboratory Control Limits

Certificate of Analysis Summary 452802

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018-2012-01
Contact: Mike Wisniowiecki
Project Location: TX

Date Received in Lab: Tue Nov-20-12 09:12 am
Report Date: 06-DEC-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	452802-001		452802-002		452802-003		452802-004		452802-005		452802-006	
	Field Id:	MW96111912		MW97111912		IW029111912		MW7A111912		Dup1111912		MW7A(Metal Strip)	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-19-12 15:00		Nov-19-12 16:40		Nov-19-12 17:20		Nov-19-12 18:55		Nov-19-12 00:00		Nov-19-12 00:00	
Chromium, Hexavalent by SW 7196A	***Extracted:***												
	Analyzed:	Nov-20-12 13:35		Nov-20-12 13:35		Nov-20-12 13:35		Nov-20-12 13:35		Nov-20-12 13:35			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Hexavalent Chromium		ND	0.0100	0.436	0.200	ND	0.0100	0.319	0.0100	ND	0.0100		
Dissolved Metals per ICP by SW846 6010B SUB: TX104704215	***Extracted:***	Nov-30-12 12:10		Nov-30-12 12:10		Nov-30-12 12:10		Nov-30-12 12:10		Nov-30-12 12:10			
	Analyzed:	Nov-30-12 18:32		Nov-30-12 19:00		Nov-30-12 19:05		Nov-30-12 19:23		Nov-30-12 19:28			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Iron		ND	0.200	ND	0.200	119	0.200	ND	0.200	217	0.200		
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Nov-21-12 12:57		Nov-21-12 13:14		Nov-21-12 14:05		Nov-21-12 14:22		Nov-21-12 14:40			
	Analyzed:	Nov-21-12 12:57		Nov-21-12 13:14		Nov-21-12 14:05		Nov-21-12 14:22		Nov-21-12 14:40			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Bromide		5.20	0.400	12.8	1.00	387	4.00	5.75	1.00	462	4.00		
Sulfate		407	1.00	1360	2.50	4630	10.0	815	2.50	4640	10.0		
Sulfide by SM4500-S-F-00 SUB: TX104704215	***Extracted:***												
	Analyzed:	Nov-21-12 14:03		Nov-21-12 14:05		Nov-21-12 14:06		Nov-21-12 14:07		Nov-21-12 14:08			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Sulfide, total		ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00		
TOC by SM 5310C SUB: TX104704215	***Extracted:***												
	Analyzed:	Nov-28-12 16:34		Nov-28-12 16:50		Nov-28-12 17:18		Nov-28-12 17:33		Nov-28-12 18:20			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Total Organic Carbon		1.66	1.00	4.90	1.00	27.2	1.00	2.88	1.00	17.4	1.00		

Certificate of Analysis Summary 452802

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018-2012-01
Contact: Mike Wisniowiecki
Project Location: TX

Date Received in Lab: Tue Nov-20-12 09:12 am
Report Date: 06-DEC-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	452802-001		452802-002		452802-003		452802-004		452802-005		452802-006	
	Field Id:	MW96111912		MW97111912		IW029111912		MW7A111912		Dup1111912		MW7A(Metal Strip)	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Nov-19-12 15:00		Nov-19-12 16:40		Nov-19-12 17:20		Nov-19-12 18:55		Nov-19-12 00:00		Nov-19-12 00:00	
Total Metals by EPA 6010B SUB: TX104704215	***Extracted:***	Nov-26-12 10:30		Nov-26-12 10:30		Nov-26-12 10:30		Nov-26-12 10:30		Nov-26-12 10:30		Nov-29-12 11:45	
	Analyzed:	Nov-26-12 19:25		Nov-26-12 19:42		Nov-26-12 19:48		Nov-26-12 19:54		Nov-26-12 19:59		Nov-29-12 17:01	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chromium		0.0177	0.0100	0.562	0.0100	ND	0.0500	0.327	0.0100	ND	0.0500	0.305	0.0100
Iron		ND	0.200	ND	0.200	58.1	1.00	ND	0.200	167	1.00	ND	0.200
Sodium		155	0.500	515	0.500	4650	2.50	333	0.500	5660	25.0	337	0.500

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Blank Spike Recovery

Project Name: N. Eunice

Work Order #: 452802 **Project ID:** 073018-2012-01

Lab Batch #: 901801 **Sample:** 901801-1-BKS **Matrix:** Water

Date Analyzed: 11/20/2012 **Date Prepared:** 11/20/2012 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0216	86	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 452802 **Project ID:** 073018-2012-01

Analyst: MKO **Date Prepared:** 11/30/2012 **Date Analyzed:** 11/30/2012

Lab Batch ID: 901937 **Sample:** 630572-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Dissolved Metals per ICP by SW846 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Iron	<0.0300	5.00	4.77	95	5.00	4.67	93	2	75-125	25	

Analyst: JOL **Date Prepared:** 11/21/2012 **Date Analyzed:** 11/21/2012

Lab Batch ID: 901453 **Sample:** 630313-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	10.0	9.72	97	10.0	10.5	105	8	90-110	10	
Sulfate	<0.500	50.0	52.8	106	50.0	54.3	109	3	90-110	20	

Analyst: TTE **Date Prepared:** 11/21/2012 **Date Analyzed:** 11/21/2012

Lab Batch ID: 901374 **Sample:** 901374-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	1000	100	1000	1000	100	0	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 452802 **Project ID:** 073018-2012-01

Analyst: JOL **Date Prepared:** 11/28/2012 **Date Analyzed:** 11/28/2012

Lab Batch ID: 901786 **Sample:** 901786-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	<1.00	15.0	14.4	96	15.0	14.5	97	1	90-110	20	

Analyst: MKO **Date Prepared:** 11/26/2012 **Date Analyzed:** 11/26/2012

Lab Batch ID: 901583 **Sample:** 630364-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.973	97	1.00	0.943	94	3	80-120	20	
Iron	<0.200	5.00	4.82	96	5.00	4.74	95	2	80-120	20	
Sodium	<0.500	25.0	24.6	98	25.0	23.9	96	3	80-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 452802
Project ID: 073018-2012-01
Analyst: MKO
Date Prepared: 11/29/2012
Date Analyzed: 11/29/2012
Lab Batch ID: 901811
Sample: 630521-1-BKS
Batch #: 1
Matrix: Water
Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.912	91	1.00	0.887	89	3	80-120	20	
Iron	<0.200	5.00	4.90	98	5.00	4.70	94	4	80-120	20	
Sodium	<0.500	25.0	24.1	96	25.0	23.5	94	3	80-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS Recoveries

Project Name: N. Eunice

Work Order #: 452802

Lab Batch #: 901453 **Project ID:** 073018-2012-01

Date Analyzed: 11/21/2012 **Date Prepared:** 11/21/2012 **Analyst:** JOL

QC- Sample ID: 452799-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	3.84	20.0	25.1	106	80-120	
Sulfate	282	100	393	111	80-120	

Lab Batch #: 901453

Date Analyzed: 11/21/2012 **Date Prepared:** 11/21/2012 **Analyst:** JOL

QC- Sample ID: 452848-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	3.87	20.0	26.0	111	80-120	
Sulfate	414	100	538	124	80-120	X

Lab Batch #: 901786

Date Analyzed: 11/28/2012 **Date Prepared:** 11/28/2012 **Analyst:** JOL

QC- Sample ID: 452802-004 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	2.88	15.0	17.2	95	90-110	

Lab Batch #: 901786

Date Analyzed: 11/28/2012 **Date Prepared:** 11/28/2012 **Analyst:** JOL

QC- Sample ID: 452928-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	23.0	15.0	36.6	91	90-110	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Version: 1.%

Form 3 - MS Recoveries

Project Name: N. Eunice

Work Order #: 452802
Lab Batch #: 901811
Project ID: 073018-2012-01
Date Analyzed: 11/29/2012
Date Prepared: 11/29/2012
Analyst: MKO
QC- Sample ID: 452802-006 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chromium	0.305	1.00	1.15	85	75-125	
Iron	<0.200	5.00	4.36	87	75-125	
Sodium	337	25.0	356	76	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 452802 **Project ID:** 073018-2012-01

Lab Batch ID: 901801 **QC- Sample ID:** 452802-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 11/20/2012 **Date Prepared:** 11/20/2012 **Analyst:** WRU
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	0.200	0.236	118	0.200	0.237	119	0	80-120	20	

Lab Batch ID: 901937 **QC- Sample ID:** 452802-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 11/30/2012 **Date Prepared:** 11/30/2012 **Analyst:** MKO
Reporting Units: mg/L

Dissolved Metals per ICP by SW846 6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Iron	<0.0300	5.00	4.50	90	5.00	4.68	94	4	75-125	25	

Lab Batch ID: 901583 **QC- Sample ID:** 452853-003 S **Batch #:** 1 **Matrix:** Soil
Date Analyzed: 11/26/2012 **Date Prepared:** 11/26/2012 **Analyst:** MKO
Reporting Units: mg/L

Total Metals by EPA 6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0500	5.00	4.83	97	5.00	4.82	96	0	75-125	20	
Iron	<1.00	25.0	23.2	93	25.0	23.1	92	0	75-125	20	
Sodium	1340	125	1510	136	125	1490	120	1	75-125	25	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: N. Eunice

Work Order #: 452802

Lab Batch #: 901801 **Project ID:** 073018-2012-01

Date Analyzed: 11/20/2012 13:35 **Date Prepared:** 11/20/2012 **Analyst:** WRU

QC- Sample ID: 452802-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 901374

Date Analyzed: 11/21/2012 14:04 **Date Prepared:** 11/21/2012 **Analyst:** TTE

QC- Sample ID: 452802-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

XENCO Laboratories

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☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 327873 Page 1 of 1

Company-City CRA - Midland	**Phone** (432)686-0086
Project Name-Location	☐ Previously done at XENCO **Project ID** 073018-202-01
Proj. State (TX) AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other	**Proj. Manager (PM)** mike wisniowiecki
E-mail Results to ☒PM and mwisniowiecki@craworld.com	**Fax No:** (432)686-0186
Invoice to ☐Accounting ☐Inc. Invoice with Final Report ☐Invoice must have a P.O. Bill to:	
Quote/Pricing:	**P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP** QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:	
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)	
Sampler Name Justin Nixon	**Signature** Justin Nixon

Lab Only: 452802

TAT: ASAP 5h 12h 24h 48h 3d 5d (7d) 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives
1	mw96111912	11-19-12	1500		W		X	5			
2	mw97111912		1640								
3	Iw 029111912		1720								
4	mw7A111912		1855								
5	Dup 111912		—								
6	mw7A (metals trip)		—					1			
7											
8											
9											
10											

VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs
VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:
PAHs SIM 8310 8270
TX-1005 DRO GRO MA EPH MA VPH
SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL
OC Pesticides PCBs Herbicides OP Pesticides
Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2
SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)
EDB / DBCP

See Attached SSOW

TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d
Addn: PAH above mg/L W, mg/Kg S Highest Hit
Hold Samples (Surcharges will apply and are pre-approved)

Remarks
Sample Clean-ups are pre-approved as needed
Addn: Date Rcv. by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) Justin Nixon	11-20-12 8:45	2)	11-20-12 09:12
3)		4)	
5)		6)	

Total Containers per COC: 26 Cooler Temp: 4.5 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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CRA Simplified Scope of Work (SSOW)/Laboratory Services Purchase Order

SSOW Ref. Code
073018_20120823

Project Name: Chevron-North Eunice
Phase/Study Title: Post Injection Monitoring
CRA Project No./Phase/Task: 073018
Event Description: Pilot Study - GW Sampling
Project Location: Eunice, New Mexico

Item	Sample Matrix	Analytical Parameters	Analytical Methods	Holding Time	Unit Prices	Applicable Surcharge Multiplier [1]	Extended Prices	Estimated Sample Qty/Event	Field QC Samples: MS	MSD	Lab Dup	Trip Blk	RBlk	Fld Dup	Other	Total Sample Qty.	Billable Samples	Estimated Cost/Event
1	water	Total, Chromium, Iron, Sodium	SW-846 6010B	180 days	$ 30.00	1.00	$ 30.00	4				1		1		6	6	$180.00
2	water	Hexavalent Chromium	SW-846 7196A	24 hours	$ 25.00	1.00	$ 25.00	4						1		5	5	$125.00
3	water	Anions (SO4, Br)	E 300	28 days	$ 40.00	1.00	$ 40.00	4						1		5	5	$200.00
4	water	Sulfide	SM4500	7 days	$ 40.00	1.00	$ 40.00	4						1		5	5	$200.00
5	water	Total Organic Carbon TOC	SM5310	28 days	$ 35.00	1.00	$ 35.00	4						1		5	5	$175.00
6	water	Dissolved Iron	SW-846 6010B	180 days	$ 10.00	1.00	$ 10.00	4						1		5	5	$50.00

SSOW COVERS 3 MONTLY SAMPLING EVENTS

[1] Explanation of Surcharges:

Estimated Event Subtotal:	$930.00
Laboratory Surcharge(s):	$0.00
Estimated Event Total Costs:	$2,790.00

Lab Contracting Summary:

Governing Terms and Conditions

- ☐ **Master Agreement Number:**
- ☑ **Exhibit "A" Terms and Conditions**
- ☐ **Client Contract**

CRA Purchase Order Number:
Name of Client:
Other Additional Insureds:
Governing Law: Texas
Currency: US
Address Invoice to: CRA c/o Claudia Ramos, 6320 Rothway, Suite 100, Houston, TX 77040

Claudia Ramos — (authorized CRA signature) — 11/13/2012 (date signed)

Nicholas Straccione — (authorized Vendor signature) — 11/13/2012 (date signed)

Typed name constitutes authorized signature.

Vendor to provide and deliver all items or services set out or otherwise described below subject to the governing terms and conditions checked above. This Purchase Order expressly limits acceptance to such terms and conditions. Any additional or different terms proposed by Vendor are rejected unless expressly agreed to in writing by CRA. To accept this Purchase Order, Vendor must sign, date, and return one copy of this page to issuer before starting any work. CRA's receipt of Signature of this Purchase Order may be sent by facsimile (with confirmation by transmitting machine) and/or transmitted by portable document file (PDF) which shall be treated as an original signature, and any such signature, facsimile, PDF file, or copy of this signed Purchase Order shall be valid as an original and shall be binding as if it were the original. Show Purchase Order No. on all correspondence, insurance certificates, invoices, and delivery papers.

200016-PO(QSF-024-Lab)-Rev.10 1/18/2011

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 11/20/2012 09:12:00 AM

Work Order #: 452802

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: 11/20/2012

Checklist reviewed by: _____ Date: 11/20/2012

Analytical Report 454667

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

N. Eunice

073018

08-JAN-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

08-JAN-13

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **454667**
N. Eunice
Project Address: TX

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 454667. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 454667 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 454667

Conestoga Rovers & Associates, Midland, TX

N. Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-096-122112	W	12-21-12 13:40		454667-001
MW-097-122112	W	12-21-12 12:20		454667-002
IW-029-122179	W	12-21-12 12:40		454667-003
MW-007A-122112	W	12-21-12 13:40		454667-004
Dup-1-122112	W	12-21-12 00:00		454667-005

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates
Project Name: N. Eunice

Project ID:	*073018*	*Report Date:*	*08-JAN-13*
Work Order Number(s):	*454667*	*Date Received:*	*12/21/2012*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-903782 Inorganic Anions by EPA 300/300.1
E300

Batch 903782, Sulfate recovered below QC limits in the Matrix Spike.
Samples affected are: 454667-004, -002, -001, -005, -003.
The Laboratory Control Sample for Sulfate is within laboratory Control Limits

Batch: LBA-903797 TOC by SM 5310C
SM5310C

Batch 903797, Total Organic Carbon recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 454667-004, -002, -001, -005, -003.
The Laboratory Control Sample for Total Organic Carbon is within laboratory Control Limits

Certificate of Analysis Summary 454667

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: TX

Date Received in Lab: Fri Dec-21-12 03:30 pm
Report Date: 08-JAN-13
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	454667-001		454667-002		454667-003		454667-004		454667-005	
	Field Id:	MW-096-122112		MW-097-122112		IW-029-122179		MW-007A-122112		Dup-1-122112	
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER		WATER	
	Sampled:	Dec-21-12 13:40		Dec-21-12 12:20		Dec-21-12 12:40		Dec-21-12 13:40		Dec-21-12 00:00	
Chromium, Hexavalent by SW 7196A	***Extracted:***										
	Analyzed:	Dec-21-12 16:40		Dec-21-12 16:40		Dec-21-12 16:40		Dec-21-12 16:40		Dec-21-12 16:40	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Hexavalent Chromium		ND	0.0100	0.183	0.0100	0.161	0.100	0.693	0.100	0.180	0.0100
Dissolved Metals per ICP by SW846 6010B SUB: TX104704215	***Extracted:***	Dec-28-12 10:30		Dec-28-12 10:30		Dec-28-12 10:30		Dec-28-12 10:30		Dec-28-12 10:30	
	Analyzed:	Dec-28-12 19:06		Dec-28-12 19:12		Dec-28-12 19:18		Dec-28-12 19:24		Dec-28-12 19:29	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Iron		ND	0.200	ND	0.200	99.3	0.200	ND	0.200	ND	0.200
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Dec-26-12 21:08		Dec-26-12 21:25		Dec-26-12 21:42		Dec-26-12 21:59		Dec-26-12 22:16	
	Analyzed:	Dec-26-12 21:08		Dec-26-12 21:25		Dec-26-12 21:42		Dec-26-12 21:59		Dec-26-12 22:16	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Bromide		3.32	0.100	7.80	0.100	250	1.00	4.07	0.100	10.3	0.100
Chloride		205	2.00	930 D	20.0	702	20.0	641 D	20.0	964 D	20.0
Sulfate		306	2.00	1610 D	20.0	2930	20.0	1080 D	20.0	1570 D	20.0
Sulfide by SM4500-S-F-00 SUB: TX104704215	***Extracted:***										
	Analyzed:	Dec-28-12 09:06		Dec-28-12 09:08		Dec-28-12 09:10		Dec-28-12 09:12		Dec-28-12 09:14	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Sulfide, total		ND	5.00	ND	5.00	5600	2500	ND	5.00	ND	5.00
TOC by SM 5310C SUB: TX104704215	***Extracted:***										
	Analyzed:	Dec-27-12 17:53		Dec-27-12 18:08		Dec-27-12 18:36		Dec-27-12 20:21		Dec-27-12 20:39	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Organic Carbon		1.84	1.00	6.71	1.00	52.2	1.00	4.41	1.00	6.86	1.00

