

Annual Monitor Report

DATE: 2009





Samson Livestock "30" Reserve Pit NMOCD Case # AP-62

2009 Annual Monitoring Report

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

R. T. HICKS CONSULTANTS, LTD.

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April 12, 2010

Glenn Von Gonten New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

RECEIVED OUD

 RE:
 Samson Livestock "30" Reserve Pit, T21S, R35E, Section 30, Unit P;

 NMOCD Case # AP-62

 Dear Mr. Von Gonten:

 Attached is the 2009 Annual Report for the above-referenced site. At the end of this

 Interpreter are several issues that Samson would like to bring forward to NMOCD in an

 letter are several issues that Samson would like to bring forward to NMOCD in an effort to move toward regulatory site closure.

Brief Summary

- The engineered ET infiltration barrier functions as designed; the chloride flux from the vadose zone to ground water is at or near zero.
- The extent and magnitude of ground water impairment is defined
- The average chloride concentration of the plume is not changing and there is no evidence of down gradient migration.
- Natural restoration has improved ground water quality of the upper portion of the aquifer, but several wells remain above ground water standards for TDS and chloride.
- While pumping ground water from MW-3d is beneficial with respect to the removal of contaminant mass, monitoring data suggest meaningful improvement of ground water quality will require long-term pumping.
- In our opinion, there is no reasonable relationship between the economic and social costs and benefits of a ground water restoration strategy that calls for pumping the water and:
 - Treating the water sufficiently to permit use for agriculture or E&P operations
 - Treating the water sufficiently to permit site re-injection
 - Deep well disposal

In 2008, Samson attempted a pump-and-use restoration strategy and found that neither drillers, earthwork contractors nor any water user would accept water pumped from the site in its present condition. We also evaluated the potential of treating the water to remove the contaminants completely at the point of extraction, but because fresh water is available in the immediate area and at locations that are more convenient for commercial or agricultural uses this option was considered not

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valid. Finally, we considered the addition of salt to create brine for drilling, but the economics of this solution are not favorable.

In light of this, Samson requests input from NMOCD regarding possible pathways to close the regulatory file. We believe that a 25-acre area (the former pit and current production pad) is not "a place of withdrawal for present or reasonably foreseeable future use". Although concurrence with this opinion on the part of NMOCD and the surface owner would be required to insure that the site complies with NMOCD Rules.

Some of the questions of concern for Samson include the following:

- 1. In light of the WQCC decision in the Phelps-Dodge hearing, what data or evaluation would NMOCD require to define the "point of compliance", which some call "a place of withdrawal for present or reasonably foreseeable future use"?
- 2. Should Samson provide arguments to NMOCD to support a finding that a certain area (e.g. 25 acres around the site) is not a "place of withdrawal for present or reasonably foreseeable future use"?
- 3. Because the site is subject to the Abatement Plan requirements, if NMOCD finds that the area is a place of reasonably foreseeable future use, under what circumstances would NMOCD support a petition for alternative abatement standards appropriate?

Samson will continue to monitor ground water in all wells on an annual basis until directed otherwise.

Sincerely, R.T. Hicks Consultants, Ltd.

Randall Hicks Principal

Copy: Hobbs NMOCD office; Samson Resources Merchant Cattle Company

April 12, 2010

Samson Livestock "30" Reserve Pit NMOCD Case # AP-62

2009 Annual Monitoring Report

prepared for: Samson

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

Location: T-21-S, R-35-E, Sec 30, Unit P Latitude: North 32° 26' 41.2" Longitude: West 103° 24' 6.9" NMOCD#: AP-62

1.0 EXECUTIVE SUMMARY

The Livestock "30" site, which is operated by Samson Resources Company (Samson), is located approximately 16 miles west of Eunice, New Mexico. The data presented in this 2009 Annual Monitoring Report permits us to conclude:

- The extent and magnitude of ground water impairment is stable; the average chloride concentration of the plume is not changing and there is no evidence of down gradient migration.
- While pumping ground water from MW-3d is beneficial with respect to the removal of contaminant mass, monitoring data suggest meaningful improvement of ground water quality will require long-term pumping.
- The engineered ET infiltration barrier functions as designed; the chloride flux from the vadose zone to ground water is at or near zero.
- A ground water restoration strategy that calls for using the water in E&P operations or other uses does not create a reasonable relationship between the economic and social costs and benefits.
- Samson requests input from NMOCD regarding possible pathways to close the regulatory file including a decision on the part of NMOCD and the surface owner that a 25-acre area that includes the former pit and production pad is not "a place of withdrawal for present or reasonably foreseeable future use".
- Samson will continue to monitor ground water in all wells on an annual basis.

This report is consistent with the commitments made in the September 2006 Stage 1/Stage 2 Abatement Plan, Progress reports submitted in December 2006, May 2007, August 2007, the November 2007 Abatement Report, and the 2008 Annual Ground Water Monitoring Report.

2.0 WORK ELEMENTS PERFORMED

Appendix A presents the chronology of events at the site followed by a brief description of all characterization and corrective action activities performed at the site. A table of the historic gauging and laboratory results is also provided in Appendix A. The ground water monitoring laboratory reports and chain-of-custody documents are included in Appendix B, and Appendix C provides graphs that depict the historic ground water impairment for each monitoring well.

Since November 2008, site activities included only the quarterly ground water sampling of the shallow and deep monitoring wells, and monitoring of the soil moisture below the ET Barrier.

3.0 CONCLUSIONS

3.1 ET Barrier Performing as Predicted

Soil moisture monitoring demonstrates that the moisture content within the ET Barrier is very low and has continued to decline over the past year. Table 1 indicates that the lower portion of the ET barrier has dried more slowly than the upper portion. This is expected because the upper portion of the barrier loses water to evaporation to a larger extent than the lower portion of the barrier. This result confirms the performance expectations of the ET Barrier presented in the November 2007 Report.

Vadose Zone	ET	Cover Monitoring F	Port
Measurement Date	No. 1 West 2.8-foot	No. 2 Center 5-foot	No. 3 East 9-foot
4/17/07	80	81	80
5/1/07	7	15	17
5/21/07	3	10	9
7/18/07	1	1	7
8/9/07	1	1	7
12/6/07	0	0	4
4/3/08	0	0	3
8/19/08	0	0	4
11/20/08	0	0	3
2/16/09	0	0	2
5/26/09	0	1	2
8/20/09	0	1	3
11/3/09	0	1	2

Table 1. Results of Soil Moisture Monitoring at Samson Livestock 30

As discussed below, ground water monitoring results also demonstrate that the chloride concentration of the upper portion of the aquifer beneath the ET cover is stable or declining over time. This observation supports a conclusion that the flux of chloride from the vadose zone to ground water beneath the cover is very low or nil.

3.2 Ground Water Flow Direction is Constant

Hicks Consultants gauged and sampled each of the monitoring wells on a quarterly basis during 2009. Ground water gradient maps (Plates 1A - 1D) indicate essentially no change in the gradient. Observations continue to support a flow rate of about 10 ft per 100 yrs as calculated and provided in the 2007 Abatement Report.

3.3 Short-Term Pumping Is a Marginally Effective Abatement Strategy

A total of 494,000 gallons of impaired ground water (14.4 tons chloride / 24.2 tons TDS) have been removed from the site to date. Water removed from the aquifer could not be used and was sent to a disposal well. No ground water removal operations were conducted in 2009.

Plate 2 depicts the laboratory results for both the shallow and deep zones for each 2009 sampling event. Figure 1 depicts the average chloride concentrations for both the shallow and deep ground water zones over time. In figure 1, the width of the text box describing the pumping is equivalent to the duration of the pumping event.



The data show the average site chloride concentrations in both the shallow and deep ground water zones decreased during the pumping that was performed from MW-1d (12/06 to 12/07). Because pumping occurred more than 2 years after the April 2004 flood event that damaged the liner (see Appendix A), we conclude that the pumping, not natural restoration, is primarily responsible for the observed decrease in chloride concentrations.

During pumping from MW-3d (5/12/08 to 7/30/08) the average chloride concentration in the shallow ground water zone decreased, albeit temporarily. The

rate of increase for the average chloride concentration in the deep ground water zone declined slightly during this same time. We conclude that the pumping of MW-3d temporarily caused fresh water from outside of the zone of impact to flow into the upper portion of the aquifer near the pumping well. In the lower portion of the aquifer, pumping removed chloride mass and caused a small decline in chloride concentrations in MW-1d, MW-3d and MW-5d. However, pumping MW-3d probably perturbed brine zones perched on the underlying red bed aquiclude, causing chloride concentrations to increase in MW-2d. After pumping ceased, dispersion and diffusion caused equilibration of chloride concentration between the upper and lower aquifer, resulting in a slight increase in chloride concentrations in the shallow wells. Despite the changes observed during pumping MW-3d, the average chloride concentration for the aquifer has remained stable at approximately 2,000 mg/L since the pumping of MW-1d was terminated.

Figure 2 depicts the average TDS concentrations for both the shallow and deep ground water zones over time.



The data demonstrate that average site TDS concentrations in both the shallow and deep ground water zones decreased during the pumping that was performed from MW-1d, but were not significantly affected by the pumping from MW-3d. The average TDS concentration for the aquifer has remained stable at less than 4,000 mg/L since the pumping of MW-1d was terminated.

These results suggest that while the chloride (and TDS) mass/barrel removed from MW-3d (1.67 kg/bbl) was much greater than the chloride mass/barrel removed from MW-1d (0.96 kg/bbl), the removal of saline water from MW-3d has produced no permanent benefit to the overall quality of the ground water. We conclude that only a long-term, continual pumping effort at MW-3d could be an effective abatement strategy.

3.4 The Chloride and TDS Plume is Stable

In the upper portion of the aquifer, chloride concentrations are essentially unchanged over the past two years in wells MW-1, 2, 4 and 5. Chloride concentrations in the MW-3s have fluctuated slightly between May of 2008 (2021 mg/L) to November 2009 (2390 mg/L).

The lower portion of the aquifer the following wells have exhibited stable chloride concentrations since January 2008: MW-1d, MW-3d and MW-4d. Chloride concentrations in MW-2d have been stable since November 2008. At MW-5d, chloride concentrations have risen consistently over time from 117 mg/L to 246 mg/L.

Although the increasing chloride concentration in MW-5d may indicate chemical diffusion or lateral dispersion of chloride in slow moving ground water, monitoring results from MW-4s and MW-4d indicate that no detectable, down gradient plume migration is occurring.