Certificate of Analysis Summary 454667

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: TX

Date Received in Lab: Fri Dec-21-12 03:30 pm
Report Date: 08-JAN-13
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	454667-001		454667-002		454667-003		454667-004		454667-005	
	Field Id:	MW-096-122112		MW-097-122112		IW-029-122179		MW-007A-122112		Dup-1-122112	
	Depth:										
	Matrix:	WATER		WATER		WATER		WATER		WATER	
	Sampled:	Dec-21-12 13:40		Dec-21-12 12:20		Dec-21-12 12:40		Dec-21-12 13:40		Dec-21-12 00:00	
Total Metals by EPA 6010B SUB: TX104704215	***Extracted:***	Dec-27-12 11:00		Dec-27-12 11:00		Dec-27-12 11:00		Dec-27-12 11:00		Dec-27-12 11:00	
	Analyzed:	Dec-27-12 16:40		Dec-27-12 17:08		Dec-27-12 17:14		Dec-27-12 17:31		Dec-27-12 17:37	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chromium		0.0149	0.0100	0.207	0.0100	0.0214	0.0100	0.633	0.0100	0.213	0.0100
Iron		ND	0.200	ND	0.200	164	20.0	ND	0.200	ND	0.200
Sodium		144	0.500	574	0.500	4610	50.0	344	0.500	598	0.500

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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4143 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: N. Eunice

Work Order #: 454667 **Project ID:** 073018

Lab Batch #: 904183 **Sample:** 904183-1-BKS **Matrix:** Water

Date Analyzed: 12/21/2012 **Date Prepared:** 12/21/2012 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0222	89	80-120	

Lab Batch #: 903797 **Sample:** 903797-1-BKS **Matrix:** Water

Date Analyzed: 12/27/2012 **Date Prepared:** 12/27/2012 **Analyst:** JOL

Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	15.0	14.2	95	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 454667 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 12/28/2012 **Date Analyzed:** 12/28/2012

Lab Batch ID: 903998 **Sample:** 631828-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Dissolved Metals per ICP by SW846 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Iron	<0.0300	5.00	5.14	103	5.00	5.04	101	2	75-125	25	

Analyst: JOL **Date Prepared:** 12/26/2012 **Date Analyzed:** 12/26/2012

Lab Batch ID: 903782 **Sample:** 631805-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.100	10.0	9.76	98	10.0	9.41	94	4	90-110	10	
Sulfate	<2.00	50.0	53.2	106	50.0	51.5	103	3	90-110	20	

Analyst: PRB **Date Prepared:** 12/28/2012 **Date Analyzed:** 12/28/2012

Lab Batch ID: 903817 **Sample:** 903817-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	960	96	1000	960	96	0	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 454667
Project ID: 073018
Analyst: MKO
Date Prepared: 12/27/2012
Date Analyzed: 12/27/2012
Lab Batch ID: 903812
Sample: 631777-1-BKS
Batch #: 1
Matrix: Water
Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.940	94	1.00	0.932	93	1	80-120	20	
Iron	<0.200	5.00	4.75	95	5.00	4.65	93	2	80-120	20	
Sodium	<0.500	25.0	24.1	96	25.0	23.9	96	1	80-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS Recoveries

Project Name: N. Eunice

Work Order #: 454667

Lab Batch #: 903782 **Project ID:** 073018

Date Analyzed: 12/26/2012 **Date Prepared:** 12/26/2012 **Analyst:** JOL

QC- Sample ID: 454268-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	1.22	10.0	10.3	91	80-120	
Sulfate	64.5	50.0	103	77	80-120	X

Lab Batch #: 903782

Date Analyzed: 12/26/2012 **Date Prepared:** 12/26/2012 **Analyst:** JOL

QC- Sample ID: 454366-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	3.84	50.0	48.6	90	80-120	
Sulfate	<10.0	250	256	102	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 454667 **Project ID:** 073018

Lab Batch ID: 904183 **QC- Sample ID:** 454667-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 12/21/2012 **Date Prepared:** 12/21/2012 **Analyst:** WRU
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	0.200	0.238	119	0.200	0.239	120	0	80-120	20	

Lab Batch ID: 903998 **QC- Sample ID:** 454686-025 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 12/28/2012 **Date Prepared:** 12/28/2012 **Analyst:** MKO
Reporting Units: mg/L

Dissolved Metals per ICP by SW846 6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Iron	0.0407	5.00	5.22	104	5.00	5.23	104	0	75-125	25	

Lab Batch ID: 903797 **QC- Sample ID:** 453975-004 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 12/27/2012 **Date Prepared:** 12/27/2012 **Analyst:** JOL
Reporting Units: mg/L

TOC by SM 5310C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	1.76	15.0	11.6	66	15.0	12.5	72	7	90-110	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 454667 **Project ID:** 073018

Lab Batch ID: 903797 **QC- Sample ID:** 454667-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 12/27/2012 **Date Prepared:** 12/27/2012 **Analyst:** JOL

Reporting Units: mg/L

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Total Organic Carbon	52.2	15.0	64.9	85	15.0	64.6	83	0	90-110	20	X

Lab Batch ID: 903812 **QC- Sample ID:** 454667-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 12/27/2012 **Date Prepared:** 12/27/2012 **Analyst:** MKO

Reporting Units: mg/L

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Chromium	0.0149	1.00	0.925	91	1.00	0.928	91	0	75-125	20	
Iron	<0.200	5.00	4.54	91	5.00	4.48	90	1	75-125	20	
Sodium	144	25.0	167	92	25.0	166	88	1	75-125	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Version: 1.%

Final 1.000

Sample Duplicate Recovery

Project Name: N. Eunice

Work Order #: 454667

Lab Batch #: 904183 **Project ID:** 073018

Date Analyzed: 12/21/2012 16:40 **Date Prepared:** 12/21/2012 **Analyst:** WRU

QC- Sample ID: 454667-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 903817

Date Analyzed: 12/28/2012 09:16 **Date Prepared:** 12/28/2012 **Analyst:** PRB

QC- Sample ID: 454667-005 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☑ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 327876 Page 1 of 1

Company-City CRA / Midland	**Phone** (432) 686-0086
Project Name-Location	☐ Previously done at XENCO **Project ID** 073018
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other	**Proj. Manager (PM)** Mike Bizzinkiewicz
E-mail Results to BFord@craworld.com	☐ PM and **Fax No:** (432) 686-0186
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O. Bill to:	
Quote/Pricing:	**P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP** QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:	
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)	
Sampler Name Justin Mikan	**Signature** Justin Mikan

Lab Only: 454667

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	Total metals Sw846 - 6010B	Anions 300E	Sulfides SM 4500	Hexchrome Sw 846 - 7196A - 24hr	TOC's SM 5310	Dissolved iron Sw 846 - 6010B	TAT ASAP 5h	12h	24h	48h	3d	7d	10d	21d	Addn: PAH above	mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	Addn:	Date	Rcv. by:	From:	
1	MW-096-122112	12-21	1340		W		X	6	V	V	V										X	X	X	X	X	X																	1
2	MW-097-122112	12-21	1220		W		X	5	V	V	V										X	V	X	X	X	X																	2
3	MW-029-122112	12-21	1240		W		X	5	V	V	V										X	X	X	X	X	V																	3
4	MW-007A-122112	12-21	1340		W		X	5	V	V	V										X	X	X	X	X	X																	4
5	Dup-1-122112	12-21-12	—		W		X	5	V	V	V										X	V	X	X	X	X																	5
6																																											6
7																																											7
8																																											8
9																																											9
10																																											10

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) Justin Mikan	12-21-12 15:30	2) Shawnell Smith	12/21/12 15:30
3)		4)	
5)		6)	

Total Containers per COC: 26 Cooler Temp: 15.0 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 12/21/2012 03:30:00 PM

Work Order #: 454667

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	15
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 456341

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

N. Eunice

073018

05-FEB-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

05-FEB-13

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **456341**
N. Eunice
Project Address: NM

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 456341. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 456341 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 456341

Conestoga Rovers & Associates, Midland, TX

N. Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-097-012413	W	01-24-13 10:45		456341-001
IW029-012413	W	01-24-13 12:20		456341-002
MW-007A012413	W	01-24-13 14:00		456341-003
Dup	W	01-24-13 00:00		456341-004

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-905554 Inorganic Anions by EPA 300/300.1
E300

Batch 905554, Sulfate recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 456341-003, -002, -004, -001.
The Laboratory Control Sample for Sulfate is within laboratory Control Limits

Batch: LBA-905593 Total Metals by EPA 6010B
SW6010B

Batch 905593, Sodium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 456341-003, -002, -004, -001.
The Laboratory Control Sample for Sodium is within laboratory Control Limits

Batch: LBA-905761 TOC by SM 5310C
SM5310C

Batch 905761, Total Organic Carbon recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 456341-003, -002, -004, -001.
The Laboratory Control Sample for Total Organic Carbon is within laboratory Control Limits

Certificate of Analysis Summary 456341

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Thu Jan-24-13 04:15 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	456341-001		456341-002		456341-003		456341-004					
	Field Id:	MW-097-012413		IW029-012413		MW-007A012413		Dup					
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER					
	Sampled:	Jan-24-13 10:45		Jan-24-13 12:20		Jan-24-13 14:00		Jan-24-13 00:00					
Chromium, Hexavalent by SW 7196A	***Extracted:***												
	Analyzed:	Jan-25-13 10:25		Jan-25-13 10:25		Jan-25-13 10:25		Jan-25-13 10:25					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Hexavalent Chromium		0.272	0.0100	0.197	0.100	0.254	0.0100	0.164	0.0100				
Dissolved Metals per ICP by SW846 6010B SUB: TX104704215	***Extracted:***	Jan-25-13 11:30		Jan-25-13 11:30		Jan-25-13 11:30		Jan-25-13 11:30					
	Analyzed:	Jan-25-13 17:09		Jan-25-13 17:15		Jan-25-13 17:21		Jan-25-13 17:26					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Iron		ND	0.200	108	0.200	ND	0.200	ND	0.200				
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Jan-25-13 12:34		Jan-25-13 13:09		Jan-25-13 13:43		Jan-25-13 14:00					
	Analyzed:	Jan-25-13 12:34		Jan-25-13 13:09		Jan-25-13 13:43		Jan-25-13 14:00					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Bromide		18.4	1.00	183	1.00	6.47	0.500	14.1	1.00				
Sulfate		1590	10.0	2930	10.0	518	5.00	1570	10.0				
Sulfide by SM4500-S-F-00 SUB: TX104704215	***Extracted:***												
	Analyzed:	Jan-29-13 17:52		Jan-29-13 17:54		Jan-29-13 17:56		Jan-29-13 17:58					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Sulfide, total		ND	5.00	1600	250	ND	5.00	ND	5.00				
TOC by SM 5310C SUB: TX104704215	***Extracted:***												
	Analyzed:	Jan-29-13 19:44		Jan-29-13 20:31		Jan-29-13 22:06		Jan-29-13 22:21					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Total Organic Carbon		6.33	1.00	28.7	1.00	2.95	1.00	6.36	1.00				

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 456341

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Thu Jan-24-13 04:15 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	456341-001		456341-002		456341-003		456341-004					
	Field Id:	MW-097-012413		IW029-012413		MW-007A012413		Dup					
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER					
	Sampled:	Jan-24-13 10:45		Jan-24-13 12:20		Jan-24-13 14:00		Jan-24-13 00:00					
Total Metals by EPA 6010B **SUB: TX104704215**	***Extracted:***	Jan-25-13 11:30		Jan-25-13 11:30		Jan-25-13 11:30		Jan-25-13 11:30					
	Analyzed:	Jan-25-13 16:06		Jan-25-13 16:34		Jan-25-13 16:40		Jan-25-13 16:57					
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL				
Chromium		0.307	0.0100	0.0125	0.0100	0.258	0.0100	0.182	0.0100				
Iron		ND	0.200	155	0.200	ND	0.200	ND	0.200				
Sodium		635	50.0	3580	50.0	208	50.0	602	50.0				

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: N. Eunice

Work Order #: 456341 **Project ID:** 073018

Lab Batch #: 905888 **Sample:** 905888-1-BKS **Matrix:** Water
Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** WRU
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0229	92	80-120	

Lab Batch #: 905554 **Sample:** 632940-1-BKS **Matrix:** Water
Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Bromide	<0.100	10.0	10.4	104	90-110	
Sulfate	<1.00	50.0	52.4	105	90-110	

Lab Batch #: 905761 **Sample:** 905761-1-BKS **Matrix:** Water
Date Analyzed: 01/29/2013 **Date Prepared:** 01/29/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	15.0	14.7	98	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 456341 **Project ID:** 073018

Analyst: DHE **Date Prepared:** 01/29/2013 **Date Analyzed:** 01/29/2013

Lab Batch ID: 905751 **Sample:** 905751-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	960	96	1000	1000	100	4	75-120	20	

Analyst: MKO **Date Prepared:** 01/25/2013 **Date Analyzed:** 01/25/2013

Lab Batch ID: 905593 **Sample:** 632888-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.948	95	1.00	0.948	95	0	80-120	20	
Iron	<0.200	5.00	4.78	96	5.00	4.68	94	2	80-120	20	
Sodium	<0.500	25.0	24.4	98	25.0	24.3	97	0	80-120	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 456341 **Project ID:** 073018

Lab Batch ID: 905888 **QC- Sample ID:** 456341-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	0.272	0.200	0.508	118	0.200	0.510	119	0	80-120	20	

Lab Batch ID: 905554 **QC- Sample ID:** 456335-001 S **Batch #:** 1 **Matrix:** Drinking Water

Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** RKO

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	0.814	10.0	10.5	97	10.0	10.5	97	0	80-120	20	
Sulfate	1.29	50.0	56.3	110	50.0	57.1	112	1	80-120	20	

Lab Batch ID: 905554 **QC- Sample ID:** 456341-004 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** RKO

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	14.1	100	112	98	100	112	98	0	80-120	20	
Sulfate	1570	500	1770	40	500	1770	40	0	80-120	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 456341 **Project ID:** 073018

Lab Batch ID: 905761 **QC- Sample ID:** 456128-001 S **Batch #:** 1 **Matrix:** Ground Water

Date Analyzed: 01/29/2013 **Date Prepared:** 01/29/2013 **Analyst:** RKO

Reporting Units: mg/L

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Total Organic Carbon	1.64	15.0	16.2	97	15.0	16.2	97	0	90-110	20	

Lab Batch ID: 905761 **QC- Sample ID:** 456341-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/29/2013 **Date Prepared:** 01/29/2013 **Analyst:** RKO

Reporting Units: mg/L

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Total Organic Carbon	28.7	15.0	41.1	83	15.0	41.1	83	0	90-110	20	X

Lab Batch ID: 905593 **QC- Sample ID:** 456341-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** MKO

Reporting Units: mg/L

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Chromium	<0.0100	1.00	1.20	120	1.00	1.18	118	2	75-125	20	
Iron	<0.200	5.00	4.72	94	5.00	4.67	93	1	75-125	20	
Sodium	635	25.0	625	0	25.0	611	0	2	75-125	25	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: N. Eunice

Work Order #: 456341

Lab Batch #: 905888 **Project ID:** 073018

Date Analyzed: 01/25/2013 10:25 **Date Prepared:** 01/25/2013 **Analyst:** WRU

QC- Sample ID: 456341-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	0.272	0.272	0	20	

Lab Batch #: 905751

Date Analyzed: 01/29/2013 18:00 **Date Prepared:** 01/29/2013 **Analyst:** DHE

QC- Sample ID: 456341-004 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☒ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**
☐ 842 Cantwell, Corpus Christi, TX 78408 **361-8840371**

Serial #: 307983 Page 1 of 1

Company-City CRA - Midland **Phone** 432-686-0086

Lab Only: 456341

Project Name-Location NEunice, NM ☐ Previously done at XENCO **Project ID** 073018

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other

Proj. Manager (PM) Mike Wisniowiecki

E-mail Results to ☒ PM and MWisniowiecki@Craworld.com **Fax No:** 432-686-0186

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name Justin Nixon **Signature**

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VCOs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VCO's PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	Sw-846 6010B	Hex Chromium Sw-846 7196A	Anions E300	Sulfide SM 4500	TOC SM 5310	Dissolved Iron Sw-846 6010B	TAT ASAP 5h 12h (24h) 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	Addn: Date Rcv. by: From:	
1	MW097012413	1-24-13	1045					5													X	X	X	X	X	X	X					1
2	DW029012413	"	1220					5													"	"	"	"	"	"	X					2
3	MW007A012413	"	1400					5													"	"	"	"	"	"	X					3
4	DUP	"	—					~~5~~													"	"	"	"	"	"	X					4
5																																	5
6																																	6
7																																	7
8																																	8
9																																	9
10																																	10

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) Justin Nixon	1-24-13 16:15	2)	
3)		4)	
5)		6) Shaunee Smith	1/24/13 16:15

Total Containers per COC: 20 Cooler Temp: 17.5 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**)
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

Committed to Excellence in Service and Quality *www.xenco.com*

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 01/24/2013 04:15:00 PM

Work Order #: 456341

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	17.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 456437

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

N. Eunice

073018

05-FEB-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

05-FEB-13

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **456437**
N. Eunice
Project Address: NM

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 456437. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 456437 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 456437

Conestoga Rovers & Associates, Midland, TX

N. Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-96012513	W	01-25-13 09:50		456437-001
IW030012513	W	01-25-13 11:50		456437-002
MW-895A012513	W	01-25-13 12:50		456437-003
IW28012513	W	01-25-13 13:20		456437-004
MW009A012513	W	01-25-13 14:00		456437-005
DUP2 012513	W	01-25-13 00:00		456437-006
METAL QCI(MW96)	W	01-25-13 00:00		456437-007
IW28 METAL QC2	W	01-25-13 13:20		456437-008

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-905617 Inorganic Anions by EPA 300/300.1
E300

Batch 905617, Sulfate recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 456437-001, -003, -004, -006, -002, -005.
The Laboratory Control Sample for Sulfate is within laboratory Control Limits

Batch: LBA-905964 Chromium, Hexavalent by SW 7196A
SW7196A

Batch 905964, Hexavalent Chromium recovered above QC limits in the Matrix Spike.
Samples affected are: 456437-001, -003, -004, -006, -002, -005.
The Laboratory Control Sample for Hexavalent Chromium is within laboratory Control Limits

Certificate of Analysis Summary 456437

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Fri Jan-25-13 04:00 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	456437-001		456437-002		456437-003		456437-004		456437-005		456437-006	
	Field Id:	MW-96012513		IW030012513		MW-895A012513		IW28012513		MW009A012513		DUP2 012513	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jan-25-13 09:50		Jan-25-13 11:50		Jan-25-13 12:50		Jan-25-13 13:20		Jan-25-13 14:00		Jan-25-13 00:00	
Chromium, Hexavalent by SW 7196A	***Extracted:***												
	Analyzed:	Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Hexavalent Chromium		ND	0.0100	0.448	0.200	0.0256	0.0100	0.0563	0.0100	0.652	0.100	0.0556	0.0100
Dissolved Metals per ICP by SW846 6010B SUB: TX104704215	***Extracted:***	Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00	
	Analyzed:	Feb-02-13 01:16		Feb-02-13 01:22		Feb-02-13 01:27		Feb-02-13 01:33		Feb-02-13 01:50		Feb-02-13 01:55	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Iron		ND	0.200	82.9	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Jan-26-13 22:01		Jan-26-13 22:18		Jan-26-13 22:36		Jan-26-13 22:53		Jan-26-13 23:10		Jan-26-13 23:27	
	Analyzed:	Jan-26-13 22:01		Jan-26-13 22:18		Jan-26-13 22:36		Jan-26-13 22:53		Jan-26-13 23:10		Jan-26-13 23:27	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Bromide		ND	0.200	149	1.00	ND	0.200	ND	1.00	ND	1.00	ND	1.00
Sulfate		318	2.00	ND	10.0	206	2.00	754	10.0	687	10.0	738	10.0
Sulfide by SM4500-S-F-00 SUB: TX104704215	***Extracted:***												
	Analyzed:	Jan-30-13 16:34		Jan-30-13 16:36		Jan-30-13 16:38		Jan-30-13 16:40		Jan-30-13 16:42		Jan-30-13 16:44	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Sulfide, total		ND	50.0	ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00
TOC by SM 5310C SUB: TX104704215	***Extracted:***												
	Analyzed:	Jan-30-13 14:53		Jan-30-13 17:42		Jan-30-13 15:25		Jan-30-13 16:02		Jan-30-13 16:17		Jan-30-13 16:32	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Organic Carbon		1.47	1.00	1800	100	3.00	1.00	3.99	1.00	2.84	1.00	4.05	1.00

Certificate of Analysis Summary 456437

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Fri Jan-25-13 04:00 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	456437-001		456437-002		456437-003		456437-004		456437-005		456437-006	
	Field Id:	MW-96012513		IW030012513		MW-895A012513		IW28012513		MW009A012513		DUP2 012513	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jan-25-13 09:50		Jan-25-13 11:50		Jan-25-13 12:50		Jan-25-13 13:20		Jan-25-13 14:00		Jan-25-13 00:00	
Total Metals by EPA 6010B **SUB: TX104704215**	***Extracted:***	Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00	
	Analyzed:	Feb-01-13 23:52		Feb-02-13 00:20		Feb-02-13 00:25		Feb-02-13 00:42		Feb-02-13 00:48		Feb-02-13 00:53	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chromium		ND	0.0100	0.0684	0.0100	0.0298	0.0100	0.0609	0.0100	0.628	0.0100	0.0598	0.0100
Iron		ND	0.200	103	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Sodium		153	0.500	160	0.500	205	0.500	389	0.500	289	0.500	381	0.500

Certificate of Analysis Summary 456437

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Fri Jan-25-13 04:00 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested							
	Lab Id:	456437-007		456437-008			
	Field Id:	METAL QCI(MW96)		IW28 METAL QC2			
	Depth:						
	Matrix:	WATER		WATER			
	Sampled:	Jan-25-13 00:00		Jan-25-13 13:20			
RCRA Metals by SW846-6010B SUB: TX104704215	***Extracted:***	Feb-01-13 08:00		Feb-01-13 08:00			
	Analyzed:	Feb-02-13 00:59		Feb-02-13 01:05			
	Units/RL:	mg/L	RL	mg/L	RL		
Chromium		ND	0.0100	0.0608	0.0100		
Iron		ND	0.200	ND	0.200		
Sodium		152	0.500	381	0.500		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: N. Eunice

Work Order #: 456437 **Project ID:** 073018

Lab Batch #: 905964 **Sample:** 905964-1-BKS **Matrix:** Water
Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** WRU
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0222	89	80-120	

Lab Batch #: 905617 **Sample:** 632975-1-BKS **Matrix:** Water
Date Analyzed: 01/26/2013 **Date Prepared:** 01/26/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Bromide	<0.100	10.0	10.1	101	90-110	
Sulfate	<1.00	50.0	51.3	103	90-110	

Lab Batch #: 905858 **Sample:** 905858-1-BKS **Matrix:** Water
Date Analyzed: 01/30/2013 **Date Prepared:** 01/30/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	15.0	13.8	92	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 456437 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 02/01/2013 **Date Analyzed:** 02/01/2013

Lab Batch ID: 906137 **Sample:** 633230-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

RCRA Metals by SW846-6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.937	94	1.00	0.954	95	2	80-120	20	
Iron	<0.200	5.00	4.92	98	5.00	5.05	101	3	80-120	20	
Sodium	<0.500	25.0	24.1	96	25.0	24.3	97	1	80-120	20	

Analyst: DHE **Date Prepared:** 01/30/2013 **Date Analyzed:** 01/30/2013

Lab Batch ID: 905840 **Sample:** 905840-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	960	96	1000	1000	100	4	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 456437 **Project ID:** 073018

Lab Batch ID: 905964 **QC- Sample ID:** 456425-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	0.200	0.242	121	0.200	0.240	120	1	80-120	20	X

Lab Batch ID: 905617 **QC- Sample ID:** 456395-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/26/2013 **Date Prepared:** 01/26/2013 **Analyst:** RKO

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.100	10.0	10.9	109	10.0	10.3	103	6	80-120	20	
Sulfate	65.3	50.0	106	81	50.0	105	79	1	80-120	20	X

Lab Batch ID: 905617 **QC- Sample ID:** 456408-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/26/2013 **Date Prepared:** 01/26/2013 **Analyst:** RKO

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	2.64	20.0	23.8	106	20.0	24.2	108	2	80-120	20	
Sulfate	413	100	518	105	100	522	109	1	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 456437 **Project ID:** 073018

Lab Batch ID: 906137 **QC- Sample ID:** 456437-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/01/2013 **Date Prepared:** 02/01/2013 **Analyst:** MKO

Reporting Units: mg/L

RCRA Metals by SW846-6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.939	94	1.00	0.942	94	0	75-125	20	
Iron	<0.200	5.00	4.47	89	5.00	4.48	90	0	75-125	20	
Sodium	153	25.0	162	36	25.0	163	40	1	75-125	20	X

Lab Batch ID: 905858 **QC- Sample ID:** 456437-006 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/30/2013 **Date Prepared:** 01/30/2013 **Analyst:** RKO

Reporting Units: mg/L

TOC by SM 5310C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	4.05	15.0	18.1	94	15.0	18.2	94	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: N. Eunice

Work Order #: 456437

Lab Batch #: 905964 **Project ID:** 073018

Date Analyzed: 01/25/2013 16:50 **Date Prepared:** 01/25/2013 **Analyst:** WRU

QC- Sample ID: 456425-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 905840

Date Analyzed: 01/30/2013 16:32 **Date Prepared:** 01/30/2013 **Analyst:** DHE

QC- Sample ID: 456455-012 D **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	10.4	11.2	7	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

XENCO Laboratories

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
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☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**
☐ 842 Cantwell, Corpus Christi, TX 78408 **361-8840371**

Serial #: 307971 Page 1 of 1

Company-City: CRA - Midland **Phone:** 432-686-0086

Lab Only: 456437

Project Name-Location: Eunice NM ☐ Previously done at XENCO **Project ID:** 073018

TAT: ASAP 5h 12h (24h) 48h 3d 5d 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other

Proj. Manager (PM): Mike Wisniowiecki

E-mail Results to ☐ PM and mwisniowiecki@craworld.com **Fax No:** 432-686-0186

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.

Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP** QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: Justin Nixon **Signature:** [signature]

Analysis columns (printed): VCOs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs; VCO's PP TCL DW Appdx-1 Appdx-2 CALL Other:; PAHs SIM; TX-1005 DRO GRO MA EPH MA VPH; SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL; OC Pesticides PCBs Herbicides OP Pesticides; Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2; SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs); EDB / DBCP

A = SW-846 6010B Iron, Chromium, Sodium; B = Hex Chromium SW-846 7196A; C = Anions E300, Sulfate, Bromide; D = Sulfide SM 4500; E = TOC SM 5310; F = Dissolved Iron SW-846 6010B

TAT: ASAP 5h 12h (24h) 48h 3d 5d 7d 10d 21d; Addn: PAH above mg/L W, mg/Kg S Highest Hit; Hold Samples (Surcharges will apply and are pre-approved); Sample Clean-ups are pre-approved as needed

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	A	B	C	D	E	F	Remarks	
1	MW96012513	1-25-13	950					5				X	X	X	X	X	X		1
2	IW030012513	↓	1150					6											2
3	MW89SA012513		1250					6											3
4	IW28012513		1320					6											4
5	MW009A012513		1400					6											5
6	Dup2012513		—					6											6
7	metal QC1 (MW96)		—					1											7
8	IW28 metal QC2		1320					1											8
9																			9
10																			10

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) [signature]	1-25-13 1600	2) [signature] Smith	1/25/13 1600
2	3)		4)	
3	5)		6)	

Total Containers per COC: 37 Cooler Temp: 1.8 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**), See Label (**L**), Other (**O**)
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 01/25/2013 04:00:00 PM

Work Order #: 456437

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	18
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

B&A Laboratories, Inc.
10650 Culebra Rd., Suite 104-154
San Antonio, TX 78251-4949
Ph: (210) 509-3334 Fax (210) 509-3335
Houston - Dallas - San Antonio - Odessa
Tampa - Atlanta - Phoenix

294958

Invoice No. 294958

Client Information		Invoice Information	
Invoice to:	**Conestoga Rovers & Associates**	**Invoice Date:**	05/07/2013
Contact:	Jennifer Devonshire	**Due Date:**	06/06/2013
Address:	2055 Niagra Falls Blvd. Suite #3 Midland, TX 14304	**Terms:**	30 Days
Project Name:		**PO #:**	4057942
Project #:	073018	**Lab PM:**	Kelsey Brooks

Comments:

Products / Services	WO Number	Matrix	TAT	Qty	Price	Ext. Price
Chromium, Hexavalent by SW 7196A	462048	Water	5 Day TAT	5	25.00	$125.00
Total Metals by EPA 6010B	462048	Water	5 Day TAT	5	30.00	$150.00
Dissolved Metals per ICP by SW846 6010B	462048	Water	5 Day TAT	5	10.00	$50.00
Inorganic Anions by EPA 300/300.1	462048	Water	5 Day TAT	5	54.00	$270.00
TOC by SM 5310C	462048	Water	5 Day TAT	5	35.00	$175.00
Sulfide by SM4500-S-F-00	462048	Water	5 Day TAT	5	40.00	$200.00
Nitrogen Ammonia by SM4500-NH3C	462048	Water	5 Day TAT	5	35.00	$175.00
Total Anaerobic Bacteria	462048	Water	5 Day TAT	5	35.00	$175.00

Total: $1,320.00

Please detach this portion and return with your payment

Client Information		Invoice Information: 294958	
Client:	**Conestoga Rovers & Associates**	**Work Order Number:**	462048
Contact:	Jennifer Devonshire	**Due Date:**	06/06/2013
Terms:	30 Days	**Invoice Amount:**	$1,320.00
PO #:	4057942	**Amount Remitted:**	

Past Due Invoices are subject to a 1.5% per Month service charge, plus collection fees.

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Analytical Report 456437

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

N. Eunice

073018

05-FEB-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

05-FEB-13

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **456437**
N. Eunice
Project Address: NM

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 456437. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 456437 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 456437

Conestoga Rovers & Associates, Midland, TX

N. Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-96012513	W	01-25-13 09:50		456437-001
IW030012513	W	01-25-13 11:50		456437-002
MW-895A012513	W	01-25-13 12:50		456437-003
IW28012513	W	01-25-13 13:20		456437-004
MW009A012513	W	01-25-13 14:00		456437-005
DUP2 012513	W	01-25-13 00:00		456437-006
METAL QCI(MW96)	W	01-25-13 00:00		456437-007
IW28 METAL QC2	W	01-25-13 13:20		456437-008

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-905617 Inorganic Anions by EPA 300/300.1
E300

Batch 905617, Sulfate recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 456437-001, -003, -004, -006, -002, -005.
The Laboratory Control Sample for Sulfate is within laboratory Control Limits

Batch: LBA-905964 Chromium, Hexavalent by SW 7196A
SW7196A

Batch 905964, Hexavalent Chromium recovered above QC limits in the Matrix Spike.
Samples affected are: 456437-001, -003, -004, -006, -002, -005.
The Laboratory Control Sample for Hexavalent Chromium is within laboratory Control Limits

Certificate of Analysis Summary 456437

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Fri Jan-25-13 04:00 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	456437-001		456437-002		456437-003		456437-004		456437-005		456437-006	
	Field Id:	MW-96012513		IW030012513		MW-895A012513		IW28012513		MW009A012513		DUP2 012513	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jan-25-13 09:50		Jan-25-13 11:50		Jan-25-13 12:50		Jan-25-13 13:20		Jan-25-13 14:00		Jan-25-13 00:00	
Chromium, Hexavalent by SW 7196A	***Extracted:***												
	Analyzed:	Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50		Jan-25-13 16:50	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Hexavalent Chromium		ND	0.0100	0.448	0.200	0.0256	0.0100	0.0563	0.0100	0.652	0.100	0.0556	0.0100
Dissolved Metals per ICP by SW846 6010B SUB: TX104704215	***Extracted:***	Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00	
	Analyzed:	Feb-02-13 01:16		Feb-02-13 01:22		Feb-02-13 01:27		Feb-02-13 01:33		Feb-02-13 01:50		Feb-02-13 01:55	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Iron		ND	0.200	82.9	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Jan-26-13 22:01		Jan-26-13 22:18		Jan-26-13 22:36		Jan-26-13 22:53		Jan-26-13 23:10		Jan-26-13 23:27	
	Analyzed:	Jan-26-13 22:01		Jan-26-13 22:18		Jan-26-13 22:36		Jan-26-13 22:53		Jan-26-13 23:10		Jan-26-13 23:27	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Bromide		ND	0.200	149	1.00	ND	0.200	ND	1.00	ND	1.00	ND	1.00
Sulfate		318	2.00	ND	10.0	206	2.00	754	10.0	687	10.0	738	10.0
Sulfide by SM4500-S-F-00 SUB: TX104704215	***Extracted:***												
	Analyzed:	Jan-30-13 16:34		Jan-30-13 16:36		Jan-30-13 16:38		Jan-30-13 16:40		Jan-30-13 16:42		Jan-30-13 16:44	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Sulfide, total		ND	50.0	ND	5.00	ND	5.00	ND	5.00	ND	5.00	ND	5.00
TOC by SM 5310C SUB: TX104704215	***Extracted:***												
	Analyzed:	Jan-30-13 14:53		Jan-30-13 17:42		Jan-30-13 15:25		Jan-30-13 16:02		Jan-30-13 16:17		Jan-30-13 16:32	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Organic Carbon		1.47	1.00	1800	100	3.00	1.00	3.99	1.00	2.84	1.00	4.05	1.00

Certificate of Analysis Summary 456437

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Fri Jan-25-13 04:00 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	456437-001		456437-002		456437-003		456437-004		456437-005		456437-006	
	Field Id:	MW-96012513		IW030012513		MW-895A012513		IW28012513		MW009A012513		DUP2 012513	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jan-25-13 09:50		Jan-25-13 11:50		Jan-25-13 12:50		Jan-25-13 13:20		Jan-25-13 14:00		Jan-25-13 00:00	
Total Metals by EPA 6010B **SUB: TX104704215**	***Extracted:***	Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00		Feb-01-13 08:00	
	Analyzed:	Feb-01-13 23:52		Feb-02-13 00:20		Feb-02-13 00:25		Feb-02-13 00:42		Feb-02-13 00:48		Feb-02-13 00:53	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chromium		ND	0.0100	0.0684	0.0100	0.0298	0.0100	0.0609	0.0100	0.628	0.0100	0.0598	0.0100
Iron		ND	0.200	103	0.200	ND	0.200	ND	0.200	ND	0.200	ND	0.200
Sodium		153	0.500	160	0.500	205	0.500	389	0.500	289	0.500	381	0.500