3.5 A Limited Pump-and-Use Abatement Strategy Is Problematic

After speaking to several individuals that routinely use water for E&P operations (e.g. mud engineers, well cementing contractors), we conclude that E&P contractors will not use water from the Livestock site. Drilling mud and casing cement demand that one of the primary ingredients, water, is of a known and constant quality. A failure of drilling mud or cement caused by constituents in the ground water from MW-3d is unacceptable. Therefore, despite attempts to put the water from the MW-3d to use, we found no takers. Moreover, several deep ground water wells that exist west of the site are capable of providing fresh water for E&P operations at a much greater rate due to an increased aquifer thickness.

Additionally, we explored the feasibility of pumping water from MW-3d to tank then adding salt to create saturated brine for drilling. This would involve creating a brine station with the capacity and access suitable for area drilling operations. Costs associated with building the station, transporting salt, and supplying the additional water to satisfy the potential demand are prohibitive relative to benefit.

Treating the water to create a source of stock water provides no benefit. In addition to the more prolific water wells listed above, a windmill serves stock and wildlife less than $\frac{1}{2}$ mile west (up gradient) from the site. Treating water produced from MW-3d in the absence of a defined need does not create a reasonable relationship between the social and economic costs and benefits.

3.6 Options for Closing the Regulatory File Are Limited

We have identified two options for closure of the regulatory file. Of these, option No. 1 is the most appropriate for the site, based on future land use and available ground water resources.

- 1. File closure based upon a finding by NMOCD and the surface owner that a 25-acre area at and down gradient of the Livestock site is not a place of withdrawal for present or reasonably foreseeable future use.
- 2. A successful petition for alternative abatement standards under Part 30 of NMOCD Rules.

4.0 **RECOMMENDATIONS**

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- Obtain a response from NMOCD regarding the proposed closure options.
- Collect and analyze ground water samples on annual basis for chloride, TDS and field specific conductance.

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Plates

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Appendix A Chronology of Events, Table of Historic Data

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1.1

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Appendix A Chronology of Events

- 09-30-02: Following the installation of the reserve pit, drilling of the Livestock "30" State No. 1 gas well commenced. The well lies within the Grama Ridge Morrow East Field.
- 04/05/04: After the completion of the gas well, while the reserve pit was drying out in preparation for closure, a significant precipitation event flooded the reserve pit and damaged the liner. Rainwater probably flushed the chloride from the cuttings, flowed through the liner tears and caused impact to the underlying soil and ground water.
- 05-11-05: Samson contracted for the removal of the cuttings and some underlying material to a centralized facility. Soil samples collected in the excavation indicated that the material underlying the pit contained chloride concentrations and diesel-range organics but there is no evidence that regulated hydrocarbons were present in soil.
- 09-16-05: Ocotillo Environmental installed nine hollow-stem auger holes within and surrounding the reserve pit. The data showed elevated chloride concentrations (>1,000 mg/kg) in several locations from the base of the excavation to the water table (approximately 40 feet below ground surface).
- 09-19-05: A sample from a temporary monitoring well (TMW-1) in the center of the pit showed elevated chloride concentrations.
- Undated: A report by Ocotillo included recommendations to over-excavate the reserve pit to a depth of 30-feet, install a 20-mil plastic liner, backfill the pit with clean soil, and install monitoring wells surrounding the area to delineate the chloride impact to ground water.
- 03-15-06: Samson contracted with RT Hicks Consultants, Ltd to re-evaluate the reserve pit site and determine the feasibility of an alternate remedy for closure.
- 03-30-06: TMW-1 was purged of 30 gallons of water using a disposable bailer prior to sampling to determine the concentrations of chloride and total dissolved solids. The results indicated that the chloride concentration at TMW-1 had decreased significantly from the sample recovered on 9-19-05 but remained above WQCC Standards. A water sample recovered from the windmill-equipped water well located 1,800 feet to the northwest of the site established background water quality for the area.

- 05-10-06: The first of three additional ground water samples was recovered from TMW-1 over a 2-month period. In each case the well was purged of approximately 400 gallons prior to sampling. Chloride concentrations from each sample were generally consistent with the sample recovered on March 30, 2006.
- 06-12-06: Hicks Consultants submitted a Corrective Action Plan (CAP) for the proposed pit closure at the Livestock "30" site to Mr. Glenn Von Gonten, with the NMOCD in Santa Fe. The CAP presented a design for an evapotranspiration (ET) cover and recommended installation of the barrier over the reserve pit area to control the migration of additional chloride into the ground water. The CAP proposed a "point-of-use" ground water remedy.
- 07-12-06: A solar-powered pump installed in the 2-inch monitoring well (TMW-1) withdrew water at a rate of 1-2 gpm in order to determine if more aggressive water recovery would significantly decrease the chloride concentration in the ground water below the pit. Water discharged to the produced water tank.
- 08-30-06: In a meeting with Mr. Glenn Von Gotten and David Sanchez at the NMOCD offices in Santa Fe, Hicks Consultants and Samson presented the June 12, 2006 CAP and results of the ground water purging/sampling feasibility test. The result of the meeting was a commitment to submit a Stage 1/Stage 2 Abatement Plan and to proceed with construction of the ET Infiltration Barrier in advance of NMOCD approval of the Abatement Plan.
- 09-22-06: Hicks Consultants submitted a Stage 1/Stage 2 Abatement Plan to the NMOCD. The plan made minor changes to the CAP and to the planned closure of the reserve pit. The plan included a proposal to abate the chloride-impacted ground water through a point-of-use water withdrawal program.
- 09-28-06: Hicks Consultants supervised closure of the former reserve pit according to the plan provided to the NMOCD on September 22, 2006.
- 10-23-06: Closure of the former reserve pit was complete and the final surface topography was shaped and mapped.
- 10-30-06: Hicks Consultants supervised the installation of a 4-inch monitoring/recovery well (MW-1) at the location of the former 2-inch temporary monitoring well (TMW-1). MW-1 included screened intervals at the vadose zone/ground water interface and at the base of the aquifer, above the lower confining Triassic red shale formation. In addition, three vadose zone moisture monitoring ports were installed into the backfilled pit material.

- 11-30-06: Following the development of MW-1, a solar-powered pump (Abyss No. 1), was installed at the base of the aquifer. A rubber packer was placed five feet above the pump to restrict flow from the upper portion of the aquifer. Each month, a ground water sampling program sampled chloride-impacted ground water from the lower screen (pump) and upper screen (bailer).
- 12-18-06: A progress report submitted to the NMOCD described the closure of the former reserve pit, provided information regarding the final ET cover and described the installation of MW-1 and vadose zone moisture monitoring ports. The proposed Abatement Plan public notice and a request to begin using the withdrawn water for use in drilling was part of this submittal.
- 04-17-07: Gypsum blocks were installed in the soil moisture ports and checked to verify that they were working properly. Ground water samples were recovered from the deep screen (pump) and shallow screen (bailer) of MW-1.
- 05-01-07: Abyss No. 1 was replaced with Abyss No. 2 in MW-1. Abyss No. 1 ran for approximately 3,600 hours.
- 05-21-07: The MW-1 pump was direct wired to the solar power control box to by-pass faulty plug. Ground water samples were recovered from the deep screen (pump) and shallow screen (bailer) of MW-1.
- 05-23-07: A progress report submitted to the NMOCD described the on-going ground water recovery and monitoring efforts. A recommendation for additional monitoring well installation was part of this submittal.
- 05-30-07: Hicks Consultants supervised the installation of monitoring wells MW-2(s), MW-2(d), MW-3(s), and MW-3(d) to delineate the dissolved chloride plume in the ground water. Field activities continued through June 1, 2007. MW-2(s) was fully developed and MW-2(d), MW-3(s), and MW-3(d) were partially developed. All of the new monitoring wells were surveyed to determine the casing elevations relative to MW-1.
- 06-13-07: All of the monitoring wells, nearest water well, and the North windmill well were gauged. The North windmill was shut in and the pump in MW-1 was turned off on June 12, 2007 to allow the static water levels to recover. MW-2(d) and MW-3(s) were fully developed and MW-3(d) was partially developed (poor producer). All of the monitoring wells, including MW-1 (deep and shallow) were sampled.

- 07-18-07: Abyss No. 2 pump was replaced after 1,800 hours of operation with Abyss No. 1R (rebuilt) pump. The monitoring well casing elevations were re-surveyed to verify the June 1, 2007 data.
- 08-02-07: A progress report submitted to the NMOCD described the on-going ground water recovery /monitoring efforts, and the results of the monitoring well installation and sampling conducted in May and June 2007. A recommendation for two additional monitoring well clusters was part of this submittal.
- 08-07-07: Monitoring wells MW-4(s), MW-4(d), MW-5(s), and MW-5(d) were installed to the southwest and southeast of the former reserve pit in order to complete the delineation of the dissolved chloride in the ground water. Each of the new wells were developed and surveyed to determine the casing elevations relative to the existing wells. Sediment in MW-3(d) was cleaned out using compressed air and the well was fully developed. All of the monitoring wells were sampled to determine the concentrations of chloride and total dissolved solids.
- 11-20-07:The Final Abatement Plan was submitted to Mr. Glenn Von Goten of the
NMOCD by RT Hicks Consultants on behalf of Samson.
- 12-06-07: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids. The Abyss No. 1R pump was removed after approximately 3,300 hours of operation. Abyss No. 2R (rebuilt) pump was installed but failed immediately.
- 04-03-08: Each of the monitoring wells were gauged. MW-4(s) and MW-4(d) (down gradient) was sampled to determine the concentrations of chloride and total dissolved solids.
- 05-06-08: A 110-volt electric pump was installed in MW-3(d), however the transformer for the on-site electric supply was too small to operate the 11.9-amp pump. A electrician installed new transformer and the pump was started at 1.5 gpm on 5/7/08.
- 05-12-08: The pump in MW-3(d) was operating at 1.2 gpm but the water level was at the pump depth. Approximately 5,500 gallons of water had been recovered in two frac tanks since the pumping operation began. A ground water sample was recovered from the pumping well and the flow rate was choked down to 1.15 gpm. Each of the other monitoring wells were gauged and MW-1, MW-2(s), MW-2(d), MW-3(s), MW-5(s), and MW-5(d) was sampled to determine the concentrations of chloride and total dissolved solids.