Certificate of Analysis Summary 456437

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice

Project Id: 073018
Contact: Mike Wisniowiecki
Project Location: NM

Date Received in Lab: Fri Jan-25-13 04:00 pm
Report Date: 05-FEB-13
Project Manager: Nicholas Straccione

Analysis Requested							
	Lab Id:	456437-007		456437-008			
	Field Id:	METAL QCI(MW96)		IW28 METAL QC2			
	Depth:						
	Matrix:	WATER		WATER			
	Sampled:	Jan-25-13 00:00		Jan-25-13 13:20			
RCRA Metals by SW846-6010B SUB: TX104704215	***Extracted:***	Feb-01-13 08:00		Feb-01-13 08:00			
	Analyzed:	Feb-02-13 00:59		Feb-02-13 01:05			
	Units/RL:	mg/L	RL	mg/L	RL		
Chromium		ND	0.0100	0.0608	0.0100		
Iron		ND	0.200	ND	0.200		
Sodium		152	0.500	381	0.500		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: N. Eunice

Work Order #: 456437 **Project ID:** 073018

Lab Batch #: 905964 **Sample:** 905964-1-BKS **Matrix:** Water
Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** WRU
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0222	89	80-120	

Lab Batch #: 905617 **Sample:** 632975-1-BKS **Matrix:** Water
Date Analyzed: 01/26/2013 **Date Prepared:** 01/26/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Bromide	<0.100	10.0	10.1	101	90-110	
Sulfate	<1.00	50.0	51.3	103	90-110	

Lab Batch #: 905858 **Sample:** 905858-1-BKS **Matrix:** Water
Date Analyzed: 01/30/2013 **Date Prepared:** 01/30/2013 **Analyst:** RKO
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	15.0	13.8	92	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

BS / BSD Recoveries

Project Name: N. Eunice

Work Order #: 456437 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 02/01/2013 **Date Analyzed:** 02/01/2013

Lab Batch ID: 906137 **Sample:** 633230-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

RCRA Metals by SW846-6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.937	94	1.00	0.954	95	2	80-120	20	
Iron	<0.200	5.00	4.92	98	5.00	5.05	101	3	80-120	20	
Sodium	<0.500	25.0	24.1	96	25.0	24.3	97	1	80-120	20	

Analyst: DHE **Date Prepared:** 01/30/2013 **Date Analyzed:** 01/30/2013

Lab Batch ID: 905840 **Sample:** 905840-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	960	96	1000	1000	100	4	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 456437 **Project ID:** 073018

Lab Batch ID: 905964 **QC- Sample ID:** 456425-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/25/2013 **Date Prepared:** 01/25/2013 **Analyst:** WRU

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	0.200	0.242	121	0.200	0.240	120	1	80-120	20	X

Lab Batch ID: 905617 **QC- Sample ID:** 456395-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/26/2013 **Date Prepared:** 01/26/2013 **Analyst:** RKO

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.100	10.0	10.9	109	10.0	10.3	103	6	80-120	20	
Sulfate	65.3	50.0	106	81	50.0	105	79	1	80-120	20	X

Lab Batch ID: 905617 **QC- Sample ID:** 456408-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/26/2013 **Date Prepared:** 01/26/2013 **Analyst:** RKO

Reporting Units: mg/L

Inorganic Anions by EPA 300/300.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	2.64	20.0	23.8	106	20.0	24.2	108	2	80-120	20	
Sulfate	413	100	518	105	100	522	109	1	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice

Work Order # : 456437 **Project ID:** 073018

Lab Batch ID: 906137 **QC- Sample ID:** 456437-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/01/2013 **Date Prepared:** 02/01/2013 **Analyst:** MKO

Reporting Units: mg/L

RCRA Metals by SW846-6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	0.939	94	1.00	0.942	94	0	75-125	20	
Iron	<0.200	5.00	4.47	89	5.00	4.48	90	0	75-125	20	
Sodium	153	25.0	162	36	25.0	163	40	1	75-125	20	X

Lab Batch ID: 905858 **QC- Sample ID:** 456437-006 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/30/2013 **Date Prepared:** 01/30/2013 **Analyst:** RKO

Reporting Units: mg/L

TOC by SM 5310C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	4.05	15.0	18.1	94	15.0	18.2	94	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: N. Eunice

Work Order #: 456437

Lab Batch #: 905964 **Project ID:** 073018

Date Analyzed: 01/25/2013 16:50 **Date Prepared:** 01/25/2013 **Analyst:** WRU

QC- Sample ID: 456425-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 905840

Date Analyzed: 01/30/2013 16:32 **Date Prepared:** 01/30/2013 **Analyst:** DHE

QC- Sample ID: 456455-012 D **Batch #:** 1 **Matrix:** Ground Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	10.4	11.2	7	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

XENCO Laboratories

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**
☐ 842 Cantwell, Corpus Christi, TX 78408 **361-8840371**

Serial #: 307971 Page 1 of 1

Company-City: CRA - Midland **Phone:** 432-686-0086

Lab Only: 456437

Project Name-Location: Eunice NM ☐ Previously done at XENCO **Project ID:** 073018

TAT: ASAP 5h 12h (24h) 48h 3d 5d 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other **Proj. Manager (PM):** Mike Wisniowiecki

E-mail Results to ☐ PM and mwisniowiecki@craworld.com **Fax No:** 432-686-0186

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP** QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: Justin Nixon **Signature:** [signature]

Analysis columns (printed): VCOs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs; VCO's PP TCL DW Appdx-1 Appdx-2 CALL Other:; PAHs SIM; TX-1005 DRO GRO MA EPH MA VPH; SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL; OC Pesticides PCBs Herbicides OP Pesticides; Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2; SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs); EDB / DBCP

Handwritten analyses: Sw-846 6010B Iron, Chromium, Sodium; Hex Chromium Sw-846 7196A; Anions E300, Sulfate, Bromide; Sulfide SM 4500; TOC SM 5310; Dissolved Iron Sw-846 6010B

TAT: ASAP 5h 12h (24h) 48h 3d 5d 7d 10d 21d; Addn: PAH above mg/L W, mg/Kg S Highest Hit; Hold Samples (Surcharges will apply and are pre-approved); Sample Clean-ups are pre-approved as needed

Remarks — From: / Rcv. by: / Date / Addn:

#	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	Sw-846 6010B Iron, Chromium, Sodium	Hex Chromium Sw-846 7196A	Anions E300, Sulfate, Bromide	Sulfide SM 4500	TOC SM 5310	Dissolved Iron Sw-846 6010B	#
1	MW96012513	1-25-13	950					5				X	X	X	X	X	X	1
2	IW030012513	↓	1150					6				↓	↓	↓	↓	↓	↓	2
3	MW89SA012513	↓	1250					6				↓	↓	↓	↓	↓	↓	3
4	IW28012513	↓	1320					6				↓	↓	↓	↓	↓	↓	4
5	MW009A012513	↓	1400					6				↓	↓	↓	↓	↓	↓	5
6	Dup2012513	↓	—					6				↓	↓	↓	↓	↓	↓	6
7	metal QC1 (MW96)	↓	—					1				↓	↓	↓	↓	↓	↓	7
8	IW28 metal QC2	↓	1320					1				↓	↓	↓	↓	↓	↓	8
9																		9
10																		10

#	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) [signature]	1-25-13 1600	2) [signature] Smith	1/25/13 1600
2	3)		4)	
3	5)		6)	

Total Containers per COC: 37 Cooler Temp: 1.8 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**), See Label (**L**), Other (**O**)
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other ______ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 01/25/2013 04:00:00 PM

Work Order #: 456437

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	18
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 462048

for

Conestoga Rovers & Associates

Project Manager: Jennifer Devonshire

Midland Odessa Discounted Fee Schedule

073018

08-MAY-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

08-MAY-13

Project Manager: **Jennifer Devonshire**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **462048**
Midland Odessa Discounted Fee Schedule
Project Address: N. Eunice

Jennifer Devonshire:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 462048. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 462048 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
IW028042613	W	04-26-13 10:55		462048-001
MW-0089SA042613	W	04-26-13 11:05		462048-002
MW009A042613	W	04-26-13 12:45		462048-003
IW030042613	W	04-26-13 12:15		462048-004
DUP1042613	W	04-26-13 00:00		462048-005

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates

Project Name: Midland Odessa Discounted Fee Schedule

Project ID:	*073018*	Report Date:	*08-MAY-13*
Work Order Number(s):	*462048*	Date Received:	*04/26/2013*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-912347 Chromium, Hexavalent by SW 7196A
SW7196A

Batch 912347, Hexavalent Chromium recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 462048-002, -001, -005, -003, -004.
The Laboratory Control Sample for Hexavalent Chromium is within laboratory Control Limits

Batch: LBA-912600 Total Metals by EPA 6010B
SW6010B

Batch 912600, Sodium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 462048-002, -001, -005, -003, -004.
The Laboratory Control Sample for Sodium is within laboratory Control Limits

Batch: LBA-912872 Inorganic Anions by EPA 300/300.1
E300

Batch 912872, Bromide, Ortho-Phosphate recovered below QC limits in the Matrix Spike.
Samples affected are: 462048-002, -001, -005, -003, -004.
The Laboratory Control Sample for Ortho-Phosphate , Bromide is within laboratory Control Limits

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **IW028042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-001** Date Collected: 04.26.13 10.55 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.26.13 15.01 Analyst: AMB Date Prep: 04.26.13 15.01 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**7.82**	4.00	0.120	mg/L		20
Ortho-Phosphate	14265-44-2	ND	4.00	0.720	mg/L	U	20
Sulfate	14808-79-8	**1460**	40.0	0.920	mg/L		20

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.22 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 13.57 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**5.32**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 15.28 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**0.848**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**569**	0.500	0.0541	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**IW028042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-001**	Date Collected: 04.26.13 10.55	Date Received: 04.26.13 14.45

Analytical Method: **Dissolved Metals per ICP by SW846 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.32 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 15.25 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.719**	0.100	0.0500	mg/L		10

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **MW-0089SA042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-002** Date Collected: 04.26.13 11.05 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 09.43 Analyst: AMB Date Prep: 04.27.13 09.43 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**8.70**	4.00	0.120	mg/L		20
Ortho-Phosphate	14265-44-2	ND	4.00	0.720	mg/L	U	20
Sulfate	14808-79-8	**1560**	40.0	0.920	mg/L		20

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.25 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 16.00 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**6.75**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 15.46 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**1.23**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**491**	0.500	0.0541	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **MW-0089SA042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-002** Date Collected: 04.26.13 11.05 Date Received: 04.26.13 14.45

Analytical Method: **Dissolved Metals per ICP by SW846 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.38 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 15.25 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**1.15**	0.100	0.0500	mg/L		10

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **MW009A042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-003** Date Collected: 04.26.13 12.45 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 10.05 Analyst: AMB Date Prep: 04.27.13 10.05 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**5.05**	2.00	0.0600	mg/L		10
Ortho-Phosphate	14265-44-2	ND	2.00	0.360	mg/L	U	10
Sulfate	14808-79-8	**808**	20.0	0.460	mg/L		10

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.27 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 16.17 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**3.13**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.15 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**0.683**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**282**	5.00	0.541	mg/L		10

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**MW009A042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-003**	Date Collected: 04.26.13 12.45	Date Received: 04.26.13 14.45

Analytical Method:	**Dissolved Metals per ICP by SW846 6010B**		% Moist:	Prep Method: 3010A	
Date Anal:	04.29.13 17.44	Analyst: MKO	Date Prep: 04.29.13 11.30		Tech: MKO
Anal seq:	912600		Prep seq: 637271		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method:	**Sulfide by SM4500-S-F-00**		% Moist:	Prep Method:	
Date Anal:	04.29.13 15.49	Analyst: DHE	Date Prep:		Tech: DHE
Anal seq:	912467		Prep seq:		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method:	**Chromium, Hexavalent by SW 7196A**		% Moist:	Prep Method:	
Date Anal:	04.26.13 15.25	Analyst: WRU	Date Prep:		Tech: WRU
Anal seq:	912347		Prep seq:		

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.657**	0.0100	0.00500	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **IW030042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-004** Date Collected: 04.26.13 12.15 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 10.27 Analyst: AMB Date Prep: 04.27.13 10.27 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**112**	2.00	0.0600	mg/L		10
Ortho-Phosphate	14265-44-2	ND	2.00	0.360	mg/L	U	10
Sulfate	14808-79-8	ND	20.0	0.460	mg/L	U	10

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.28 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	**3.01**	0.100	0.0110	mg/L		1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 15.21 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**816**	50.0	25.0	mg/L		50

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.20 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	ND	0.0100	0.00355	mg/L	U	1
Iron	7439-89-6	**54.2**	0.200	0.0188	mg/L		1
Sodium	7440-23-5	**131**	0.500	0.0541	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**IW030042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-004**	Date Collected: 04.26.13 12.15	Date Received: 04.26.13 14.45

Analytical Method:	**Dissolved Metals per ICP by SW846 6010B**		% Moist:		Prep Method: 3010A
Date Anal:	04.29.13 17.50	Analyst: MKO	Date Prep: 04.29.13 11.30		Tech: MKO
Anal seq:	912600		Prep seq: 637271		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	**5.29**	0.200	0.0188	mg/L		1

Analytical Method:	**Sulfide by SM4500-S-F-00**		% Moist:		Prep Method:
Date Anal:	04.29.13 15.49	Analyst: DHE	Date Prep:		Tech: DHE
Anal seq:	912467		Prep seq:		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method:	**Chromium, Hexavalent by SW 7196A**		% Moist:		Prep Method:
Date Anal:	04.26.13 15.25	Analyst: WRU	Date Prep:		Tech: WRU
Anal seq:	912347		Prep seq:		

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	ND	0.0100	0.00500	mg/L	U	1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**DUP1042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-005**	Date Collected: 04.26.13 00.00	Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 10.48 Analyst: AMB Date Prep: 04.27.13 10.48 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**5.45**	2.00	0.0600	mg/L		10
Ortho-Phosphate	14265-44-2	ND	2.00	0.360	mg/L	U	10
Sulfate	14808-79-8	**1500**	20.0	0.460	mg/L		10

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.29 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 15.33 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**5.92**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.26 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**0.786**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**534**	0.500	0.0541	mg/L		1

Sample Id: **DUP1042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-005** Date Collected: 04.26.13 00.00 Date Received: 04.26.13 14.45

Analytical Method: **Dissolved Metals per ICP by SW846 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.56 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 15.25 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.757**	0.100	0.0500	mg/L		10

Sample Id: **637271-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **637271-1-BLK** Date Collected: Date Received:

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 15.10 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	ND	0.0100	0.00355	mg/L	U	1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	ND	0.500	0.0541	mg/L	U	1

Sample Id: **637314-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **637314-1-BLK** Date Collected: Date Received:

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.19 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Sample Id: **637540-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **637540-1-BLK** Date Collected: Date Received:

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.26.13 13.56 Analyst: AMB Date Prep: 04.26.13 13.56 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	ND	0.200	0.00600	mg/L	U	1
Ortho-Phosphate	14265-44-2	ND	0.200	0.0360	mg/L	U	1
Sulfate	14808-79-8	ND	2.00	0.0460	mg/L	U	1

Sample Id: **912347-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **912347-1-BLK** Date Collected: Date Received:

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 11.20 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	ND	0.0100	0.00500	mg/L	U	1

Sample Id: **912467-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **912467-1-BLK** Date Collected: Date Received:

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Sample Id: **912472-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **912472-1-BLK** Date Collected: Date Received:

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 13.33 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	ND	1.00	0.500	mg/L	U	1

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048 **Project ID:** 073018

Lab Batch #: 912347 **Sample:** 912347-1-BKS **Matrix:** Water
Date Analyzed: 04/26/2013 **Date Prepared:** 04/26/2013 **Analyst:** WRU
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0204	82	80-120	

Lab Batch #: 912513 **Sample:** 637314-1-BKS **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/26/2013 **Analyst:** DEP
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Nitrogen Ammonia by SM4500-NH3C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Nitrogen, Ammonia (as N)	<0.100	2.50	2.53	101	80-120	

Lab Batch #: 912472 **Sample:** 912472-1-BKS **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/29/2013 **Analyst:** MAB
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	15.0	15.5	103	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048 **Project ID:** 073018

Analyst: AMB **Date Prepared:** 04/26/2013 **Date Analyzed:** 04/26/2013

Lab Batch ID: 912872 **Sample:** 637540-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	5.00	4.23	85	5.00	4.21	84	0	80-120	20	
Ortho-Phosphate	<0.200	5.00	5.13	103	5.00	4.68	94	9	80-120	20	
Sulfate	<2.00	25.0	24.2	97	25.0	23.4	94	3	80-120	20	

Analyst: DHE **Date Prepared:** 04/29/2013 **Date Analyzed:** 04/29/2013

Lab Batch ID: 912467 **Sample:** 912467-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	960	96	1000	960	96	0	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 04/29/2013 **Date Analyzed:** 04/29/2013

Lab Batch ID: 912600 **Sample:** 637271-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	1.10	110	1.00	1.10	110	0	80-120	20	
Iron	<0.200	5.00	5.28	106	5.00	5.18	104	2	80-120	20	
Sodium	<0.500	25.0	27.4	110	25.0	27.2	109	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048

Lab Batch #: 912872 **Project ID:** 073018

Date Analyzed: 04/26/2013 **Date Prepared:** 04/26/2013 **Analyst:** AMB

QC- Sample ID: 462048-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	7.82	100	89.7	82	80-120	
Ortho-Phosphate	<4.00	100	111	111	80-120	
Sulfate	1460	500	2000	108	80-120	