- 06-02-08: Lobo Trucking transported 650 bbls of water from MW-3(d) to the Samson Osudo 33 State Com. No. 1 well for use in the drilling reserve pit.
- 06-04-08: Key Energy transported 110 bbls of water from MW-3(d) to the Atha SWD for disposal.
- 06-19-08: Key Energy transported 120 bbls of water from MW-3(d) to the Atha SWD for disposal.
- 07-03-08: Key Energy transported 240 bbls of water from MW-3(d) to the Atha SWD for disposal.
- 07-15-/08: Key Energy transported 220 bbls of water from MW-3(d) to the Atha SWD for disposal.
- 07-18-08: The pump in MW-3(d) was operating at 1.25 gpm. A ground water sample was recovered from the pumping well but the flow rate was not adjusted.
- 07-23-08: Key Energy transported 220 bbls of water from MW-3(d) to the Atha SWD for disposal.
- 07-30-08: Key Energy transported 330 bbls of water from MW-3(d) to the Atha SWD for disposal.
- 07-31-08: The pump in MW-3(d) was turned off, but left in the well. Key Energy transported 660 bbls of water to the Atha SWD for disposal. Both frac tanks were removed from the site.
- 08-19-08: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids.
- 11-20-08: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids.
- 01/30/09: RT Hicks Consultants submitted the 2008 Annual Monitoring Report to the NMOCD on behalf of Samson.
- 02-16-09: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids.
- 05-26-09: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids.

- 08-20-09: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids.
- 11/03/09: Each of the monitoring wells were gauged and sampled to determine the concentrations of chloride and total dissolved solids.

Summary of Activities Completed to Date

Initial Assessment

Following the discovery of elevated chloride concentrations in the soil below the former reserve pit by Samson, Ocotillio Environmental installed nine soil borings to define the extent of the impact to the soil. One of the soil borings was converted into a temporary monitoring well (TMW-1) in order to verify the impact to ground water. Details concerning these activities were provided with the September 22, 2006 Stage 1/Stage 2 Abatement Plan.

Closure of the Former Reserve Pit

From September 28 to October 23, 2006 the reserve pit was backfilled. An evapotranspiration (ET) cover and surface run-off infiltration area were constructed during the backfill operations. Following completion of the ET cover MW-1 was installed as a replacement to TMW-1 and three soil moisture monitoring ports were installed to verify the effectiveness of the ET cover. Detailed information concerning these activities were provided in the December 18, 2006 Progress Report. Re-seeding of the ET cover and the installation of gypsum blocks into the moisture ports occurred in April 2006. Based on monitoring of the gypsum blocks performed through November 3, 2009 there is no indication that rain water was infiltrating the ET barrier.

Dissolved Chloride Plume Delineation

Two clusters of monitoring wells, which included a shallow well screened at the surface of the aquifer and a deep well screened at the base of the aquifer, were installed to provide delineation of the chloride-impacted ground water to the northeast (MW-2) and the southeast (MW-3) of the former reserve pit. Information concerning the remediation/monitoring activities and the installation of MW-2 and MW-3 were provided in the August 2, 2007 Progress Report.

From August 7, to August 9, 2007 two additional clusters of monitoring wells were installed at the site. MW-4(s) and MW-4(d) were placed approximately 300 feet southeast from the former reserve pit to verify the down gradient extent of the chloride-impacted ground water. MW-5(s) and MW-5(d) were placed approximately 120 feet south of the former reserve pit in order to delineate the plume to the southwest of MW-3.

Following completion, each for the new wells were gauged, developed, and surveyed relative to the casing elevations of the existing monitoring wells. A site ground water gradient map was constructed using data from only MW-2, MW-4, and MW-5. Elevated dissolved solids in the ground water at the MW-1 and MW-3 locations increase the specific gravity of the water such

that measured fluid levels do not accurately reflect the potentiometric energy of the aquifer. Information and lithologic logs concerning these activities were provided in the November 20, 2007 Final Abatement Report.

Ground Water Pumping (Source Removal)

A solar-powered pump was used to recover brine water released for the reserve pit, along with ground water from MW-1 at an average rate of 0.8 gallons per minute (gpm) from November 30, 2006 to December 6, 2007. Approximately 386,769 gallons of brine water were recovered from the deep screened interval of the well over 8,700 hours of operation. All of the removed water was discharged into the on-site 500-barrel fiberglass tank, mixed with produced water from the gas well, and periodically transferred to a disposal facility. Information concerning this activity was provided in the May 23, 2007 Progress Report and January 22, 2009 Annual Monitoring Report.

An additional 107,100 gallons of water was recovered from MW-3(d) using a 110-volt submersible pump. The recovered water was temporarily stored in two on-site frac tanks before being transferred to an oil well drilling operation for use in the reserve pit or transported to a disposal facility. Information concerning this activity was provided in the January 22, 2009 Annual Monitoring Report.

Activities Completed Since Previous Update

Ground Water Monitoring

From November 2008 to November 2009, four ground water monitoring events were conducted to verify the plume stability.

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Location Crist Crist Crist Crist Cond. Depth (mg/L) (mg/L) TMW-1 Casing Elev.= 3607.11 -	Sample Date	DTW	GW Elevation	Recy	Field	Sample	Chloride	TDS
TWW-1 Casing Elev.= 3607.11 Fright	L ocation	(csa)	(ft)	Vol (gal)	Cond	Depth	(mg/L)	(mg/L)
THW-1 Casing Elev.= 3607.11 Shallow 3.999 9/30005 31.65 3375.46 30 7.49 Shallow 2,240 4,520 6/10/06 31.74 3375.37 450 7.51 Shallow 2,150 4,060 6/27/06 31.83 3575.28 1,230 7.70 Shallow 2,150 4,060 6/22/06 31.99 3375.12 6,830 5.52 Shallow 1,330 3,770 MW-1 Casing Elev.= 3616.06 11.00 Deep 1,880 3,570 11/6/06 41.22 3574.78 765 11.00 Deep 5,520 9,240 11/30/06 41.32 3573.03 13,209 12.01 Deep 5,210 9,600 11/9/07 43.02 3572.69 121,81 11.99 Deep 5,840 8,670 2/20/07 43.12 3572.69 121,881 11.99 Deep 7,820 9,030 3/20/07 43		(5)	(19	(gu)	001141		((97
9/19/05 No Data - - - Shallow 3,999 - 3/30/06 31.65 3575.46 30 7.49 Shallow 2,500 3,900 67/706 31.86 3375.25 830 5.93 Shallow 2,500 4,600 6/27/06 31.83 3375.28 1,230 7.70 Shallow 2,520 4,160 8/22/06 31.99 3575.12 6,830 5.52 Shallow 1,330 3,720 Diff.006 41.28 3574.74 837 60.3 Shallow 1,030 2,280 11/30/06 41.28 3574.74 837 60.3 Shallow 1,030 2,280 11/30/06 41.28 3573.03 13.209 12.01 Deep 5,370 3,940 1/9/07 43.02 3573.04 42,609 12.25 Deep 5,840 8,670 2/20/07 43.37 3572.69 121,881 11.99 Deep 5,800 3,120 <td>TMW-1 C</td> <td>asing Elev.=</td> <td>3607.11</td> <td></td> <td></td> <td><u></u></td> <td>····</td> <td></td>	TMW-1 C	asing Elev.=	3607.11			<u></u>	····	
33006 31.65 3575.46 30 7.49 Shallow 2.240 4.520 \$/10/06 31.74 3575.37 450 7.51 Shallow 2,150 4,080 677.06 31.86 3575.25 830 5.93 Shallow 2,150 4,080 6/27.06 31.83 3575.28 1,230 7.70 Shallow 2,150 4,080 8/22/06 31.99 3575.12 6,830 5.52 Shallow 1,330 3,720 MW-1 Casing Elev.= 3676.78 765 11.00 Deep 5,520 9,240 11/30/06 41.32 3574.74 837 6.03 Shallow 1,670 2,280 1/9/07 43.02 3573.04 42,609 12.25 Deep 5,40 8,670 2/20/07 43.12 3572.62 12,811 1.99 Deep 7,620 9,030 3/20/07 43.37 3572.62 154,137 15.64 Shallow 2,110 3,930	9/19/05	No Data				Shallow	3,999	
5/10/06 31.74 3575.37 450 7.51 Shallow 2.580 3.900 6/7/06 31.83 3575.25 830 5.93 Shallow 2.520 4.160 6/27/06 31.83 3575.28 1.230 7.70 Shallow 2.520 4.160 8/22/06 31.99 3575.12 6.830 5.52 Shallow 1.930 3.720 WW-1 Casing Elev.= 3616.06 Maintoin 1.100 Deep 5.520 9.240 11/30/06 41.28 3574.74 837 765 11.00 Deep 5.520 9.240 11/30/06 41.32 3573.04 42.609 4.80 Shallow 1.030 2.280 1/9/07 43.02 3572.69 121.881 4.94 Shallow 2.130 3.120 3/20/07 43.37 3572.62 154.137 13.07 Deep 6.360 11.400 3/21/07 41.60 3574.41 218.29 1.660 3.160<	3/30/06	31.65	3575,46	30	7.49	Shallow	2,240	4.520
6/7/06 31.86 3575.25 830 5.93 Shallow 2.150 4.080 6/27/06 31.83 3575.28 1.230 7.70 Shallow 2.520 4.160 8/22/06 31.99 3575.12 6.830 5.52 Shallow 1.930 3.720 MW-1 Casing Elev.= 3616.06	5/10/06	31.74	3575.37	450	7.51	Shallow	2,580	3,900
6/27/06 31.83 3575.28 1.230 7.70 Shallow 2.520 4.160 8/22/06 31.99 3575.12 6.830 5.52 Shallow 1.930 3.720 MW-1 Casing Elev.= 3616.06 Deep 1.80 3.570 11//5/06 41.32 3574.74 837 765 11.00 Deep 5.520 9.240 11/30/06 41.32 3573.03 13.209 11.19 Deep 4.390 5.870 12/12/06 43.03 3573.04 42.609 4.80 Shallow 1.870 2.940 1/9/07 43.02 3572.94 87,609 5.46 Shallow 2.130 3.120 3/20/07 43.37 3572.69 121.881 1.99 Deep 7.820 9.030 4/17/07 43.44 3572.62 154.137 5.54 Shallow 1.600 3.510 5/21/07 41.60 3574.46 194.529 11.88 Deep 6.350	6/7/06	31.86	3575.25	830	5.93	Shallow	2,150	4,080
8/22/06 31.99 3575.12 6,830 5.52 Shallow 1,930 3,720 MW-1 Casing Elev.= 3616.06 3574.78 765 11.00 Deep 5,520 9,240 11//6/06 41.32 3574.74 837 6.03 Shallow 10.30 2,280 11/30/06 41.32 3573.03 13,209 12.01 Deep 4,390 5,870 1/9/07 43.02 3573.04 42,609 12.25 Deep 5,840 8,670 2/20/07 43.12 3572.69 121,881 11.99 Deep 5,820 3,510 3/20/07 43.37 3572.62 154,137 5,54 Shallow 2,130 3,120 5/21/07 41.60 3574.46 194,529 3,91 Shallow 2,050 3,510 4/17/07 41.64 3574.42 253,929 - - - - - - - - - - - - - - <td>6/27/06</td> <td>31.83</td> <td>3575.28</td> <td>1,230</td> <td>7.70</td> <td>Shallow</td> <td>2,520</td> <td>4,160</td>	6/27/06	31.83	3575.28	1,230	7.70	Shallow	2,520	4,160
B2203 31.93 317.12 3.03 Deep 1.880 3.570 MW-1 Casing Elev.= 3616.06	0/22/06	21.00	2575 10	6 920	5.52	Shallow	1,930	3,720
MW-1 Casing Elev.= 3616.06 11/6/06 41.28 3574.78 765 11.00 Deep 5,520 9,240 11/30/06 41.32 3574.74 837 11.19 Deep 4,390 5,870 12/12/06 43.03 3573.03 13,209 12.01 Deep 5,210 9,600 1/9/07 43.02 3573.04 42,609 4.80 Shallow 1,870 2,940 2/20/07 43.12 3572.94 87,609 5.22 Deep 5,840 8,670 3/20/07 43.37 3572.69 121,881 11.99 Deep 7,820 9,030 4/17/07 43.44 3572.62 154,137 13.07 Deep 6,350 11,400 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,400 2,490 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,650 3,150 8/9/07 41.75 3574.31 277	0/22/00	31.99	3373.12	0,030		Deep	1,880	3,570
11/6/06 41.28 3574.78 765 11.00 Deep 5.20 9.240 11/30/06 41.32 3574.74 837 6.03 Shallow 1,030 2.280 12/12/06 43.03 3573.03 13.209 12.01 Deep 5.210 9.600 1/9/07 43.02 3573.04 42.609 12.25 Deep 5.840 8.670 2/20/07 43.12 3572.94 87,609 5.46 Shallow 2.130 3.120 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2.110 3.930 4/17/07 43.44 3572.62 154,137 13.07 Deep 6.350 11.400 5/21/07 41.60 3574.46 194.529 3.181 Shallow 1.600 3.180 6/13/07 41.65 3574.41 218.289 5.66 Shallow 1.600 3.180 12/607 41.65 3574.41 218.289 5.60 Shallow 1.650 3.150 12/607 41.75 3574.31 277.689 5.60	MW-1 C	asing Elev.=	3616.06					
11/30/06 41.32 3574.74 837 6.03 Shallow 1,030 2,280 12/12/06 43.03 3573.03 13,209 12.01 Deep 4,390 5,870 1/9/07 43.02 3573.04 42,609 4.80 Shallow 1,870 2,940 2/20/07 43.12 3572.94 87,609 5.46 Shallow 2,130 3,120 3/20/07 43.37 3572.69 121,881 11.99 Deep 7,820 9,030 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,150 3,510 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,600 2,490 6/13/07 41.65 3574.41 218,289 5.66 Shallow 1,620 3,180 6/13/07 41.63 3574.42 253,929 - - - - - - 8/9/07 41.75 3574.31 277,689 14.62 De	11/6/06	41.28	3574.78	765	11.00	Deep	5,520	9,240
12/12/06 43.03 3573.03 13,209 12.01 Deep 4,390 5,870 1/9/07 43.02 3573.04 42,609 12.25 Deep 5,840 8,670 2/20/07 43.12 3572.94 87,609 12.25 Deep 6,690 7,680 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,110 3,930 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,050 3,510 5/21/07 41.65 3574.46 194,529 3.91 Shallow 1,400 2,449 6/13/07 41.65 3574.41 218,289 5.60 Shallow 1,620 3,180 8/9/07 41.75 3574.31 277,689 5.60 Shallow 4.62 3.90 13,300 12/6/07 41.72 3574.34 366,769 2.41 Shallow 4.60 1,310 12/6/07 41.72 3574.34 366,769 - - <td>11/30/06</td> <td>41.32</td> <td>3574 74</td> <td>837</td> <td>6.03</td> <td>Shallow</td> <td>1,030</td> <td>2,280</td>	11/30/06	41.32	3574 74	837	6.03	Shallow	1,030	2,280
12/12/06 43.03 3573.03 13,209 12,01 Deep 5,210 9,600 1/9/07 43.02 3573.04 42,609 4.80 Shallow 1,870 2,940 2/20/07 43.12 3572.94 87,609 5.46 Shallow 2,130 3,120 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,110 3,930 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,650 3,510 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,400 2,490 5/21/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 6/13/07 41.65 3574.42 253,929 -					11.19	Deep	4,390	5,870
1/9/07 43.02 3573.04 42,609 4.80 Shallow 1,870 2,940 2/20/07 43.12 3572.94 87,609 5.46 Shallow 2,130 3,120 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,130 3,120 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,050 3,510 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,050 3,510 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,600 2,449 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 7/18/07 41.65 3574.42 253,929 -	12/12/06	43.03	3573.03	13,209	12.01	Deep	5,210	9,600
12.25 Deep 5,840 8,670 2/20/07 43.12 3572.94 87,609 5,46 Shallow 2,130 3,120 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,130 3,120 4/17/07 43.44 3572.62 154,137 5,54 Shallow 2,050 3,510 5/21/07 41.60 3574.46 194,529 3,91 Shallow 1,400 2,490 6/13/07 41.65 3574.41 218,289 5,66 Shallow 1,620 3,180 6/13/07 41.65 3574.31 277,689 16.62 Deep 6,770 13,000 7/18/07 41.64 3574.32 253,929 - </td <td>1/9/07</td> <td>43.02</td> <td>3573.04</td> <td>42,609</td> <td>4.80</td> <td>Shallow</td> <td>1,870</td> <td>2,940</td>	1/9/07	43.02	3573.04	42,609	4.80	Shallow	1,870	2,940
2/20/07 43.12 3572.94 87,609 12.92 Deep 6,690 7,680 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,110 3,930 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,050 3,510 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,600 2,490 5/21/07 41.65 3574.46 194,529 3.91 Shallow 1,620 3,180 6/13/07 41.65 3574.42 218,289 5.68 Shallow 1,620 3,180 7/18/07 41.64 3574.42 253,929					12.25	Deep	5,840	8,670
12.92 Deep 6,690 7,680 3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,110 3,930 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,050 3,510 5/21/07 41.60 3574.46 194,529 3,91 Shallow 1,400 2,490 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 6/13/07 41.65 3574.42 253,929 -	2/20/07	43.12	3572.94	87,609	5.46	Shallow	2,130	3,120
3/20/07 43.37 3572.69 121,881 4.94 Shallow 2,110 3,930 4/17/07 43.44 3572.62 154,137 5.54 Shallow 2,050 3,510 5/21/07 41.60 3574.46 194,529 11.88 Deep 6,350 11,400 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 6/13/07 41.65 3574.42 253,929 -					12.92	Deep	6,690	7,680
4/17/07 43.44 3572.62 154,137 554 Shallow 2,050 3,510 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,400 2,490 6/13/07 41.65 3574.46 194,529 3.91 Shallow 1,600 2,490 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 7/18/07 41.64 3574.42 253,929 - </td <td>3/20/07</td> <td>43.37</td> <td>3572.69</td> <td>121,881</td> <td>4,94</td> <td>Shallow</td> <td>2,110</td> <td>3,930</td>	3/20/07	43.37	3572.69	121,881	4,94	Shallow	2,110	3,930
4/17/07 43.44 3572.62 154,137 13.07 Deep 6,350 11,400 5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,400 2,490 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 7/18/07 41.64 3574.42 253,929					11.99 5 5 4	Deep	7,820	9,030
5/21/07 41.60 3574.46 194,529 3.91 Shallow 1,400 2,490 6/13/07 41.65 3574.41 218,289 5.66 Shallow 1,620 3,180 7/18/07 41.64 3574.42 253,929 - - - - - 8/9/07 41.75 3574.31 277,689 5.60 Shallow 1,650 3,150 12/6/07 41.72 3574.34 386,769 2.41 Shallow 440 1,310 12/6/07 41.72 3574.34 386,769 -<	4/17/07	43.44	3572.62	154,137	0.04 12.07	Doop	2,050	3,510
5/21/07 41.60 3574.46 194,529 3.51 Shallow 1,400 2,430 6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 7/18/07 41.64 3574.42 253,929					3.07	Shallow	0,350	2 400
6/13/07 41.65 3574.41 218,289 5.68 Shallow 1,620 3,180 7/18/07 41.64 3574.42 253,929	5/21/07	41.60	3574.46	194,529	11.88	Deen	6 360	2,490
6/13/07 41.65 3574.41 218,289 15.89 Deep 6,770 13,000 7/18/07 41.64 3574.42 253,929 -					5.68	Shallow	1 620	3 180
7/18/07 41.64 3574.42 253,929 - <td>6/13/07</td> <td>41.65</td> <td>3574.41</td> <td>218,289</td> <td>15.89</td> <td>Deen</td> <td>6 770</td> <td>13 000</td>	6/13/07	41.65	3574.41	218,289	15.89	Deen	6 770	13 000
8/9/07 41.75 3574.31 277,689 5.60 Shallow 1,650 3,150 12/6/07 41.72 3574.34 386,769 2.41 Shallow 440 1,310 12/6/07 41.72 3574.34 386,769 2.41 Shallow 440 1,310 4/3/08 41.80 3574.26 386,769 -	7/18/07	41.64	3574 42	253 929				
8/9/07 41.75 3574.31 277,689 14.62 Deep 6,810 12,000 12/6/07 41.72 3574.34 386,769 2.41 Shallow 440 1,310 12/6/07 41.72 3574.34 386,769 2.41 Shallow 440 1,310 4/3/08 41.80 3574.26 386,769 -	0.0.07		0.574.04	200,020	5.60	Shallow	1.650	3,150
12/6/07 41.72 3574.34 386,769 2.41 Shallow 440 1,310 12/6/07 41.72 3574.34 386,769 11.38 Deep 4,090 13,800 4/3/08 41.80 3574.26 386,769 - - - - 5/12/08 41.85 3574.21 386,871 9.99 Deep 4,254 6,490 8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 11/20/08 42.02 3574.00 387,018 2.75 Shallow 481 1,450 11/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 11/20/08 42.06 3573.94 387,090 3.51 Shallow 680 1,680 2/16/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92	8/9/07	41.75	3574.31	277,689	14.62	Deep	6.810	12.000
12/007 41.72 3574.34 366,769 11.38 Deep 4,090 13,800 4/3/08 41.80 3574.26 386,769 <td>10/6/07</td> <td>44 70</td> <td>2574.24</td> <td>200 700</td> <td>2.41</td> <td>Shallow</td> <td>440</td> <td>1,310</td>	10/6/07	44 70	2574.24	200 700	2.41	Shallow	440	1,310
4/3/08 41.80 3574.26 386,769 - - - - - 5/12/08 41.85 3574.21 386,871 2.24 Shallow 745 1,160 8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 1/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 1/20/08 42.06 3573.94 387,018 2.75 Shallow 681 1,450 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92	12/0/07	41.72	3574.34	386,769	11.38	Deep	4,090	13,800
5/12/08 41.85 3574.21 386,871 2.24 Shallow 745 1,160 8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 11/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/07 41.83 3574.43 113 1.27 <td>4/3/08</td> <td>41.80</td> <td>3574.26</td> <td>386,769</td> <td></td> <td></td> <td></td> <td></td>	4/3/08	41.80	3574.26	386,769				
6/12/00 41.83 5074.21 300,071 9.99 Deep 4,254 6,490 8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 11/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 1153<	5/12/08	41.85	3574 21	386 871	2.24	Shallow	745	1,160
8/19/08 42.02 3574.04 386,946 2.46 Shallow 470 1,150 11/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3574.43 113 1.27 <td>0/12/00</td> <td>41.00</td> <td>0074.21</td> <td>500,071</td> <td>9.99</td> <td>Deep</td> <td>4,254</td> <td>6,490</td>	0/12/00	41.00	0074.21	500,071	9.99	Deep	4,254	6,490
11/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 9.18 Deep 4,626 5,680 5,680 1,450 9.18 Deep 4,626 5,680 1,450 9.18 Deep 4,626 5,680 1,450 9.18 Deep 4,626 5,680 1,680 6,140 5,26/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 6,140 5,26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 5,550 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 5,550 5,380 11.71 Deep 3,560 5,380 1,280 5,580 5,380 11.53 Deep 3,840 6,420 MW-2s Casing Elev.= 3616.26 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5<	8/19/08	42.02	3574.04	386,946	2.46	Shallow	470	1,150
11/20/08 42.06 3574.00 387,018 2.75 Shallow 681 1,450 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 5/26/09 42.21 3573.85 387,234 2.66 Shallow 482 1,250 8/20/09 42.21 3573.77 387,306 2.92 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.83 3574.43 8/9/07 41.89 3574.37 119 0.93				,	9.33	Deep	3,960	6,200
2/16/09 42.12 3573.94 387,090 3.51 Shallow 680 1,680 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.89 3574.37 119 0.93 Shallow 213 624	11/20/08	42.06	3574.00	387,018	2.75	Shallow	681	1,450
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				·	9.18	Deep	4,626	5,680
5/26/09 42.16 3573.90 387,162 2.28 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 MW-2s Casing Elev.= 3616.26 574.43 113 1.27 Shallow 348 1,260 7/18/07 41.83 3574.43 113 0.93 Shallow 213 624	2/16/09	42.12	3573.94	387,090	3.51	Shallow	680	1,680
5/26/09 42.16 3573.90 387,162 2.26 Shallow 482 1,250 8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/07 41.83 3574.43 113 1.27 Shallow 348 1,260 6/13/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.89 3574.37 119 0.93 Shallow 213 624					10.76	Deep	3,850	6,140
8/20/09 42.21 3573.85 387,234 2.66 Shallow 533 1,280 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/07 41.83 3574.43 113 1.27 Shallow 348 1,260 6/13/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.89 3574.37 119 0.93 Shallow 213 624	5/26/09	42.16	3573.90	387,162	2.20	Doop	482	1,250
8/20/09 42.21 3573.85 387,234 2.00 611alow 533 1,260 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 11/3/09 42.29 3573.77 387,306 2.92 Shallow 620 1,380 MW-2s Casing Elev.= 3616.26 6/13/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.83 3574.43 8/9/07 41.89 3574.37 119 0.93 Shallow 213 624					9.40 2.66	Shallow	3,42U 522	3,350
MW-2s Casing Elev.= 3616.26 6/13/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.83 3574.43	8/20/09	42.21	3573.85	387,234	2.00	Deen	3 560	5 380
11/3/09 42.29 3573.77 387,306 2.02 Strate 020 1,360 MW-2s Casing Elev.= 3616.26					2 92	Shallow	620	1 380
MW-2s Casing Elev.= 3616.26 6/13/07 41.83 3574.43 113 1.27 Shallow 348 1,260 7/18/07 41.83 3574.43 <td>11/3/09</td> <td>42.29</td> <td>3573.77</td> <td>387,306</td> <td>11 53</td> <td>Deen</td> <td>3.840</td> <td>6.420</td>	11/3/09	42.29	3573.77	387,306	11 53	Deen	3.840	6.420
6/13/0741.833574.431131.27Shallow3481,2607/18/0741.833574.438/9/0741.893574.371190.93Shallow213624	MW-2s Ca	sing Elev.=	3616.26					-,
7/18/07 41.83 3574.43 8/9/07 41.89 3574.37 119 0.93 Shallow 213 624	6/13/07	41.83	3574.43	.113	1.27	Shallow	348	1,260
8/9/07 41.89 3574.37 119 0.93 Shallow 213 624	7/18/07	41.83	3574.43					
	8/9/07	41.89	3574.37	119	0.93	Shallow	213	624