Lab Batch #: 912872

Date Analyzed: 04/27/2013 **Date Prepared:** 04/27/2013 **Analyst:** AMB

QC- Sample ID: 462056-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	1.38	25.0	20.7	77	80-120	X
Ortho-Phosphate	<1.00	25.0	<1.00	0	80-120	X
Sulfate	14.1	125	148	107	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order # : 462048 **Project ID:** 073018

Lab Batch ID: 912347 **QC- Sample ID:** 461962-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 04/26/2013 **Date Prepared:** 04/26/2013 **Analyst:** WRU
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	0.200	0.248	124	0.200	0.249	125	0	80-120	20	X

Lab Batch ID: 912513 **QC- Sample ID:** 462048-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/26/2013 **Analyst:** DEP
Reporting Units: mg/L

Nitrogen Ammonia by SM4500-NH3C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.56	102	2.50	2.60	104	2	80-120	20	

Lab Batch ID: 912472 **QC- Sample ID:** 462048-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/29/2013 **Analyst:** MAB
Reporting Units: mg/L

TOC by SM 5310C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	5.32	15.0	21.8	110	15.0	21.6	109	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order # : 462048 **Project ID:** 073018

Lab Batch ID: 912600 **QC- Sample ID:** 462048-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 04/29/2013 **Date Prepared:** 04/29/2013 **Analyst:** MKO

Reporting Units: mg/L

Total Metals by EPA 6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	0.848	1.00	1.80	95	1.00	1.71	86	5	80-120	20	
Iron	<0.200	5.00	4.98	100	5.00	4.68	94	6	80-120	20	
Sodium	569	25.0	569	0	25.0	556	0	2	75-125	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048

Lab Batch #: 912347 **Project ID:** 073018

Date Analyzed: 04/26/2013 11:20 **Date Prepared:** 04/26/2013 **Analyst:** WRU

QC- Sample ID: 461962-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 912467

Date Analyzed: 04/29/2013 15:49 **Date Prepared:** 04/29/2013 **Analyst:** DHE

QC- Sample ID: 461995-017 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

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Serial #: 330715 Page 1 of 1

Company-City CRA-midland **Phone** 432-686-0086

Lab Only: 462048

Project Name-Location N Eunice ☐ Previously done at XENCO **Project ID** 073018

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other

Proj. Manager (PM) Mike Wirneowiecki

E-mail Results to ☒ PM and

Fax No: 432-686-0186

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name Justin Nikon **Signature** [signature]

Analysis columns: VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs; VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:; PAHs SIM 8310 8270; TX-1005 DRO GRO MA EPH MA VPH; SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL; OC Pesticides PCBs Herbicides OP Pesticides; Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2; SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs); EDB / DBCP; Total Chromium, Iron, sodium SW846 6010B; Hexavalent Chromium SW 846 7196A; Anions (SO4, Br) E300; Sulfide SM4500; TOC SM 5310; Dissolved Iron SW 846 6010B; Ammonia Nitrogen SM4500; Orthophosphate phosphorous E300; Total anaerobic microbial count; TATASAP 5h 12h (24h) 48h 3d 5d 7d 10d 21d; Addn: PAH above mg/L W, mg/Kg S Highest Hit; Hold Samples (Surcharges will apply and are pre-approved); Sample Clean-ups are pre-approved as needed

#	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	Total Cr, Fe, Na SW846 6010B	Hexavalent Chromium SW846 7196A	Anions (SO4, Br) E300	Sulfide SM4500	TOC SM5310	Dissolved Iron SW846 6010B	Ammonia Nitrogen SM4500	Orthophosphate phosphorous E300	Total anaerobic microbial count	#
1	IW0280042613	4-26-13	1055		W		X	5				X	X	X	X	X	X	X	X	X	1
2	MW895A042613	↓	1105		↓		↓	↓				↓	↓	↓	↓	↓	↓	↓	↓	↓	2
3	MW009A042613	↓	1245		↓		↓	↓				↓	↓	↓	↓	↓	↓	↓	↓	↓	3
4	IW0300042613	↓	1215		↓		↓	↓				↓	↓	↓	↓	↓	↓	↓	↓	↓	4
5	Dup1042613	↓	—		↓		↓	↓				↓	↓	↓	↓	↓	↓	↓	↓	↓	5
6																					6
7																					7
8																					8
9																					9
10																					10

Remarks From: Rcv. by: Date Addn:

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) [signature]	4-26-13 1445	2) Shaunna Smith	4/26/13 14:45
2	3)		4)	
3	5)		6)	

Total Containers per COC: 25 Cooler Temp: 1.5 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**), See Label (**L**), Other (**O**)
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other ______ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 04/26/2013 02:45:00 PM

Work Order #: 462048

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 04/29/2013

Checklist reviewed by: Kelsey Brooks Date: 04/29/2013

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Kelsey Brooks
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.:
Project Name:
Collected: 04/26/2013
Received: 04/27/2013
Analyzed: 04/27/2013 11:30 AM

Hygeia Sample ID	101126	101127 QC X	101128
Client Sample ID	**462048-001**	**462048-002**	**462048-003**
Location	IW028042613	MW895A042613	MW009A042613
Sample Type	Water	Water	Water
Sample Amount	1 mL	1 mL	1 mL
Medium / Method	R2A	R2A	R2A
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / 100 mL**	%	Raw Count	Dilution	**CFU / 100 mL**	%	Raw Count	Dilution	**CFU / 100 mL**	%
Anaerobic heterotrophic bacteria	0	1	<100		4	1	400	100	1	1	100	100
Total CFU	<100 / 100 mL				400 / 100 mL				100 / 100 mL			
Comments												

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

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Client No.: 30311
Kelsey Brooks
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.:
Project Name:
Collected: 04/26/2013
Received: 04/27/2013
Analyzed: 04/27/2013 11:30 AM

Hygeia Sample ID	101129	101130
Client Sample ID	**462048-004**	**462048-005**
Location	IA030042613	DUP1042613
Sample Type	Water	Water
Sample Amount	1 mL	0.1 mL
Medium / Method	R2A	R2A
Dilution Factor(s)	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / 100 mL**	%	Raw Count	Dilution	**CFU / 100 mL**	%
Anaerobic heterotrophic bacteria	1	1	100	100	480	1	480,000	100
Total CFU			100 / 100 mL				480,000 / 100 mL	
Comments								

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311 Kelsey Brooks Xenco Laboratories 4141 Greenbriar Stafford, TX 77477	Project No.: Project Name: Collected: 04/26/2013 Received: 04/27/2013 Analyzed: 04/27/2013 11:30 AM

Analyst Vanessa Garcia
Vanessa Garcia

Lab Director
Crystal Enloe

Thank you for using Hygeia Laboratories Inc. We strive to provide superior quality and service.

Data in this report are reliable within two significant figures. Sample results are not corrected based on results of blanks. The minimum reporting limit (MRL) is calculated as the lowest dilution tested/volume. Estimates of uncertainty are available upon request. CFU = colony forming units. CFU/unit is calculated as raw count*dilution/sample amount. Total CFU/unit is the sum of individual CFUs/unit and is considered <MRL if no colonies are present.

Confidentiality Notice:

The information contained herein is confidential and privileged, intended for the exclusive use of the individual or entity named above. If the reader of this document is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of the document(s) is strictly prohibited. If you have received this document in error, please immediately notify us by telephone to arrange for its return.

Guidelines for Interpretation:

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork. Bacteria have been associated with a variety of health effects and sensitivity varies from person to person. Contact the CDC (www.cdc.gov) for information regarding potential health risks related to exposure in air or on surfaces and the USEPA (www.epa.gov) for existing established standards including regulated water quality standards.

Liability Notice:

Hygeia Laboratories Inc. and its personnel shall not be held liable for any misinformation provided to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report relates only to samples submitted and analyzed.

Revision 0 04/29/2013 ce

Attachment A Laboratory Data Package Cover Page

Project Name: **Midland Odessa Discounted** Laboratory Number: **462048**

This Data package consists of : Laboratory Batch No(s) **912600**

■ This signature page, the laboratory review checklist, and the following reportable data:

■ R1 Field chain-of-custody documentation;

■ R2 Sample identification cross-reference;

■ R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

■ R4 Surrogate Recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

■ R5 Test reports/summary forms for blank samples;

■ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

■ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs) and
- e) The laboratory's MS/MSD QC limits

■ R8 Laboratory anaytical duplicate (if applicable) recovery and precision:
- a) the amount of analyte measured in the duplicate,
- b) the calculated RPD, and
- c) the laboratory's QC limits for analytical duplicates.

■ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

■ R10 Other problems or anomalies.

■ Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted
in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception
Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Alejandro Montoya	Alejandro M.	**Odessa Laboratory Directo**	**05/07/13**
Name (Printed)	Signature	Official Title (printed)	Date

A1

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO Laboratories	LRC Date :	05/07/13
Project Name:	Midland Odessa Discounted Fee Schedule	Laboratory Job Number :	462048
Reviewer Name:	AMB	Batch Number(s) :	912600

#[1]	A[2]	Description	Yes	No	NA[3]	[4]	ER#[5]
R1	OI	**Chain-of-Custody (COC)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soil/solid samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, were TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency ?	X				
		Were method blanks taken through the entire analytical procedure, including preparation and, if applicable, cleanup procedures ?	X				
		Were Blank Concentrations <MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within the QC limits?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				1
		Were MS/MSD RPDs within the laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method Quantitation Limits (MQLs)**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO Laboratories	LRC Date :	05/07/13
Project Name:	Midland Odessa Discounted Fee Schedule	Laboratory Job Number :	462048
Reviewer Name:	AMB	Batch Number(s) :	912600

#[1]	A[2]	Description	Yes	No	NA[3]	[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and the highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing Calibration Verification (ICCV and CCV) and continuing calibration blank**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB <MDL?	X				
S3	O	**Mass Spectral Tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal Standard (IS)**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestions Spikes, and Method of Standard Additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods (NELAC Chapter 5)**					
		Are all methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Attachment A (cont'd): Laboratory Review Checklist: Exception Reports

Laboratory Name:	XENCO Laboratories	LRC Date:	05/07/13
Project Name:	Midland Odessa Discounted Fee Schedule	Laboratory Job Number:	462048
Reviewer Name:	AMB	Batch Number(s) :	912600

ER# [1]	DESCRIPTION
1	SW6010B Batch 912600, Sodium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Samples affected are: 462048-002, -001, -005, -003, -004. The Laboratory Control Sample for Sodium is within laboratory Control Limits

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

Analytical Report 462048

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

Midland Odessa Discounted Fee Schedule

073018

08-MAY-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

08-MAY-13

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **462048**
Midland Odessa Discounted Fee Schedule
Project Address: N. Eunice

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 462048. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 462048 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
IW028042613	W	04-26-13 10:55		462048-001
MW-0089SA042613	W	04-26-13 11:05		462048-002
MW009A042613	W	04-26-13 12:45		462048-003
IW030042613	W	04-26-13 12:15		462048-004
DUP1042613	W	04-26-13 00:00		462048-005

CASE NARRATIVE

Client Name: Conestoga Rovers & Associates

Project Name: Midland Odessa Discounted Fee Schedule

Project ID:	*073018*	Report Date:	*08-MAY-13*
Work Order Number(s):	*462048*	Date Received:	*04/26/2013*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-912347 Chromium, Hexavalent by SW 7196A
SW7196A

Batch 912347, Hexavalent Chromium recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 462048-002, -001, -005, -003, -004.
The Laboratory Control Sample for Hexavalent Chromium is within laboratory Control Limits

Batch: LBA-912600 Total Metals by EPA 6010B
SW6010B

Batch 912600, Sodium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 462048-002, -001, -005, -003, -004.
The Laboratory Control Sample for Sodium is within laboratory Control Limits

Batch: LBA-912872 Inorganic Anions by EPA 300/300.1
E300

Batch 912872, Bromide, Ortho-Phosphate recovered below QC limits in the Matrix Spike.
Samples affected are: 462048-002, -001, -005, -003, -004.
The Laboratory Control Sample for Ortho-Phosphate , Bromide is within laboratory Control Limits

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **IW028042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-001** Date Collected: 04.26.13 10.55 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.26.13 15.01 Analyst: AMB Date Prep: 04.26.13 15.01 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**7.82**	4.00	0.120	mg/L		20
Ortho-Phosphate	14265-44-2	ND	4.00	0.720	mg/L	U	20
Sulfate	14808-79-8	**1460**	40.0	0.920	mg/L		20

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.22 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 13.57 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**5.32**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 15.28 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**0.848**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**569**	0.500	0.0541	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**IW028042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-001**	Date Collected: 04.26.13 10.55	Date Received: 04.26.13 14.45

Analytical Method: **Dissolved Metals per ICP by SW846 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.32 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 15.25 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.719**	0.100	0.0500	mg/L		10

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **MW-0089SA042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-002** Date Collected: 04.26.13 11.05 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 09.43 Analyst: AMB Date Prep: 04.27.13 09.43 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**8.70**	4.00	0.120	mg/L		20
Ortho-Phosphate	14265-44-2	ND	4.00	0.720	mg/L	U	20
Sulfate	14808-79-8	**1560**	40.0	0.920	mg/L		20

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.25 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 16.00 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**6.75**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 15.46 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**1.23**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**491**	0.500	0.0541	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **MW-0089SA042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-002** Date Collected: 04.26.13 11.05 Date Received: 04.26.13 14.45

Analytical Method: **Dissolved Metals per ICP by SW846 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.38 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 15.25 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**1.15**	0.100	0.0500	mg/L		10

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **MW009A042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-003** Date Collected: 04.26.13 12.45 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 10.05 Analyst: AMB Date Prep: 04.27.13 10.05 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**5.05**	2.00	0.0600	mg/L		10
Ortho-Phosphate	14265-44-2	ND	2.00	0.360	mg/L	U	10
Sulfate	14808-79-8	**808**	20.0	0.460	mg/L		10

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.27 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 16.17 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**3.13**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.15 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**0.683**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**282**	5.00	0.541	mg/L		10

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**MW009A042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-003**	Date Collected: 04.26.13 12.45	Date Received: 04.26.13 14.45

Analytical Method:	**Dissolved Metals per ICP by SW846 6010B**		% Moist:	Prep Method: 3010A	
Date Anal:	04.29.13 17.44	Analyst: MKO	Date Prep: 04.29.13 11.30		Tech: MKO
Anal seq:	912600		Prep seq: 637271		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method:	**Sulfide by SM4500-S-F-00**		% Moist:	Prep Method:	
Date Anal:	04.29.13 15.49	Analyst: DHE	Date Prep:		Tech: DHE
Anal seq:	912467		Prep seq:		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method:	**Chromium, Hexavalent by SW 7196A**		% Moist:	Prep Method:	
Date Anal:	04.26.13 15.25	Analyst: WRU	Date Prep:		Tech: WRU
Anal seq:	912347		Prep seq:		

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.657**	0.0100	0.00500	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id: **IW030042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-004** Date Collected: 04.26.13 12.15 Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 10.27 Analyst: AMB Date Prep: 04.27.13 10.27 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**112**	2.00	0.0600	mg/L		10
Ortho-Phosphate	14265-44-2	ND	2.00	0.360	mg/L	U	10
Sulfate	14808-79-8	ND	20.0	0.460	mg/L	U	10

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.28 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	**3.01**	0.100	0.0110	mg/L		1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 15.21 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**816**	50.0	25.0	mg/L		50

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.20 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	ND	0.0100	0.00355	mg/L	U	1
Iron	7439-89-6	**54.2**	0.200	0.0188	mg/L		1
Sodium	7440-23-5	**131**	0.500	0.0541	mg/L		1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**IW030042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-004**	Date Collected: 04.26.13 12.15	Date Received: 04.26.13 14.45

Analytical Method:	**Dissolved Metals per ICP by SW846 6010B**		% Moist:		Prep Method: 3010A
Date Anal:	04.29.13 17.50	Analyst: MKO	Date Prep: 04.29.13 11.30		Tech: MKO
Anal seq:	912600		Prep seq: 637271		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	**5.29**	0.200	0.0188	mg/L		1

Analytical Method:	**Sulfide by SM4500-S-F-00**		% Moist:		Prep Method:
Date Anal:	04.29.13 15.49	Analyst: DHE	Date Prep:		Tech: DHE
Anal seq:	912467		Prep seq:		
Subcontractor:	SUB: E871002				

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method:	**Chromium, Hexavalent by SW 7196A**		% Moist:		Prep Method:
Date Anal:	04.26.13 15.25	Analyst: WRU	Date Prep:		Tech: WRU
Anal seq:	912347		Prep seq:		

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	ND	0.0100	0.00500	mg/L	U	1

Certificate of Analytical Results 462048

Conestoga Rovers & Associates, Midland, TX

Midland Odessa Discounted Fee Schedule

Sample Id:	**DUP1042613**	Matrix: Water	Sample Depth:
Lab Sample Id:	**462048-005**	Date Collected: 04.26.13 00.00	Date Received: 04.26.13 14.45

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.27.13 10.48 Analyst: AMB Date Prep: 04.27.13 10.48 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	**5.45**	2.00	0.0600	mg/L		10
Ortho-Phosphate	14265-44-2	ND	2.00	0.360	mg/L	U	10
Sulfate	14808-79-8	**1500**	20.0	0.460	mg/L		10

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.29 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 15.33 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**5.92**	1.00	0.500	mg/L		1

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.26 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	**0.786**	0.0100	0.00355	mg/L		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	**534**	0.500	0.0541	mg/L		1

Sample Id: **DUP1042613** Matrix: Water Sample Depth:

Lab Sample Id: **462048-005** Date Collected: 04.26.13 00.00 Date Received: 04.26.13 14.45

Analytical Method: **Dissolved Metals per ICP by SW846 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 17.56 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 15.25 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.757**	0.100	0.0500	mg/L		10

Sample Id: **637271-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **637271-1-BLK** Date Collected: Date Received:

Analytical Method: **Total Metals by EPA 6010B** % Moist: Prep Method: 3010A

Date Anal: 04.29.13 15.10 Analyst: MKO Date Prep: 04.29.13 11.30 Tech: MKO

Anal seq: 912600 Prep seq: 637271

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Chromium	7440-47-3	ND	0.0100	0.00355	mg/L	U	1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	U	1
Sodium	7440-23-5	ND	0.500	0.0541	mg/L	U	1

Sample Id: **637314-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **637314-1-BLK** Date Collected: Date Received:

Analytical Method: **Nitrogen Ammonia by SM4500-NH3C** % Moist: Prep Method: SM4500NH_I

Date Anal: 04.29.13 17.19 Analyst: DEP Date Prep: 04.26.13 16.30 Tech: DEP

Anal seq: 912513 Prep seq: 637314

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0110	mg/L	U	1

Sample Id: **637540-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **637540-1-BLK** Date Collected: Date Received:

Analytical Method: **Inorganic Anions by EPA 300/300.1** % Moist: Prep Method: E300P

Date Anal: 04.26.13 13.56 Analyst: AMB Date Prep: 04.26.13 13.56 Tech: AMB

Anal seq: 912872 Prep seq: 637540

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Bromide	24959-67-9	ND	0.200	0.00600	mg/L	U	1
Ortho-Phosphate	14265-44-2	ND	0.200	0.0360	mg/L	U	1
Sulfate	14808-79-8	ND	2.00	0.0460	mg/L	U	1

Sample Id: **912347-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **912347-1-BLK** Date Collected: Date Received:

Analytical Method: **Chromium, Hexavalent by SW 7196A** % Moist: Prep Method:

Date Anal: 04.26.13 11.20 Analyst: WRU Date Prep: Tech: WRU

Anal seq: 912347 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	ND	0.0100	0.00500	mg/L	U	1

Sample Id: **912467-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **912467-1-BLK** Date Collected: Date Received:

Analytical Method: **Sulfide by SM4500-S-F-00** % Moist: Prep Method:

Date Anal: 04.29.13 15.49 Analyst: DHE Date Prep: Tech: DHE

Anal seq: 912467 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	U	1

Sample Id: **912472-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: **912472-1-BLK** Date Collected: Date Received:

Analytical Method: **TOC by SM 5310C** % Moist: Prep Method:

Date Anal: 04.29.13 13.33 Analyst: MAB Date Prep: Tech: MAB

Anal seq: 912472 Prep seq:

Subcontractor: SUB: E871002

Parameter	CAS Number	Result	MQL	SDL	Units	Flag	Dil Factor
Total Organic Carbon	7440-44-0	ND	1.00	0.500	mg/L	U	1

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Blank Spike Recovery

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048 **Project ID:** 073018

Lab Batch #: 912347 **Sample:** 912347-1-BKS **Matrix:** Water
Date Analyzed: 04/26/2013 **Date Prepared:** 04/26/2013 **Analyst:** WRU
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0250	0.0204	82	80-120	

Lab Batch #: 912513 **Sample:** 637314-1-BKS **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/26/2013 **Analyst:** DEP
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

Nitrogen Ammonia by SM4500-NH3C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Nitrogen, Ammonia (as N)	<0.100	2.50	2.53	101	80-120	

Lab Batch #: 912472 **Sample:** 912472-1-BKS **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/29/2013 **Analyst:** MAB
Reporting Units: mg/L **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	15.0	15.5	103	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048 **Project ID:** 073018

Analyst: AMB **Date Prepared:** 04/26/2013 **Date Analyzed:** 04/26/2013

Lab Batch ID: 912872 **Sample:** 637540-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.200	5.00	4.23	85	5.00	4.21	84	0	80-120	20	
Ortho-Phosphate	<0.200	5.00	5.13	103	5.00	4.68	94	9	80-120	20	
Sulfate	<2.00	25.0	24.2	97	25.0	23.4	94	3	80-120	20	

Analyst: DHE **Date Prepared:** 04/29/2013 **Date Analyzed:** 04/29/2013

Lab Batch ID: 912467 **Sample:** 912467-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	1000	960	96	1000	960	96	0	75-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 04/29/2013 **Date Analyzed:** 04/29/2013

Lab Batch ID: 912600 **Sample:** 637271-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	1.10	110	1.00	1.10	110	0	80-120	20	
Iron	<0.200	5.00	5.28	106	5.00	5.18	104	2	80-120	20	
Sodium	<0.500	25.0	27.4	110	25.0	27.2	109	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048

Lab Batch #: 912872 **Project ID:** 073018

Date Analyzed: 04/26/2013 **Date Prepared:** 04/26/2013 **Analyst:** AMB

QC- Sample ID: 462048-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	7.82	100	89.7	82	80-120	
Ortho-Phosphate	<4.00	100	111	111	80-120	
Sulfate	1460	500	2000	108	80-120	

Lab Batch #: 912872

Date Analyzed: 04/27/2013 **Date Prepared:** 04/27/2013 **Analyst:** AMB

QC- Sample ID: 462056-002 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	1.38	25.0	20.7	77	80-120	X
Ortho-Phosphate	<1.00	25.0	<1.00	0	80-120	X
Sulfate	14.1	125	148	107	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order # : 462048 **Project ID:** 073018

Lab Batch ID: 912347 **QC- Sample ID:** 461962-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 04/26/2013 **Date Prepared:** 04/26/2013 **Analyst:** WRU
Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	0.200	0.248	124	0.200	0.249	125	0	80-120	20	X

Lab Batch ID: 912513 **QC- Sample ID:** 462048-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/26/2013 **Analyst:** DEP
Reporting Units: mg/L

Nitrogen Ammonia by SM4500-NH3C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.56	102	2.50	2.60	104	2	80-120	20	

Lab Batch ID: 912472 **QC- Sample ID:** 462048-001 S **Batch #:** 1 **Matrix:** Water
Date Analyzed: 04/29/2013 **Date Prepared:** 04/29/2013 **Analyst:** MAB
Reporting Units: mg/L

TOC by SM 5310C Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	5.32	15.0	21.8	110	15.0	21.6	109	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: Midland Odessa Discounted Fee Schedule

Work Order # : 462048 **Project ID:** 073018

Lab Batch ID: 912600 **QC- Sample ID:** 462048-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 04/29/2013 **Date Prepared:** 04/29/2013 **Analyst:** MKO

Reporting Units: mg/L

Total Metals by EPA 6010B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	0.848	1.00	1.80	95	1.00	1.71	86	5	80-120	20	
Iron	<0.200	5.00	4.98	100	5.00	4.68	94	6	80-120	20	
Sodium	569	25.0	569	0	25.0	556	0	2	75-125	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Midland Odessa Discounted Fee Schedule

Work Order #: 462048

Lab Batch #: 912347 **Project ID:** 073018

Date Analyzed: 04/26/2013 11:20 **Date Prepared:** 04/26/2013 **Analyst:** WRU

QC- Sample ID: 461962-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Chromium, Hexavalent by SW 7196A Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Hexavalent Chromium	<0.0100	<0.0100	0	20	U

Lab Batch #: 912467

Date Analyzed: 04/29/2013 15:49 **Date Prepared:** 04/29/2013 **Analyst:** DHE

QC- Sample ID: 461995-017 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

XENCO Laboratories

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☑ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 330715 Page 1 of 1

Lab Only: 462048

Company-City CRA-midland	**Phone** 432-686-0086
Project Name-Location N Envie	☐ Previously done at XENCO **Project ID** 073018
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other	**Proj. Manager (PM)** Mike Wiznecwiechi
E-mail Results to ☑ PM and	**Fax No:** 432-686-0186
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O. Bill to:	
Quote/Pricing:	**P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP** QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:	
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)	
Sampler Name Justin Nikan **Signature**	

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth (ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives
1	EW028 042613	4-26-13	1055		W		X	5			
2	MW895A 042613		1105								
3	MW009A 042613		1245								
4	EW030 042613		1215								
5	Dup 042613		—								
6											
7											
8											
9											
10											

	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	Total Chromium, Iron, Sodium SW846 6010B	Hex Chrom Chromium SW 846 7196A	Anions (SO4, Br) 9056 E300	Sulfide SM4500	TOC SM 5310	Dissolved Iron SW 846 6010B	Ammonia Nitrogen SM4500	Orthophosphate phosphorus E300	Total Coliform Microbial Count	TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed
1										X	X	X	X	X	X	X	X				
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Remarks

Addn: Date Rcv. by: From:

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1)	4-26-13 1945	2) Shannon Tio	4/26/13 14:45
3)		4)	
5)		6)	

Total Containers per COC: 25 Cooler Temp: 1.5 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 04/26/2013 02:45:00 PM

Work Order #: 462048

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 04/29/2013

Checklist reviewed by: Kelsey Brooks Date: 04/29/2013

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Kelsey Brooks
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.:
Project Name:
Collected: 04/26/2013
Received: 04/27/2013
Analyzed: 04/27/2013 11:30 AM

Hygeia Sample ID	101126	101127 QC X	101128
Client Sample ID	**462048-001**	**462048-002**	**462048-003**
Location	IW028042613	MW895A042613	MW009A042613
Sample Type	Water	Water	Water
Sample Amount	1 mL	1 mL	1 mL
Medium / Method	R2A	R2A	R2A
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / 100 mL**	%	Raw Count	Dilution	**CFU / 100 mL**	%	Raw Count	Dilution	**CFU / 100 mL**	%
Anaerobic heterotrophic bacteria	0	1	<100		4	1	400	100	1	1	100	100
Total CFU	<100 / 100 mL				400 / 100 mL				100 / 100 mL			
Comments												

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Kelsey Brooks
Xenco Laboratories
4141 Greenbriar
Stafford, TX 77477

Project No.:
Project Name:
Collected: 04/26/2013
Received: 04/27/2013
Analyzed: 04/27/2013 11:30 AM

Hygeia Sample ID	101129	101130
Client Sample ID	**462048-004**	**462048-005**
Location	IA030042613	DUP1042613
Sample Type	Water	Water
Sample Amount	1 mL	0.1 mL
Medium / Method	R2A	R2A
Dilution Factor(s)	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / 100 mL**	%	Raw Count	Dilution	**CFU / 100 mL**	%
Anaerobic heterotrophic bacteria	1	1	100	100	480	1	480,000	100
Total CFU			100 / 100 mL				480,000 / 100 mL	
Comments								

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311 Kelsey Brooks Xenco Laboratories 4141 Greenbriar Stafford, TX 77477	Project No.: Project Name: Collected: 04/26/2013 Received: 04/27/2013 Analyzed: 04/27/2013 11:30 AM

Analyst Vanessa Garcia
Vanessa Garcia

Lab Director
Crystal Enloe

Thank you for using Hygeia Laboratories Inc. We strive to provide superior quality and service.

Data in this report are reliable within two significant figures. Sample results are not corrected based on results of blanks. The minimum reporting limit (MRL) is calculated as the lowest dilution tested/volume. Estimates of uncertainty are available upon request. CFU = colony forming units. CFU/unit is calculated as raw count*dilution/sample amount. Total CFU/unit is the sum of individual CFUs/unit and is considered <MRL if no colonies are present.

Confidentiality Notice:

The information contained herein is confidential and privileged, intended for the exclusive use of the individual or entity named above. If the reader of this document is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of the document(s) is strictly prohibited. If you have received this document in error, please immediately notify us by telephone to arrange for its return.

Guidelines for Interpretation:

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork. Bacteria have been associated with a variety of health effects and sensitivity varies from person to person. Contact the CDC (www.cdc.gov) for information regarding potential health risks related to exposure in air or on surfaces and the USEPA (www.epa.gov) for existing established standards including regulated water quality standards.

Liability Notice:

Hygeia Laboratories Inc. and its personnel shall not be held liable for any misinformation provided to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report relates only to samples submitted and analyzed.

Revision 0 04/29/2013 ce

Attachment A Laboratory Data Package Cover Page

Project Name: **Midland Odessa Discounted** Laboratory Number: **462048**

This Data package consists of : Laboratory Batch No(s) **912600**

■ This signature page, the laboratory review checklist, and the following reportable data:

■ R1 Field chain-of-custody documentation;

■ R2 Sample identification cross-reference;

■ R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

■ R4 Surrogate Recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

■ R5 Test reports/summary forms for blank samples;

■ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

■ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs) and
- e) The laboratory's MS/MSD QC limits

■ R8 Laboratory anaytical duplicate (if applicable) recovery and precision:
- a) the amount of analyte measured in the duplicate,
- b) the calculated RPD, and
- c) the laboratory's QC limits for analytical duplicates.

■ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

■ R10 Other problems or anomalies.

■ Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted
in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception
Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Alejandro Montoya	Alejandro M.	**Odessa Laboratory Directo**	**05/07/13**
Name (Printed)	Signature	Official Title (printed)	Date

A1

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO Laboratories	LRC Date :	05/07/13
Project Name:	Midland Odessa Discounted Fee Schedule	Laboratory Job Number :	462048
Reviewer Name:	AMB	Batch Number(s) :	912600

#[1]	A[2]	Description	Yes	No	NA[3]	[4]	ER#[5]
R1	OI	**Chain-of-Custody (COC)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soil/solid samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, were TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency ?	X				
		Were method blanks taken through the entire analytical procedure, including preparation and, if applicable, cleanup procedures ?	X				
		Were Blank Concentrations <MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within the QC limits?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				1
		Were MS/MSD RPDs within the laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method Quantitation Limits (MQLs)**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO Laboratories	LRC Date :	05/07/13
Project Name:	Midland Odessa Discounted Fee Schedule	Laboratory Job Number :	462048
Reviewer Name:	AMB	Batch Number(s) :	912600

#[1]	A[2]	Description	Yes	No	NA[3]	[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and the highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing Calibration Verification (ICCV and CCV) and continuing calibration blank**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB <MDL?	X				
S3	O	**Mass Spectral Tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal Standard (IS)**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestions Spikes, and Method of Standard Additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods (NELAC Chapter 5)**					
		Are all methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Attachment A (cont'd): Laboratory Review Checklist: Exception Reports

Laboratory Name:	XENCO Laboratories	LRC Date:	05/07/13
Project Name:	Midland Odessa Discounted Fee Schedule	Laboratory Job Number:	462048
Reviewer Name:	AMB	Batch Number(s) :	912600

ER# [1]	DESCRIPTION
1	SW6010B Batch 912600, Sodium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Samples affected are: 462048-002, -001, -005, -003, -004. The Laboratory Control Sample for Sodium is within laboratory Control Limits

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

Analytical Report 472775

for

Conestoga Rovers & Associates

Project Manager: Mike Wisniowiecki

N. Eunice/Eunice

073018

04-NOV-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

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04-NOV-13

Project Manager: **Mike Wisniowiecki**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **472775**
N. Eunice/Eunice
Project Address: New Mexico

Mike Wisniowiecki:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 472775. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 472775 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-895A-102413	W	10-24-13 11:20		472775-001
IW-30-102413	W	10-24-13 12:10		472775-002
MW-009A-102413	W	10-24-13 13:05		472775-003
DUP-102413	W	10-24-13 00:00		472775-004
Metals Trip Blank	W	10-22-13 09:45		472775-005

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-926075 Total Metals by EPA 6010B
SW6010B

Batch 926075, Sodium recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 472775-001, -004, -003, -002, -005.
The Laboratory Control Sample for Sodium is within laboratory Control Limits

Batch: LBA-926124 Chromium, Hexavalent by SW 7196A
SW7196A

Batch 926124, Hexavalent Chromium recovered above QC limits in the laboratory control sample.
Samples affected are: 472775-001, -004, -003, -002.

SW7196A

Batch 926124, Hexavalent Chromium recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 472775-001, -004, -003, -002.