Table 1	
Laboratory Results Summary - Groundwater	Samples

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	Labora	tory Results	Summary -	Groundv	vater Sam	ples	
Sample Date	DTW	GW Elevation	Recv.	Field	Sample	Chloride	TDS
Location	(csg)	(ft)	Vol (gal)	Cond.	Depth	(mg/L)	(mg/L)
			· · · · · · · · · · · · · · · · · · ·				
12/6/07	41.93	3574.33	124	0.82	Shallow	142	634
4/3/08	41.98	3574.28	124				
5/12/08	42.07	3574.19	132	0.76	Shallow	53.2	314
8/19/08	42.22	3574.04	139	0.64	Shallow	7.90	360
11/20/08	42.27	3573.99	145	0.77	Shallow	42.5	384
2/16/09	42.33	3573.93	150	0.75	Shallow	17.7	418
5/26/09	42.37	3573.89	158	0.59	Shallow	18.5	408
8/20/09	42.42	3573.84	163	0.68	Shallow	19.5	436
11/3/09	42.50	3573.76	169	0.70	Shallow	34.7	432
MW-2d Ca	asing Elev.=	3615.92					
6/13/07	41.44	3574.48	320	4.59	Deep	1,460	3,810
7/18/07	41.46	3574.46					
8/9/07	41.50	3574.42	405	3.63	Deep	1,380	3,180
12/6/07	41.55	3574.37	511	4.41	Deep	1,640	3,160
4/3/08	41.63	3574.29	511		'		
5/12/08	41.69	3574.23	616	5.65	Deep	1.170	2.200
8/19/08	41.85	3574.07	704	5.48	Deep	2,190	4.080
11/20/08	41.91	3574.01	770	5.70	Deep	2.552	3,410
2/16/09	41.98	3573.94	833	6.91	Deep	2,350	5,100
5/26/09	42.04	3573.88	896	6.60	Deep	2.390	5.300
8/20/09	42.08	3573.84	959	8 23	Deep	2,640	4 220
11/3/09	42.15	3573.77	1 022	8 28	Deep	2,750	5,220
MW-3s Ca	asing Elev.=	3616.80	.,				
6/13/07	42.57	3574.23	148	8.77	Shallow	4.480	10.600
7/18/07	42.58	3574.22					
8/9/07	42.62	3574.18	201	7.67	Shallow	2.710	6.330
12/6/07	42.68	3574.12	236	7.58	Shallow	2,800	5,550
4/3/08	42.75	3574.05	236			_,	
5/12/08	42.97	3573.83	266	5 43	Shallow	2.021	3.470
8/19/08	42.96	3573.84	294	3.88	Shallow	1.330	2 870
11/20/08	43.02	3573.78	322	5 31	Shallow	1,755	3,230
2/16/09	43.08	3573 72	346	5 77	Shallow	1 820	3 220
5/26/09	43.13	3573.67	378	6.07	Shallow	1,990	4,280
8/20/09	43.18	3573.62	402	7.80	Shallow	2.140	4.000
11/3/09	43.25	3573.55	426	7.97	Shallow	2.390	5.220
MW-3d Ca	asing Elev.=	3616.70					
6/13/07	42.55	3574.15	97	16.65	Deep	6,670	24,100
7/18/07	42.53	3574.17			'		
8/9/07	42.62	3574.08	242	>20.00	Deep	11,000	27,400
12/6/07	42.64	3574.06	294	>20.00	Deep	10,000	14,200
4/3/08	42.81	3573.89	294				
5/12/08	63.00	3553.70	5,775	26.0	Deep	10,850	17,200
7/18/08			112,875	23.8	Deep	10,100	17,600
8/19/08	43.00	3573.70	112,925	19.2	Deep	10,700	17,200
11/20/08	43.03	3573.67	112,979	20.0	Deep	10,740	14,900
2/16/09	43.11	3573.59	113,033	20.0	Deep	11,000	15,100
5/26/09	43.16	3573.54	113,087	16.9	Deep	9,270	16,700
8/20/09	43.21	3573.49	113,138	20.0	Deep	10,500	14,800
11/3/09	43.29	3573.41	113,188	20.0	Deep	10,400	15,900