Batch: LBA-926163 Inorganic Anions by EPA 300/300.1
E300

Batch 926163, Ortho-Phosphate recovered above QC limits in the Matrix Spike.
Samples affected are: 472775-001, -004, -003, -002.
The Laboratory Control Sample for Ortho-Phosphate is within laboratory Control Limits

Certificate of Analytical Results

472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **MW-895A-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-001 Date Collected: 10.24.13 11.20 Date Received: 10.24.13 16.30

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: AMB % Moist: Tech: AMB

Seq Number: 926163 Date Prep: 10.25.13 10.00

Prep seq: 646019

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Bromide	24959-67-9	**8.20**	8.00	0.120	mg/L	10.26.13 02:36		20
Ortho-Phosphate	14265-44-2	ND	8.00	0.720	mg/L	10.26.13 02:36	U	20
Sulfate	14808-79-8	**1360**	40.0	0.920	mg/L	10.26.13 02:36		20

Analytical Method: TOC by SM 5310C Prep Method: SM5310P

Analyst: RKO % Moist: Tech: RKO

Seq Number: 926309 Date Prep: 10.29.13 10.00

Subcontractor: SUB: E871002 Prep seq: 646103

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**6.91**	1.00	0.500	mg/L	10.29.13 14:45		1

Analytical Method: Total Metals by EPA 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926075 Date Prep: 10.25.13 11.00

Subcontractor: SUB: E871002 Prep seq: 645946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chromium	7440-47-3	**1.17**	0.0100	0.00355	mg/L	10.25.13 17:20		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.25.13 17:20	U	1
Sodium	7440-23-5	**434**	0.500	0.0541	mg/L	10.25.13 17:20		1

Analytical Method: Dissolved Metals per ICP by SW846 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926231 Date Prep: 10.28.13 07.10

Subcontractor: SUB: E871002 Prep seq: 646001

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.28.13 20:44	U	1

Certificate of Analytical Results
472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **MW-895A-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-001 Date Collected: 10.24.13 11.20 Date Received: 10.24.13 16.30

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P

Analyst: DEP % Moist: Tech: DEP

Seq Number: 926199 Date Prep: 10.28.13 14.25

Subcontractor: SUB: E871002 Prep seq: 646038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0115	mg/L	10.28.13 17:05	U	1

Analytical Method: Sulfide by SM4500-S-F-00 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 926356 Date Prep:

Subcontractor: SUB: E871002 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Sulfide, total	18496-25-8	**5.00**	5.00	1.00	mg/L	10.30.13 13:09		1

Analytical Method: Chromium, Hexavalent by SW 7196A Prep Method:

Analyst: WRU % Moist: Tech: WRU

Seq Number: 926124 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**1.16**	0.200	0.100	mg/L	10.25.13 10:30		20

Certificate of Analytical Results

472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **IW-30-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-002 Date Collected: 10.24.13 12.10 Date Received: 10.24.13 16.30

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: AMB % Moist: Tech: AMB

Seq Number: 926163 Date Prep: 10.25.13 10.00

Prep seq: 646019

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Bromide	24959-67-9	**291**	8.00	0.120	mg/L	10.26.13 02:59	E	20
Ortho-Phosphate	14265-44-2	ND	8.00	0.720	mg/L	10.26.13 02:59	U	20
Sulfate	14808-79-8	ND	40.0	0.920	mg/L	10.26.13 02:59	U	20

Analytical Method: TOC by SM 5310C Prep Method: SM5310P

Analyst: RKO % Moist: Tech: RKO

Seq Number: 926424 Date Prep: 10.30.13 08.17

Subcontractor: SUB: E871002 Prep seq: 646203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**761**	100	50.0	mg/L	10.30.13 13:23		100

Analytical Method: Total Metals by EPA 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926075 Date Prep: 10.25.13 11.00

Subcontractor: SUB: E871002 Prep seq: 645946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chromium	7440-47-3	**0.0168**	0.0100	0.00355	mg/L	10.25.13 17:26		1
Iron	7439-89-6	**118**	0.200	0.0188	mg/L	10.25.13 17:26		1
Sodium	7440-23-5	**206**	0.500	0.0541	mg/L	10.25.13 17:26		1

Analytical Method: Dissolved Metals per ICP by SW846 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926231 Date Prep: 10.28.13 07.10

Subcontractor: SUB: E871002 Prep seq: 646001

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Iron	7439-89-6	**38.3**	0.200	0.0188	mg/L	10.28.13 21:12		1

Sample Id: **IW-30-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-002 Date Collected: 10.24.13 12.10 Date Received: 10.24.13 16.30

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P

Analyst: DEP % Moist: Tech: DEP

Seq Number: 926199 Date Prep: 10.28.13 14.25

Subcontractor: SUB: E871002 Prep seq: 646038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	**0.100**	0.100	0.0115	mg/L	10.28.13 17:08		1

Analytical Method: Sulfide by SM4500-S-F-00 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 926356 Date Prep:

Subcontractor: SUB: E871002 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	10.30.13 13:09	U	1

Analytical Method: Chromium, Hexavalent by SW 7196A Prep Method:

Analyst: WRU % Moist: Tech: WRU

Seq Number: 926124 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	ND	0.200	0.100	mg/L	10.25.13 10:30	U	20

Certificate of Analytical Results

472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **MW-009A-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-003 Date Collected: 10.24.13 13.05 Date Received: 10.24.13 16.30

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: AMB % Moist: Tech: AMB

Seq Number: 926163 Date Prep: 10.25.13 10.00

Prep seq: 646019

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Bromide	24959-67-9	**9.60**	8.00	0.120	mg/L	10.26.13 03:22		20
Ortho-Phosphate	14265-44-2	ND	8.00	0.720	mg/L	10.26.13 03:22	U	20
Sulfate	14808-79-8	**611**	40.0	0.920	mg/L	10.26.13 03:22		20

Analytical Method: TOC by SM 5310C Prep Method: SM5310P

Analyst: RKO % Moist: Tech: RKO

Seq Number: 926309 Date Prep: 10.29.13 10.00

Subcontractor: SUB: E871002 Prep seq: 646103

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**3.47**	1.00	0.500	mg/L	10.29.13 16:37		1

Analytical Method: Total Metals by EPA 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926075 Date Prep: 10.25.13 11.00

Subcontractor: SUB: E871002 Prep seq: 645946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chromium	7440-47-3	**0.549**	0.0100	0.00355	mg/L	10.25.13 17:32		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.25.13 17:32	U	1
Sodium	7440-23-5	**287**	0.500	0.0541	mg/L	10.25.13 17:32		1

Analytical Method: Dissolved Metals per ICP by SW846 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926231 Date Prep: 10.28.13 07.10

Subcontractor: SUB: E871002 Prep seq: 646001

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.28.13 21:18	U	1

Certificate of Analytical Results
472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **MW-009A-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-003 Date Collected: 10.24.13 13.05 Date Received: 10.24.13 16.30

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P

Analyst: DEP % Moist: Tech: DEP

Seq Number: 926199 Date Prep: 10.28.13 14.25

Subcontractor: SUB: E871002 Prep seq: 646038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0115	mg/L	10.28.13 17:10	U	1

Analytical Method: Sulfide by SM4500-S-F-00 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 926356 Date Prep:

Subcontractor: SUB: E871002 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	10.30.13 13:09	U	1

Analytical Method: Chromium, Hexavalent by SW 7196A Prep Method:

Analyst: WRU % Moist: Tech: WRU

Seq Number: 926124 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.552**	0.0100	0.00500	mg/L	10.25.13 10:30		1

Certificate of Analytical Results
472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **DUP-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-004 Date Collected: 10.24.13 00.00 Date Received: 10.24.13 16.30

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: AMB % Moist: Tech: AMB

Seq Number: 926163 Date Prep: 10.25.13 10.00

Prep seq: 646019

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Bromide	24959-67-9	**9.20**	8.00	0.120	mg/L	10.26.13 03:44		20
Ortho-Phosphate	14265-44-2	ND	8.00	0.720	mg/L	10.26.13 03:44	U	20
Sulfate	14808-79-8	**608**	40.0	0.920	mg/L	10.26.13 03:44		20

Analytical Method: TOC by SM 5310C Prep Method: SM5310P

Analyst: RKO % Moist: Tech: RKO

Seq Number: 926309 Date Prep: 10.29.13 10.00

Subcontractor: SUB: E871002 Prep seq: 646103

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Total Organic Carbon	7440-44-0	**3.36**	1.00	0.500	mg/L	10.29.13 16:52		1

Analytical Method: Total Metals by EPA 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926075 Date Prep: 10.25.13 11.00

Subcontractor: SUB: E871002 Prep seq: 645946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chromium	7440-47-3	**0.537**	0.0100	0.00355	mg/L	10.25.13 17:37		1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.25.13 17:37	U	1
Sodium	7440-23-5	**282**	0.500	0.0541	mg/L	10.25.13 17:37		1

Analytical Method: Dissolved Metals per ICP by SW846 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926231 Date Prep: 10.28.13 07.10

Subcontractor: SUB: E871002 Prep seq: 646001

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.28.13 21:35	U	1

Sample Id: **DUP-102413** Matrix: Water Sample Depth:

Lab Sample Id: 472775-004 Date Collected: 10.24.13 00.00 Date Received: 10.24.13 16.30

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P

Analyst: DEP % Moist: Tech: DEP

Seq Number: 926199 Date Prep: 10.28.13 14.25

Subcontractor: SUB: E871002 Prep seq: 646038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0115	mg/L	10.28.13 17:11	U	1

Analytical Method: Sulfide by SM4500-S-F-00 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 926356 Date Prep:

Subcontractor: SUB: E871002 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	10.30.13 13:09	U	1

Analytical Method: Chromium, Hexavalent by SW 7196A Prep Method:

Analyst: WRU % Moist: Tech: WRU

Seq Number: 926124 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	**0.549**	0.0100	0.00500	mg/L	10.25.13 10:30		1

Sample Id: **Metals Trip Blank** Matrix: Water Sample Depth:

Lab Sample Id: 472775-005 Date Collected: 10.22.13 09.45 Date Received: 10.24.13 16.30

Analytical Method: Total Metals by EPA 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926075 Date Prep: 10.25.13 11.00

Subcontractor: SUB: E871002 Prep seq: 645946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chromium	7440-47-3	ND	0.0100	0.00355	mg/L	10.25.13 17:43	U	1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.25.13 17:43	U	1
Sodium	7440-23-5	ND	0.500	0.0541	mg/L	10.25.13 17:43	U	1

Certificate of Analytical Results

472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id: **645946-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 645946-1-BLK Date Collected: Date Received:

Analytical Method: Total Metals by EPA 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926075 Date Prep: 10.25.13 11.00

Subcontractor: SUB: E871002 Prep seq: 645946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chromium	7440-47-3	ND	0.0100	0.00355	mg/L	10.25.13 15:38	U	1
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.25.13 15:38	U	1
Sodium	7440-23-5	ND	0.500	0.0541	mg/L	10.25.13 15:38	U	1

Sample Id: **646001-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 646001-1-BLK Date Collected: Date Received:

Analytical Method: Dissolved Metals per ICP by SW846 6010B Prep Method: 3010A

Analyst: MKO % Moist: Tech: MKO

Seq Number: 926231 Date Prep: 10.28.13 07.10

Subcontractor: SUB: E871002 Prep seq: 646001

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Iron	7439-89-6	ND	0.200	0.0188	mg/L	10.28.13 20:27	U	1

Sample Id: **646019-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 646019-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: AMB % Moist: Tech: AMB

Seq Number: 926163 Date Prep: 10.25.13 10.00

Prep seq: 646019

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Bromide	24959-67-9	ND	0.400	0.00600	mg/L	10.25.13 17:33	U	1
Ortho-Phosphate	14265-44-2	ND	0.400	0.0360	mg/L	10.25.13 17:33	U	1
Sulfate	14808-79-8	ND	2.00	0.0460	mg/L	10.25.13 17:33	U	1

Sample Id: **646038-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 646038-1-BLK Date Collected: Date Received:

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P

Analyst: DEP % Moist: Tech: DEP

Seq Number: 926199 Date Prep: 10.28.13 14.25

Subcontractor: SUB: E871002 Prep seq: 646038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Nitrogen, Ammonia (as N)	7664-41-7	ND	0.100	0.0115	mg/L	10.28.13 16:40	U	1

Sample Id: **646103-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 646103-1-BLK Date Collected: Date Received:

Analytical Method: TOC by SM 5310C Prep Method: SM5310P

Analyst: RKO % Moist: Tech: RKO

Seq Number: 926309 Date Prep: 10.29.13 10.00

Subcontractor: SUB: E871002 Prep seq: 646103

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Total Organic Carbon	7440-44-0	ND	1.00	0.500	mg/L	10.29.13 14:04	U	1

Sample Id: **646203-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 646203-1-BLK Date Collected: Date Received:

Analytical Method: TOC by SM 5310C Prep Method: SM5310P

Analyst: RKO % Moist: Tech: RKO

Seq Number: 926424 Date Prep: 10.30.13 08.17

Subcontractor: SUB: E871002 Prep seq: 646203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Total Organic Carbon	7440-44-0	ND	1.00	0.500	mg/L	10.30.13 11:53	U	1

Sample Id: **926124-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 926124-1-BLK Date Collected: Date Received:

Analytical Method: Chromium, Hexavalent by SW 7196A Prep Method:

Analyst: WRU % Moist: Tech: WRU

Seq Number: 926124 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Hexavalent Chromium	18540-29-9	ND	0.0100	0.00500	mg/L	10.25.13 10:30	U	1

Certificate of Analytical Results

472775

Conestoga Rovers & Associates, Midland, TX

N. Eunice/Eunice

Sample Id:	**926356-1-BLK**	Matrix:	Water	Sample Depth:	
Lab Sample Id:	926356-1-BLK	Date Collected:		Date Received:	
Analytical Method:	Sulfide by SM4500-S-F-00			Prep Method:	
Analyst:	DHE	% Moist:		Tech:	DHE
Seq Number:	926356	Date Prep:			
Subcontractor:	SUB: E871002	Prep seq:			

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Sulfide, total	18496-25-8	ND	5.00	1.00	mg/L	10.30.13 13:09	U	1

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Blank Spike Recovery

Project Name: N. Eunice/Eunice

Work Order #: 472775 **Project ID:** 073018

Lab Batch #: 926124 **Sample:** 926124-1-BKS **Matrix:** Water

Date Analyzed: 10/25/2013 **Date Prepared:** 10/25/2013 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0200	0.0246	123	80-120	H

Lab Batch #: 926199 **Sample:** 646038-1-BKS **Matrix:** Water

Date Analyzed: 10/28/2013 **Date Prepared:** 10/28/2013 **Analyst:** DEP

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

Nitrogen Ammonia by EPA 350.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Nitrogen, Ammonia (as N)	<0.100	2.50	2.57	103	90-110	

Lab Batch #: 926309 **Sample:** 646103-1-BKS **Matrix:** Water

Date Analyzed: 10/29/2013 **Date Prepared:** 10/29/2013 **Analyst:** RKO

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	10.0	10.4	104	90-110	

Lab Batch #: 926424 **Sample:** 646203-1-BKS **Matrix:** Water

Date Analyzed: 10/30/2013 **Date Prepared:** 10/30/2013 **Analyst:** RKO

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	10.0	10.1	101	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: N. Eunice/Eunice

Work Order #: 472775 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 10/28/2013 **Date Analyzed:** 10/28/2013

Lab Batch ID: 926231 **Sample:** 646001-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Dissolved Metals per ICP by SW846 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Iron	<0.200	5.00	4.96	99	5.00	4.91	98	1	80-120	20	

Analyst: AMB **Date Prepared:** 10/25/2013 **Date Analyzed:** 10/25/2013

Lab Batch ID: 926163 **Sample:** 646019-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.400	5.00	4.86	97	5.00	4.87	97	0	80-120	20	
Ortho-Phosphate	<0.400	5.00	5.39	108	5.00	5.24	105	3	80-120	20	
Sulfate	<2.00	25.0	24.6	98	25.0	24.5	98	0	80-120	20	

Analyst: DHE **Date Prepared:** 10/30/2013 **Date Analyzed:** 10/30/2013

Lab Batch ID: 926356 **Sample:** 926356-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	50.0	43.0	86	50.0	43.0	86	0	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: N. Eunice/Eunice

Work Order #: 472775 **Project ID:** 073018

Analyst: MKO **Date Prepared:** 10/25/2013 **Date Analyzed:** 10/25/2013

Lab Batch ID: 926075 **Sample:** 645946-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	1.02	102	1.00	1.01	101	1	80-120	20	
Iron	<0.200	5.00	4.80	96	5.00	4.78	96	0	80-120	20	
Sodium	<0.500	25.0	25.9	104	25.0	25.4	102	2	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: N. Eunice/Eunice

Work Order #: 472775

Lab Batch #: 926163 **Project ID:** 073018

Date Analyzed: 10/25/2013 **Date Prepared:** 10/25/2013 **Analyst:** AMB

QC- Sample ID: 472770-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	<2.00	25.0	26.0	104	80-120	
Ortho-Phosphate	<2.00	25.0	32.1	128	80-120	X
Sulfate	39.2	125	166	101	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice/Eunice

Work Order # : 472775 **Project ID:** 073018

Lab Batch ID: 926124 **QC- Sample ID:** 472775-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 10/25/2013 **Date Prepared:** 10/25/2013 **Analyst:** WRU

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	<0.200	4.00	0.862	22	4.00	0.868	22	1	80-120	20	X

Lab Batch ID: 926231 **QC- Sample ID:** 472775-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 10/28/2013 **Date Prepared:** 10/28/2013 **Analyst:** MKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Dissolved Metals per ICP by SW846 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Iron	<0.200	5.00	4.94	99	5.00	4.79	96	3	75-125	20	

Lab Batch ID: 926199 **QC- Sample ID:** 472599-002 S **Batch #:** 1 **Matrix:** Waste Water

Date Analyzed: 10/28/2013 **Date Prepared:** 10/28/2013 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Nitrogen Ammonia by EPA 350.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	0.124	2.50	2.75	105	2.50	2.72	104	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice/Eunice

Work Order # : 472775 **Project ID:** 073018

Lab Batch ID: 926199 **QC- Sample ID:** 472750-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 10/28/2013 **Date Prepared:** 10/28/2013 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Nitrogen Ammonia by EPA 350.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	0.818	2.50	3.47	106	2.50	3.50	107	1	90-110	20	

Lab Batch ID: 926309 **QC- Sample ID:** 472775-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 10/29/2013 **Date Prepared:** 10/29/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	6.91	10.0	17.2	103	10.0	16.9	100	2	90-110	20	

Lab Batch ID: 926424 **QC- Sample ID:** 472852-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 10/30/2013 **Date Prepared:** 10/30/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	49.5	100	156	107	100	152	103	3	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice/Eunice

Work Order # : 472775 **Project ID:** 073018

Lab Batch ID: 926075 **QC- Sample ID:** 472685-001 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 10/25/2013 **Date Prepared:** 10/25/2013 **Analyst:** MKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0500	5.00	4.96	99	5.00	4.91	98	1	80-120	20	
Iron	<1.00	25.0	24.2	97	25.0	23.7	95	2	80-120	20	
Sodium	1560	125	1680	96	125	1580	16	6	75-125	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: N. Eunice/Eunice

Work Order #: 472775

Lab Batch #: 926356 **Project ID:** 073018

Date Analyzed: 10/30/2013 13:09 **Date Prepared:** 10/30/2013 **Analyst:** DHE

QC- Sample ID: 472780-014 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Sulfide by SM4500-S-F-00 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide, total	<5.00	<5.00	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories
B&A Laboratories, Inc.