Table 1

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Comple Data		CW Elevation	Baav	Field	Sample	Chlorido	TDS
Sample Date				Cond	Donth		
Location	(csy)	(11)	voi (gai)	<u>conu.</u>	Deptin	(ing/r_)	(11.9/12)
	· ~.	0040.00		·····			
MW-4s Ca	asing Elev.=	3616.89	40	0.70	<u>.</u>	04.7	40.4
8/9/07	42.85	3574.04	18	0.72	Shallow	21.7	434
12/6/07	42.93	3573.96	25	0.66	Shallow	21.0	1,060
4/3/08	43.00	3573.89	29	0.69	Shallow	18.7	450
8/19/08	43.21	3573.68	33	0.70	Shallow	13.0	472
11/20/08	43.28	3573.61	37	0.72	Shallow	37.2	444
2/16/09	43.33	3573.56	42	0.85	Shallow	21.3	4/4
5/26/09	43.37	3573.52	46	0.61	Shallow	18.4	414
8/20/09	43.45	3573.44	50	0.70	Shallow	19.3	432
11/3/09	43.51	3573.38	56	0.70	Shallow	23.6	402
MW-4d Ca	asing Elev.=	3617.13			_		
8/9/07	47.12	3570.01	12	0.92	Deep	88.2	576
12/6/07	43.17	3573.96	32	0.92	Deep	92.3	906
4/3/08	43.25	3573.88	53	0.95	Deep	83.4	590
8/19/08	43.44	3573.69	74	0.99	Deep	75.9	616
11/20/08	43.52	3573.61	95	0.99	Deep	106	544
2/16/09	43.58	3573.55	116	1.16	Deep	73.7	544
5/26/09	43.62	3573.51	137	0.87	Deep	79.5	552
8/20/09	43.68	3573.45	158	0.99	Deep	78.0	442
11/3/09	43.73	3573.40	179	0.98	Deep	86.8	528
MW-5s Ca	asing Elev.=	3616.43					
8/9/07	42.10	3574.33	22	0.69	Shallow	43.0	470
12/6/07	42.18	3574.25	27	0.82	Shallow	35.8	982
4/3/08	42.26	3574.17	27				
5/12/08	42.30	3574.13	32	0.85	Shallow	58.5	382
8/19/08	42.49	3573.94	37	0.72	Shallow	12.4	488
11/20/08	42.55	3573.88	43	0.74	Shallow	42.5	426
2/16/09	42.60	3573.83	48	0.85	Shallow	21.1	550
5/26/09	42.65	3573.78	53	0.62	Shallow	18.5	486
8/20/09	42.70	3573.73	58	0.72	Shallow	17.0	560
11/3/09	42.77	3573.66	63	0.69	Shallow	18.9	662
MW-5d Ca	asing Elev.=	3616.19					
8/9/07	41.85	3574.34	96	0.80	Deep	112	502
12/6/07	41.93	3574.26	78	0.82	Deep	94.6	712
4/3/08	42.01	3574.18	78				
5/12/08	42.05	3574.14	96	1.03	Deep	117	460
8/19/08	42.25	3573.94	117	0.97	Deep	113	476
11/20/08	42.30	3573.89	135	1.03	Deep	149	530
2/16/09	42.35	3573.84	153	1.24	Deep	155	548
5/26/09	42.40	3573.79	171	1.02	Deep	156	606
8/20/09	42.46	3573.73	189	1.27	Deep	203	832
11/3/09	42.52	3573.67	207	1.38	Deep	246	662
N. Windmill	Csg. Elev.=	3609.13					
3/30/06			NA			33.6	644
6/27/06	34.25	3574.88					
6/13/07	33.65	3575.48	NA	0.89	Unkn	62.8	500
Water Well	Csg. Elev.=	3615.58					
6/27/06	40.40	3575.18					
6/13/07	40.73	3574.85					
NMWQCC Stand	ards					250	1,000

Table 1
Laboratory Results Summary - Groundwater Samples

* Bold text indicates values exceed NMWQCC Standards

c:\Samson\Livestock 30\Project Data

Appendix B

Ground Water Monitoring Laboratory Reports

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

Analytical Report 350775

for

R.T. Hicks Consultants, LTD

Project Manager: Dale Littlejohn

Samson Livestock 30

L-124-1109

09-NOV-09





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-08-TX), Arizona (AZ0738), 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 (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330) Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX) Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX) Xenco-Boca Raton (EPA Lab Code: FL00449): Florida(E86240), South Carolina(96031001), Louisiana(04154), Gcorgia(917)



09-NOV-09



Project Manager: Dale Littlejohn R.T. Hicks Consultants, LTD 901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

Reference: XENCO Report No: 350775 Samson Livestock 30 Project Address: Lea Co., NM

Dale Littlejohn:

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 350775. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 350775 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,

Brent Barron, II Odessa Laboratory Manager

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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America





Sample Cross Reference 350775

R.T. Hicks Consultants, LTD, Albuquerque, NM

Samson Livestock 30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1 (S)	W	Nov-03-09 09:53		350775-001
MW-1 (D)	W	Nov-03-09 09:48		350775-002
MW-2 (S)	W	Nov-03-09 10:40		350775-003
MW-2 (D)	W	Nov-03-09 10:49		350775-004
MW-3 (S)	W	Nov-03-09 08:54		350775-005
MW-3 (D)	W	Nov-03-09 08:33		350775-006
MW-4 (S)	W	Nov-03-09 11:31		350775-007
MW-4 (D)	W	Nov-03-09 11:34		350775-008
MW-5 (S)	W	Nov-03-09 12:21		350775-009
MW-5 (D)	W	Nov-03-09 12:10		350775-010

CASE NARRATIVE



Client Name: R.T. Hicks Consultants, LTD Project Name: Samson Livestock 30

 Project ID:
 L-124-1109

 Work Order Number:
 350775

Report Date: 09-NOV-09 Date Received: 11/03/2009

Sample receipt non conformances and Comments: None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-780328 Inorganic Anions by EPA 300 None

Batch: LBA-780417 TDS by SM2540C None

XENCO Laboratories

Certificate of Analysis Summary 350775 R.T. Hicks Consultants, LTD, Albuquerque, NM

Project Name: Samson Livestock 30



	Jale Littlejohn	Lea Co., NM	
Project ld: 1	Contact: 1	Project Location: I	

l in Lab: Tue No	ort Date: 09-NO'	Manager: Brent B
Nov-03-0	60-VO	t Barron.

	Lab Id:	350775-001	350775-002	350775-003	350775-004	350775-005	350775-006
Analysis Dogradad	Field Id:	MW-1 (S)	(D) I-MW	MW-2 (S)	MW-2 (D)	MW-3 (S)	MW-3 (D)
noicon hour ciclimite	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Nov-03-09 09:53	Nov-03-09 09:48	Nov-03-09 10:40	Nov-03-09 10:49	Nov-03-09 08:54	Nov-03-09 08:33
Anions by E300	Extracted:						
	Analyzed:	Nov-04-09 22:36					
	Units/RL:	mg/L RL					
Chloride		620 10.0	3840 50.0	34.7 5.00	2750 50.0	2390 25.0	10400 250
TDS by SM2540C	Extracted:						
	Analyzed:	Nov-04-09 15:42					
	Units/RL:	mg/L RL					
Total dissolved solids		1380 5.00	6420 5.00	432 5.00	5080 5.00	5220 5.00	15900 5.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Odessa Laboratory Manager Brent Barron, II

Final Ver. 1.000
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Certificate of Analysis Summary 350775 R.T. Hicks Consultants, LTD, Albuquerque, NM

Project Name: Samson Livestock 30



Project Id: L-124-1109 Contact: Dale Littlejohn Project Location: Lea Co., NM

Date Received in Lab: Tue Nov-03-09 04:03 pm

Report Date: 09-NOV-09 Project Manager: Brent Barron, II

	Lab Id:	350775-007	350775-008	350775-009	350775-010	
Analysis Donnostod	Field Id:	MW-4 (S)	MW-4 (D)	MW-5 (S)	MW-5 (D)	
nates we do not the second	Depth:					
	Matrix:	WATER	WATER	· WATER	WATER	
	Sampled:	Nov-03-09 11:31	Nov-03-09 11:34	Nov-03-09 12:21	Nov-03-09 12:10	
Anions by E300	Extracted:					
	Analyzed:	Nov-04-09 22:36	Nov-04-09 22:36	Nov-04-09 22:36	Nov-04-09 22:36	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Chloride		23.6 5.00	86.8 5.00	18.9 5.00	246 5.00	· · ·
TDS by SM2540C	Extracted:					
	Analyzed:	Nov-04-09 15:42	Nov-04-09 15:42	Nov-04-09 15:42	Nov-04-09 15:42	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Total dissolved solids		402 5.00	528 5.00	378 5.00	662 5.00	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical treptor represent the bees) judgement of XENCO Laboratories. XERCO Laboratories assumes no responsibility and marks no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order tunless otherwise agreed to it writing.

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Odessa Laboratory Manager Brefit Barron, II

Final Ver. 1.000





- 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

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Project Name: Samson Livestock 30

Work Order #: 350775		Project ID:			. L-1	24-1109
Lab Batch #: 780328	Sample: 780328-	I-BKS	Matrix	: Water		
Date Analyzed: 11/04/2009	Date Prepared: 11/04/20	009	Analyst	: LATCOF	ι	
Reporting Units: mg/L	Batch #: 1	BLANK /	ANK /BLANK SPIKE RECO			STUDY
Anions by E300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes	[A]	[B]	Result [C]	%R [D]	%R	
Chloride	ND	10.0	10.5	105	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: Samson Livestock 30

Work Order #: 350775 Lab Batch ID: 780417 Analyst: WRU

Date Prepared: 11/04/2009 Batch #:] Sample: 780417-1-BKS

Project ID: L-124-1109 Date Analyzed: 11/04/2009 Matrix: Water

Units: mg/L		BLAN	K /BLANK S	PIKE / B	ILANK S	PIKE DUPI	ICATE I	RECOVE	CRY STUD	Y	
TDS by SM2540C	Blank Sample Result [A]	Spike Addeđ	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Dunlicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[0]	[E]	Result [F]	5	2			
Total dissolved solids	QN	1000	006	06	1000	914	16	2	80-120	30	

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: Samson Livestock 30

Work Order #: 350775 Lab Batch #: 780328		Pro	oject ID:	L-124-1109	9
Date Analyzed: 11/04/2009	Date Prepared: 11/04/2009	А	nalyst: L	ATCOR	
QC- Sample ID: 350773-001 S	Batch #: 1	Г	Matrix: W	ater	
Reporting Units: mg/L	MATRIX / M	ATRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Spike Sample Spike Result Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A] [B]		. ,		
Chloride	82.5 100	183	101	90-110	

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

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Samson Livestock 30

Work Order #: 350775

Lab Batch #: 780328			Project F	D: L-124-11	09
Date Analyzed: 11/04/2009 Date P	repared: 11/04/2009) Anal	lyst: LATC	OR	
QC- Sample ID: 350773-001 D	Batch #: 1	Mat	rix: Water		
Reporting Units: mg/L	SAMPLE	/SAMPLE	DUPLIC.	ATE RECO	JVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]		.	i
Chloride	82.5	75.7	9	20	
Lab Batch #: 780417					
Date Analyzed:11/04/2009Date Prepared:11/04/2009Analyst:WRU					
QC- Sample ID: 350773-001 D	Batch #: 1	Mat	rix: Water		
Reporting Units: mg/L	SAMPLE	/ SAMPLE '	DUPLIC	ATE RECO	OVERY
TDS by SM2540C	Parent Sample Result	Sample Duplicate	RPD	Control Limits	Flag
	[A]	Result	1 1	70KID	Į.
Analyte	[A]	Result [B]		70KI D	

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

CODY RECORD AND ANALYSIS REQUEST CODY RECORD AND ANALYSIS REQUEST Vame: Samson Livestock 30 ect #: L-124-1109 ect #: L-124-1109 Aniore (CI: SOA, CO3, HCO3) O#: Aniore (CI: SOA, CO3, HCO3) O#: Aniore (CI: SOA, CO3, HCO3) O#: Aniore (CI: SOA, CO3, HCO3) Aniore (CI: SOA, CO3, HCO3) O#: Aniore (CI: SOA, CO3, HCO3) Aniore (CI: SOA, CON, HCO3) Aniore (CI: SOA, CON, CONTRINUE Aniore (CI: SOA, CON, CONTRIPO Aniore (CI: SOA, CON, CONTRIPO Aniore (CI: SOA, CON, CONTRIPO Aniore (CI: SOA, CON, CONTRIPO <th>w laber no seals</th>	w laber no seals
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	R.T. Hicks
Date/ Time:	11.3.09 16:03
Lab ID # :	350775
Initials:	AL

Sample Receipt Checklist

			Client	Initials
#1 Temperature of container/ cooler?	Yes	No	•\ °C	
#2 Shipping container in good condition?	(es)	No		
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4 Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5 Chain of Custody present?	Tes	No		
#6 Sample instructions complete of Chain of Custody?	Ves	No		
#7 Chain of Custody signed when relinquished/ received?) (es	No		
#8 Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	Yes	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custor	ly? (Yes	No		
#11 Containers supplied by ELOT?	(Yes	No		
#12 Samples in proper container/ bottle?	(Yes)	No	See Below	
#13 Samples properly preserved?	res	No	See Below	
#14 Sample bottles intact?	Yes	No		
#15 Preservations documented on Chain of Custody?	(Yes)	No	†	
#16 Containers documented on Chain of Custody?	Ves	No		
#17 Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18 All samples received within sufficient hold time?	(Yes)	No	See Below	
#19 Subcontract of sample(s)?	Yes	No	Not Applicable	
#20 VOC samples have zero headspace?	Yes	No		
Variance I Contact: Contacted by:	ocumentation		Date/ Time:	
Regarding:				
Corrective Action Taken:				
Check all that Apply: See attached e-mail/ fa Client understands and Cooling process had b	ax d would like to proc egun shortly after	ceed with sampling	n analysis 9 event	

Analytical Report 341698

for

R.T. Hicks Consultants, LTD

Project Manager: Dale Littlejohn

Samson Livestock 30

L-124-0809

31-AUG-09





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-08-TX), Arizona (AZ0738), 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 (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330) Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX) Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX) Xenco-Boca Raton (EPA Lab Code: FL00449): Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917)



31-AUG-09



Project Manager: Dale Littlejohn R.T. Hicks Consultants, LTD 901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

Reference: XENCO Report No: 341698 Samson Livestock 30 Project Address: Lea Co., NM

Dale Littlejohn:

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 341698. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 341698 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,

Brent Barron, II Odessa Laboratory Manager

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ATT 12.7



Sample Cross Reference 341698

R.T. Hicks Consultants, LTD, Albuquerque, NM

Samson Livestock 30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1 (S)	W	Aug-20-09 09:05		341698-001
MW-1 (D)	W	Aug-20-09 08:57		341698-002
MW-2 (S)	W	Aug-20-09 09:44		341698-003
MW-2 (D)	W	Aug-20-09 09:50		341698-004
MW-3 (S)	W	Aug-20-09 07:58		341698-005
MW-3 (D)	W	Aug-20-09 07:40		341698-006
MW-4 (S)	W	Aug-20-09 10:32		341698-007
MW-4 (D)	W	Aug-20-09 10:50		341698-008
MW-5 (S)	W	Aug-20-09 11:27		341698-009
MW-5 (D)	W	Aug-20-09 11:24		341698-010





Client Name: R.T. Hicks Consultants, LTD Project Name: Samson Livestock 30

Project ID:L-124-0809Work Order Number:341698

Report Date: 31-AUG-09 Date Received: 08/20/2009

Sample receipt non conformances and Comments: None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-769442 Inorganic Anions by EPA 300 None

Batch: LBA-769774 TDS by SM2540C None

XeNCO (aborelation

Project Id: L-124-0809 Contact: Dale Littlejohn Project Location: Lea Co., NM

Certificate of Analysis Summary 341698 R.T. Hicks Consultants, LTD, Albuquerque, NM

Project Name: Samson Livestock 30



Date Received in Lab: Thu Aug-20-09 03:17 pm Report Date: 31-AUG-09

					Project Manager: E	trent Barron, II	:
	Lab Id:	341698-001	341698-002	341698-003	341698-004	341698-005	341698-006
Analysis Dogusstad	Field Id:	MW-1 (S)	(D) I-MM	MW-2 (S)	MW-2 (D)	MW-3 (S)	MW-3 (D)
naicanhavi cichinit	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Aug-20-09 09:05	Aug-20-09 08:57	Aug-20-09 09:44	Aug-20-09 09:50	Aug-20-09 07:58	Aug-20-09 07:40
Anions by EPA 300	Extracted:						
	Analyzed:	Aug-21-09 14:52	Aug-21-09 15:15	Aug-21-09 15:38	Aug-21-09 16:01	Aug-21-09 16:24	Aug-21-09 16:47
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride		533 10.0	3560 100	19.5 5.00	2640 50.0	2140 25.0	10500 250
TDS by SM2540C	Extracted:						
	Analyzed:	Aug-24-09 14:30	Aug-24-09 14:30	Aug-24-09 14:30	Aug-24-09 14:30	Aug-24-09 14:30	Aug-24-09 14:30
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total dissolved solids		1280 5.00	5380 5.00	436 5.00	4220 5.00	4000 5.00	14800 5.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENC0 Laboratories. XENC0 Laboratories assumes no responsibility and makes no warranty to the cerd use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing. Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Odessa Laboratory Manager Brent Barron, II

	-124-0809
Q.	oject Id: L
XEN	Pre

Contact: Dale Littlejohn

Project Location: Lea Co., NM

Certificate of Analysis Summary 341698 R.T. Hicks Consultants, LTD, Albuquerque, NM Project Name: Samson Livestock 30



ab: Thu Aug-20-09 03:1	ate: 31-AUG-09
ate Received in L	Report D

					Project Manager: Brent Barron, II	
	Lab Id:	341698-007	341698-008	341698-009	341698-010	
Andreis Donnestad	Field Id:	MW-4 (S)	MW-4 (D)	MW-5 (S)	MW-5 (D)	
naican have sistimut	Depth:					
	Matrix:	WATER	WATER	WATER	WATER	
	Sampled:	Aug-20-09 10:32	Aug-20-09 10:50	Aug-20-09 11:27	Aug-20-09 11:24	
Anions by EPA 300	Extracted:					
	Analyzed:	Aug-21-09 17:10	Aug-21-09 17:33	Aug-21-09 17:56	Aug-21-09 18:19	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Chloride		19.3 5.00	78.0 5.00	17.0 5.00	203 5.00	
TDS by SM2540C	Extracted:					
	Analyzed:	Aug-24-09 14:30	Aug-24-09 14:30	Aug-24-09 14:30	Aug-24-09 14:30	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Total dissolved solids		432 5.00	442 5.00	560 5.00	832 5.00	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical represent the besi judgment of XENC 0. Laboratorics, XENC 0. Laboratorics assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Odessa Laboratory Manager Brefit Barron, II





- 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

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Project Name: Samson Livestock 30

Work Order #: 341698		Pi	roject ID:		Ĺ-1	24-0809	
Lab Batch #: 769442	Sample: 769442-	I-BKS	Matrix	Water			
Date Analyzed: 08/21/2009	Date Prepared: 08/21/20	009	Analyst	LATCOF	2		
Reporting Units: mg/L	Batch #: 1 BLANK /BLANK SPIKE RECOVERY						
Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags	
Analytes	[A]	[B]	Result [C]	%R [D]	%R		
Chloride	ND	10.0	10.6	106	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: Samson Livestock 30

341698	'RU
#	1
Work Order	Analyst:

Lab Batch ID: 769774

Date Prepared: 08/24/2009 Sample: 769774-1-BKS Batch #: 1

Project ID: L-124-0809 Date Analyzed: 08/24/2009 Matrix: Water

Units: mg/L		BLANI	K /BLANK S	PIKE / B	LANK S	PIKE DUPL	ICATE F	RECOVE	RY STUD	Y	
TDS by SM2540C	Blank Sample Result	Spike Added	· Blank Spike Deserte	Blank Spike	Spike Added	Blank Spike Durificato	Blk. Spk Dup. % D	RPD	Control Limits %D	Control Limits % DDD	Flag
Analytes	<u>.</u>	[B]		(<u>6</u>	[E]	Result [F]	ų (j	•	10/		
Total dissolved solids	ND	1000	854	85	1000	920	92	7	80-120	30	
											I