☐ 4143 Greenbriar Drive, Stafford, Tx 77477 281-240-4200
☐ 5332 Blackberry Drive, San Antonio, Tx 78238 210-509-3334
☑ 12600 West I-20 East, Odessa, Tx 79765 432-563-1800
☐ 9701 Harry Hines Blvd., Dallas, Tx 75220 214-902-0300
☐ 842 Cantwell, Corpus Christi, Tx 78408 361-884-0371

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

Serial #: 239964 Page 1 of 3

Company-City	CRA	**Phone**	432-686-0086
Lab Only:	472775		
Proj Name-Location	N. Eunice / Eunice	☑ Previously done at XENCO	**Project ID** 073018
Proj State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM	**Proj. Manager (PM)**	Mike Wisniewiecki	
e-Mail Results to ☑ PM and	mwisniewiecki@CRAworld.com	**Fax No:**	713-734-3391
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O			
Bill to:			
Quote/Pricing:	**P.O No:**	☐ Call for P.O.	
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW TRRP			
QAPP Per-Contract CLP AFCEE NAVY DOE DOD USACE OTHER:			
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)			
Sampler Name	Joe Mireles	Signature	Joe Mireles

TAT: ASAP 5h 12h 24h 48h 3d (5d) 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOCs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOC's PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx 2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	Total Chromium, Fe, Sulfur Su846 6010B	Hexavalent Chromium Su846 7196A	Anions (SO4, Br) E300	Sulfide SM4500	TOC SM5310	Dissolved Iron Su-846 6010B	Ammonia-Nitrogen SM4500	Orthophosphate-phosphorus E300	Total Anaerobic Count	TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Remarks: Sample Clean-ups are pre-approved as needed	Addn: Date	Rcv by: From:
1	MW-8954-102413	10-24-13	1120		W		X	6	V	V	V										X	X	X	X	X	X	X	X						
2	IW-30-102413	10-24-13	1210		W		X	6	V	V	V										X	X	X	X	X	X	X	X						
3	MW-009A-102413	10-24-13	1305		W		X	6	V	V	V										X	X	X	X	X	X	X	X						
4	DUP-102413	10-24-13	—		W		X	6	V	V	V										X	X	X	X	X	X	X	X						
5					W		X	6	V	V	V																							
6																																		
7																																		
8																																		
9																																		
10																																		

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) SM	10-24-13 4:30	2)	10-24-13 4:30
3)		4)	
5)		6)	

Total Containers per COC: 24 Cooler Temp: 2.5

Upon signings this COC you accept XENCO terms and Conditions unless otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool,<4C) (**C**), None (**NA**), See Label (**L**), Other (**O**) _____

Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (V), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid(**S**), Water (**W**), Liquid (**L**)

Committed to Excellence in Service and Quality *www.xenco.com*

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previoiusly negotiated under a fully executed client contract.

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Kelsey Brooks
Xenco Laboratories (Odessa)
12600 West I-20 East
Odessa, TX 79765

Project No.: 1018187
Project Name:
Collected: 10/24/2013
Received: 10/25/2013
Analyzed: 10/29/2013

Hygeia Sample ID	105317	105318	105319
Client Sample ID	**472775-001**	**472775-002**	**472775-003**
Location	MW-895A-102413	IW-30-102413	MW-009A-102413
Sample Type	Water	Water	Water
Sample Amount	0.1 mL	0.1 mL	1 mL
Medium / Method	SM 9215	SM 9215	SM 9215
Dilution Factor(s)	1:1	1:1	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / mL**	%	Raw Count	Dilution	**CFU / mL**	%	Raw Count	Dilution	**CFU / mL**	%
Anaerobic heterotrophic bacteria	31	1	310	100	580	1	5,800	100	4	1	4	100
Total CFU			310 / mL				5,800 / mL				4 / mL	
Comments	*10/24/13 11:20*				*10/24/13 12:10*				*10/24/13 13:05*			

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311	Project No.: 1018187
Kelsey Brooks	Project Name:
Xenco Laboratories (Odessa)	Collected: 10/24/2013
12600 West I-20 East	Received: 10/25/2013
Odessa, TX 79765	Analyzed: 10/29/2013

Hygeia Sample ID	105320 QC X
Client Sample ID	**472775-004**
Location	DUP-102413
Sample Type	Water
Sample Amount	1 mL
Medium / Method	SM 9215
Dilution Factor(s)	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / mL**	%
Anaerobic heterotrophic bacteria	10	1	10	100
Total CFU	10 / mL			
Comments	*10/24/13 00:00*			

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311	Project No.: 1018187
Kelsey Brooks	Project Name:
Xenco Laboratories (Odessa)	Collected: 10/24/2013
12600 West I-20 East	Received: 10/25/2013
Odessa, TX 79765	Analyzed: 10/29/2013

Analyst Vanessa Garcia
Vanessa Garcia

Lab Director
Crystal Enloe

Thank you for using Hygeia Laboratories Inc. We strive to provide superior quality and service.

Data in this report are reliable within two significant figures. Sample results are not corrected based on results of blanks. The minimum reporting limit (MRL) is calculated as the lowest dilution tested/volume. Estimates of uncertainty are available upon request. CFU = colony forming units. CFU/unit is calculated as raw count*dilution/sample amount. Total CFU/unit is the sum of individual CFUs/unit and is considered <MRL if no colonies are present.

Confidentiality Notice:

The information contained herein is confidential and privileged, intended for the exclusive use of the individual or entity named above. If the reader of this document is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of the document(s) is strictly prohibited. If you have received this document in error, please immediately notify us by telephone to arrange for its return.

Guidelines for Interpretation:

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork. Bacteria have been associated with a variety of health effects and sensitivity varies from person to person. Contact the CDC (www.cdc.gov) for information regarding potential health risks related to exposure in air or on surfaces and the USEPA (www.epa.gov) for existing established standards including regulated water quality standards.

Liability Notice:

Hygeia Laboratories Inc. and its personnel shall not be held liable for any misinformation provided to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report relates only to samples submitted and analyzed.

Revision 0 11/01/2013 ce

Analytical Report 473427

for

Conestoga Rovers & Associates

Project Manager: Claudia Ramos

N. Eunice- Soy Lactate

073018

13-NOV-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

13-NOV-13

Project Manager: **Claudia Ramos**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **473427**
N. Eunice- Soy Lactate
Project Address: New Mexico

Claudia Ramos:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 473427. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 473427 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 473427

Conestoga Rovers & Associates, Midland, TX

N. Eunice- Soy Lactate

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
IW28-110413	W	11-04-13 09:20		473427-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-926964 TOC by SM 5310C
SM5310C

Batch 926964, Total Organic Carbon recovered below QC limits in the Matrix Spike.
Samples affected are: 473427-001.
The Laboratory Control Sample for Total Organic Carbon is within laboratory Control Limits

Batch: LBA-927013 Sulfide by SM4500-S-F-00
Nor enough sample for duplicate

Batch: LBA-927060 Total Metals by EPA 6010B
SW6010B

Batch 927060, Sodium recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 473427-001.
The Laboratory Control Sample for Sodium is within laboratory Control Limits

Certificate of Analysis Summary 473427

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice- Soy Lactate

Project Id: 073018
Contact: Claudia Ramos
Project Location: New Mexico

Date Received in Lab: Mon Nov-04-13 04:45 pm
Report Date: 13-NOV-13
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	473427-001					
	Field Id:	IW28-110413					
	Depth:						
	Matrix:	WATER					
	Sampled:	Nov-04-13 09:20					
Chromium, Hexavalent by SW 7196A	***Extracted:***						
	Analyzed:	Nov-04-13 19:20					
	Units/RL:	mg/L	RL				
Hexavalent Chromium		0.0302	0.0100				
Dissolved Metals per ICP by SW846 6010B SUB: E871002	***Extracted:***	Nov-07-13 10:00					
	Analyzed:	Nov-07-13 16:45					
	Units/RL:	mg/L	RL				
Chromium		0.0394	0.0100				
Iron		ND	0.200				
Sodium		296	0.500				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-06-13 10:00					
	Analyzed:	Nov-07-13 00:20					
	Units/RL:	mg/L	RL				
Bromide		ND	8.00				
Sulfate		500	40.0				
Nitrogen Ammonia by EPA 350.1 SUB: E871002	***Extracted:***	Nov-06-13 12:56					
	Analyzed:	Nov-06-13 13:57					
	Units/RL:	mg/L	RL				
Nitrogen, Ammonia (as N)		ND	0.100				
Sulfide by SM4500-S-F-00 SUB: E871002	***Extracted:***						
	Analyzed:	Nov-07-13 13:06					
	Units/RL:	mg/L	RL				
Sulfide, total		ND	5.00				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 473427

Conestoga Rovers & Associates, Midland, TX

Project Name: N. Eunice- Soy Lactate

Project Id: 073018
Contact: Claudia Ramos
Project Location: New Mexico

Date Received in Lab: Mon Nov-04-13 04:45 pm
Report Date: 13-NOV-13
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	473427-001					
	Field Id:	IW28-110413					
	Depth:						
	Matrix:	WATER					
	Sampled:	Nov-04-13 09:20					
TOC by SM 5310C SUB: E871002	***Extracted:***	Nov-06-13 11:00					
	Analyzed:	Nov-06-13 14:23					
	Units/RL:	mg/L	RL				
Total Organic Carbon		4.24	1.00				
Total Metals by EPA 6010B SUB: E871002	***Extracted:***	Nov-07-13 08:30					
	Analyzed:	Nov-07-13 16:56					
	Units/RL:	mg/L	RL				
Chromium		0.0394	0.0100				
Iron		ND	0.200				
Sodium		292	0.500				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Blank Spike Recovery

Project Name: N. Eunice- Soy Lactate

Work Order #: 473427 **Project ID:** 073018

Lab Batch #: 927210 **Sample:** 927210-1-BKS **Matrix:** Water

Date Analyzed: 11/04/2013 **Date Prepared:** 11/04/2013 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

Chromium, Hexavalent by SW 7196A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Hexavalent Chromium	<0.0100	0.0200	0.0223	112	80-120	

Lab Batch #: 926927 **Sample:** 646512-1-BKS **Matrix:** Water

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** DEP

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

Nitrogen Ammonia by EPA 350.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Nitrogen, Ammonia (as N)	<0.100	2.50	2.67	107	90-110	

Lab Batch #: 926964 **Sample:** 646551-1-BKS **Matrix:** Water

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** RKO

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

TOC by SM 5310C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total Organic Carbon	<1.00	10.0	11.0	110	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: N. Eunice- Soy Lactate

Work Order #: 473427, 473427 **Project ID:** 073018

Analyst: AMB **Date Prepared:** 11/06/2013 **Date Analyzed:** 11/06/2013

Lab Batch ID: 927007 **Sample:** 646569-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Bromide	<0.400	5.00	4.03	81	5.00	4.05	81	0	80-120	20	
Sulfate	<2.00	25.0	24.2	97	25.0	24.2	97	0	80-120	20	

Analyst: DHE **Date Prepared:** 11/07/2013 **Date Analyzed:** 11/07/2013

Lab Batch ID: 927013 **Sample:** 927013-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SM4500-S-F-00 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide, total	<5.00	50.0	43.0	86	50.0	43.8	88	2	80-120	20	

Analyst: MKO **Date Prepared:** 11/07/2013 **Date Analyzed:** 11/07/2013

Lab Batch ID: 927060 **Sample:** 646568-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	<0.0100	1.00	1.01	101	1.00	1.01	101	0	80-120	20	
Iron	<0.200	5.00	5.05	101	5.00	5.06	101	0	80-120	20	
Sodium	<0.500	25.0	24.7	99	25.0	24.7	99	0	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: N. Eunice- Soy Lactate

Work Order #: 473427

Lab Batch #: 927007 **Project ID:** 073018

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** AMB

QC- Sample ID: 473393-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	<8.00	100	88.0	88	80-120	
Sulfate	781	500	1350	114	80-120	

Lab Batch #: 927007

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** AMB

QC- Sample ID: 473402-005 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Bromide	<20.0	250	221	88	80-120	
Sulfate	881	1250	2100	98	80-120	

Lab Batch #: 926964

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** RKO

QC- Sample ID: 473352-040 S **Batch #:** 1 **Matrix:** Surface Water

Reporting Units: mg/L

TOC by SM 5310C Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Total Organic Carbon	19.3	10.0	26.1	68	90-110	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice- Soy Lactate

Work Order # : 473427 **Project ID:** 073018

Lab Batch ID: 927210 **QC- Sample ID:** 473427-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/04/2013 **Date Prepared:** 11/04/2013 **Analyst:** WRU

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chromium, Hexavalent by SW 7196A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexavalent Chromium	0.0302	0.200	0.238	104	0.200	0.232	101	3	80-120	20	

Lab Batch ID: 926927 **QC- Sample ID:** 473131-004 S **Batch #:** 1 **Matrix:** Aqueous

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Nitrogen Ammonia by EPA 350.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	<0.100	2.50	2.39	96	2.50	2.45	98	2	90-110	20	

Lab Batch ID: 926927 **QC- Sample ID:** 473158-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Nitrogen Ammonia by EPA 350.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Nitrogen, Ammonia (as N)	3.04	2.50	5.69	106	2.50	5.76	109	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: N. Eunice- Soy Lactate

Work Order # : 473427 **Project ID:** 073018

Lab Batch ID: 926964 **QC- Sample ID:** 473427-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/06/2013 **Date Prepared:** 11/06/2013 **Analyst:** RKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TOC by SM 5310C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Total Organic Carbon	4.24	10.0	15.7	115	10.0	15.7	115	0	90-110	20	X

Lab Batch ID: 927060 **QC- Sample ID:** 473290-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 11/07/2013 **Date Prepared:** 11/07/2013 **Analyst:** MKO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Total Metals by EPA 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chromium	0.138	1.00	1.10	96	1.00	1.08	94	2	80-120	20	
Iron	<0.200	5.00	4.63	93	5.00	4.52	90	2	80-120	20	
Sodium	194	25.0	216	88	25.0	211	68	2	75-125	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

XENCO Laboratories
B&A Laboratories, Inc.

☐ 4143 Greenbriar Drive, Stafford, Tx 77477 281-240-4200
☐ 5332 Blackberry Drive, San Antonio, Tx 78238 210-509-3334
☐ 9701 Harry Hines Blvd., Dallas, Tx 75220 214-902-0300
☑ 12600 West I-20 East, Odessa, Tx 79765 432-563-1800
☐ 842 Cantwell, Corpus Christi, Tx 78408 361-884-0371

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

Serial #: 239929 Page 1 of 1

Company-City: CRA
Phone:
Lab Only: 473427

Proj Name-Location: Post Injection Monitoring ☐ Previously done at XENCO
Project ID: 073018

Proj State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM
Proj. Manager (PM): Claudia Ramos

e-Mail Results to ☐ PM and
Fax No:

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O
Bill to:

Quote/Pricing: **P.O No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW TRRP

QAPP Per-Contract CLP AFCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Sampler Name Signature

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOCs: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOC's PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCL PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx 2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	Total Cr, Fe, Na	Hexavalent Chromium	SO4, Br, Orthophosphate - Phosphorus	Sulfide	TOC	Dissolved Iron	Ammonia - Nitrogen	Total Anaerobic Microbial Count	TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Remarks: Sample Clean-ups are pre-approved as needed
1	IW 28-110413	11-4-13	0920		W			5													X	X	X	X	X	X	X	X				
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) XBn Bill Rhoman	11-4-13 16:45	2) Claudia Ramos	11-4-13 16:45
3)		4)	
5)		6)	

Total Containers per COC: 5 Cooler Temp: -1+1 0°c

Upon signings this COC you accept XENCO terms and Conditions unless otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool,<4C) (**C**), None (**NA**), See Label (**L**), Other (**O**) _____

Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (V), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid(**S**), Water (**W**), Liquid (**L**)

Committed to Excellence in Service and Quality *www.xenco.com*

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previoiusly negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 11/04/2013 04:45:00 PM

Work Order #: 473427

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	0
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Candace James Date: 11/05/2013

Candace James

Checklist reviewed by: Kelsey Brooks Date: 11/05/2013

Kelsey Brooks

Quantitative Bacterial Report

Heterotrophic Plate Count

(Hygeia SOP-09)

Hygeia Laboratories Inc.
3626 Westchase Drive
Houston, TX 77042
(713) 343-4483 (713) 977-1963 Fax
www.hygeialabsinc.com

Client No.: 30311
Kelsey Brooks
Xenco Laboratories (Odessa)
12600 West I-20 East
Odessa, TX 79765

Project No.: 1018365
Project Name:
Collected: 11/04/2013 9:20 AM
Received: 11/06/2013
Analyzed: 11/11/2013 4:30 PM

Hygeia Sample ID	105495
Client Sample ID	**473427-001**
Location	IW28-110413
Sample Type	Water
Sample Amount	0.1 mL
Medium / Method	SM 9215
Dilution Factor(s)	1:1

Bacteria Isolated:	Raw Count	Dilution	**CFU / mL**	%
Anaerobic heterotrophic bacteria	284	1	2,840	100
Total CFU	2,840 / mL			
Comments				

Quantitative Bacterial Report

Heterotrophic Plate Count

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Analyst Vanessa Garcia
Vanessa Garcia

Lab Director
Crystal Enloe

Thank you for using Hygeia Laboratories Inc. We strive to provide superior quality and service.

Data in this report are reliable within two significant figures. Sample results are not corrected based on results of blanks. The minimum reporting limit (MRL) is calculated as the lowest dilution tested/volume. Estimates of uncertainty are available upon request. CFU = colony forming units. CFU/unit is calculated as raw count*dilution/sample amount. Total CFU/unit is the sum of individual CFUs/unit and is considered <MRL if no colonies are present.

Confidentiality Notice:

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Guidelines for Interpretation:

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork. Bacteria have been associated with a variety of health effects and sensitivity varies from person to person. Contact the CDC (www.cdc.gov) for information regarding potential health risks related to exposure in air or on surfaces and the USEPA (www.epa.gov) for existing established standards including regulated water quality standards.

Liability Notice:

Hygeia Laboratories Inc. and its personnel shall not be held liable for any misinformation provided to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report relates only to samples submitted and analyzed.

Revision 0 11/12/2013 ce