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

Date Prepared: 08/21/2009



Project Name: Samson Livestock 30

Work Order #: 341698 Lab Batch #: 769442 Date Analyzed: 08/21/2009 QC- Sample ID: 341725-001 S Reporting Units: mg/L

Project ID: L-124-0809

Analyst: LATCOR

Batch #: 1 Matrix: Water Reporting Units: mg/L MATRIX / MATRIX SPIKE RECOVERY STUDY Parent **Inorganic Anions by EPA 300** Spiked Sample Control Sample %R Spike Result Limits Flag Result Added [C] [D] %R [A] [B] Analytes Chloride 477 200 691 107 80-120

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

BRL - Below Reporting Limit





Project Name: Samson Livestock 30

Work Order #: 341698

Lab Batch #: 769442			Project I	D: L-124-08	.09
Date Analyzed: 08/21/2009 Da	te Prepared: 08/21/20	09 Ana	lyst: LATC	OR	
QC- Sample ID: 341725-001 D	Batch #: 1	Mat	arix: Water		
Reporting Units: mg/L	SAMPLE	E / SAMPLE	DUPLIC	ATE RECO	OVERY
Anions by EPA 300	Parent Samp Result [A]	e Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			ł
Chloride	477	467	2	20	
Lab Batch #: 769774	<u> </u>		·		* <u>-</u> *
Date Analyzed: 08/24/2009 Da	te Prepared: 08/24/20	09 Ana	lyst: WRU		
QC- Sample ID: 341698-001 D	Batch #: 1	Mat	arix: Water		
Reporting Units: mg/L	SAMPLF	Z / SAMPLE	DUPLIC	ATE RECO	OVERY
TDS h., SM2540C					
Analyte	Parent Samp Result [A]	le Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

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

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Variance/ Corrective Action Re	port-Samp	le Log-In	Ļ.	
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Date/Time: $3.70 \vee 1.5.11$	•			
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e	Alian an a	1		
, sample-receip	CONCERNSE	2		Clant Initials.
#1 Temperature of container/ cooler?	Vec.	No	»(o *C	
#2 Shipping container in good condition?	Yes	No		1
#3% Custody Seals Intact on Shipping container/ cooler?	. Yes	No	Not Presento	× 8
4 Custody Seals intact on sample bottles/ container?	Yes	No	Not Presents	j
#5 Chain of Custody present?	Aes_	No		
P6 Sample Instructions complete of Chain of Custody?	1 203	I NO	2	
# Auto Chein of Custody signed when reinduished/ received?/	- (Yes)	IF~END		
60% Chain Or Custory agrees with Sample (aperis) /	1.168	1. <u>(NO.8.</u> 1. (NO.8.	U written on Cont/ Lio	
#100 Sample matrix properties paras with Chain of Custoriy?	Vos.	No.	Not Appacable	te de la companya de
#112 Containers sumfed by FLOT2	WARS	ISCNA.		
#12 Samples in proper container/ bottle?	(Yes)	No	Ana Antria	IN NOT
#13 Samples property preserved?	1 Vag	No×	See Below	2.00 GW
#14 Sample bottles intact?	Ves	Nox		
#15 Preservations documented on Chain of Custody?	Ves	No.		the second s
#16%Containers documented on Chain of Custody?	Ver	No	*	
#17 Sufficient sample amount for indicated test(s)?	R(Yes)	No.	See Below	a static static
#18 All samples received within sufficient hold time?	∑(Yes)	No	See Below Sa	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
#19. Subcontract of sample(s)?	Yes	No:	Applicable	1004.50%
#20 VOC samples have zero headspace?	_]⊠Yes ∞	No	Not Applicable	<u>17.8 % (</u>).
		Parts and	ali a se	t in the full
Vanance Docu	mentation	8		
Contacted by:		3~	Date/ Time:	. 4
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Corrective Action Taken	:			
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Check all that Apply: See attached e-mail/ fax				
Client understands and wou	d like to pro	ceed with	analysis	
Cooling process had begun	shortly after	sampling	event	•

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Analytical Report 333728

for

R.T. Hicks Consultants, LTD

Project Manager: Dale Littlejohn

Samson Livestock 30 L-124-0509

28-MAY-09





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12600 West 1-20 East Odessa, Texas 79765

Texas certification numbers: Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX Corpus Christi, TX T104704370-08-TX - Dallas, TX T104704295-08-TX

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> South Carolina certification numbers: Norcross(Atlanta), GA 98015

North Carolina certification numbers: Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America Midland - Corpus Christi - Atlanta



28-MAY-09



Project Manager: Dale Littlejohn R.T. Hicks Consultants, LTD 901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

Reference: XENCO Report No: 333728 Samson Livestock 30 Project Address: Lea Co., NM

Dale Littlejohn:

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 333728. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 333728 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,

Brent Barron, II Odessa Laboratory Manager

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Sample Cross Reference 333728

R.T. Hicks Consultants, LTD, Albuquerque, NM

Samson Livestock 30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1 (s)	W	May-26-09 08:46		333728-001
MW-1 (d)	W	May-26-09 08:51		333728-002
MW-2 (s)	W	May-26-09 09:40		333728-003
MW-2 (d)	W	May-26-09 09:47		333728-004
MW-3 (s)	W	May-26-09 07:57		333728-005
MW-3 (d)	W	May-26-09 07:28		333728-006
MW-4 (s)	W	May-26-09 10:25		333728-007
MW-4 (d)	W	May-26-09 10:33		333728-008
MW-5 (s)	W	May-26-09 11:15		333728-009
MW-5 (d)	W	May-26-09 11:09		333728-010

XENCO Laboratories

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Contact: Dale Littlejohn Project Id: L-124-0509

Certificate of Analysis Summary 333728 Ì R.T. Hicks Consultants, LTD, Albuquerque, NM I l

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Project Name: Samson Livestock 30



					Report Date:	28-MAY-09	
rojeci Location: Lea Co., Nivi					Project Manager:	Brent Barron, II	
	Lab Id:	333728-001	333728-002	333728-003	333728-004	333728-005	333728-006
Australia Document	Field Id:	MW-1 (s)	(P) 1-MW	MW-2 (s)	MW-2 (d)	MW-3 (s)	(p) £-MM
naisanhay sistinuy	Depth:						
-	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	May-26-09 08:46	May-26-09 08:51	May-26-09 09:40	May-26-09 09:47	May-26-09 07:57	May-26-09 07:28
Anions by FPA 300	Extracted:				ļ		
	Analyzed:	May-27-09 13:50	May-27-09 13:50	May-27-09 13:50	May-27-09 13:50	May-27-09 13:50	May-27-09 13:50
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride *		482 10.0	3420 100	· 18.5 5.00	2390 25.0	1990 25.0	9270 25
TDS by SM2540C	Extracted:						
	Analyzed:	May-27-09 16:00	May-27-09 16:00	May-27-09 16:00	May-27-09 16:00	May-27-09 16:00	May-27-09 16:00
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total dissolved solids		1250 5.00	5550 5.00	408 5.00	5300 5.00	4280 5.00	16700 5.0

This analytical report, and the entire data proloage it represents, has been roule for your exclusive and confidential use. The interpretations and results expressed interpretation around the presson the bar joinground of XENCO Laboratories. XEXCOL Laboratories semans an expensibility and makes no varranty to the endures of the data hereby presented. Our liability is limited to the amount invoiced for this work order tunks; otherwise agreed to in writing.

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Brent Barron Odessa Laboratory Director

XERCO Laboratories

Project Id: L-124-0509 Contact: Dale Littlejohn Project Location: Lea Co., NM

Certificate of Analysis Summary 333728 R.T. Hicks Consultants, LTD, Albuquerque, NM Project Name: Samson Livestock 30



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Date Received in Lab: Wed May-27-09 08:42 am Report Date: 28-MAY-09

					Project Manager: Bre	ent Barron, II
	Lab Id:	333728-007	333728-008	333728-009	333728-010	
Analucia Dogradod	Field 1d:	MW-4 (s)	MW-4 (d)	MW-5 (s)	MW-5 (d)	
naicanhay sistimuy	Depth:					
	Matrix:	WATER	WATER	WATER	WATER	
	Sampled:	May-26-09 10:25	May-26-09 10:33	May-26-09 11:15	May-26-09 11:09	
Anions hv FPA 300	Extracted:					
	Analyzed:	May-27-09 13:50	May-27-09 13:50	May-27-09 13:50	May-27-09 13:50	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Chloride *		18.4 5.00	79.5 5.00	18.5 5.00	156 5.00	
TDS by SM2540C	Extracted:			-		
	Analyzed:	May-27-09 16:00	May-27-09 16:00	May-27-09 16:00	May-27-09 16:00	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Total dissolved solids		414 5.00	552 5.00	486 5.00	606 5.00	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report testsents the basit algement of XEXCO Laboratories. XEXCO Laboratories assumes no responsibility and makes no varianty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writted.

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Odessa Laboratory Director Brent Barron





- 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

BRL Below Reporting Limit.

RL Reporting Limit

* 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
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



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Project Name: Samson Livestock 30

Work Order #: 333728		Pı	roject ID:		L-1	24-0509
Lab Batch #: 760251	Sample: 760251-	I-BKS	Matr	ix: Water		
Date Analyzed: 05/27/2009	Date Prepared: 05/27/20	009	Analy	st: LATCO	OR	
Reporting Units: mg/L	Batch #: 1	BLANK /	BLANK SPI	KE REC	OVERY	STUDY
Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes	[A]	[8]	Result [C]	%R [D]	%R	
Chloride	ND	10.0	9.68	97	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



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Project Name: Samson Livestock 30

Work Order #: 333728 Analyst: WRU Lab Batch ID: 760281

Date Prepared: 05/27/2009 Batch #: 1

Sample: 760281-1-BKS

Project ID: L-124-0509 Date Analyzed: 05/27/2009 Matrix: Water

Units: mg/L		BLAN	K/BLANK S	PIKE / B	LANK S	PIKE DUPI	ICATE F	RECOVE	CRY STUD	Y	
TDS by SM2540C	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[0]	[E]	Result [F]	5				
Total dissolved solids	DN	1000	924	92	1000	972	26	5	80-120	30	

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: Samson Livestock 30

		Pr	oject ID:	L-124-0509	
te Prepared:	05/27/2009		Analyst:	LATCOR	
Batch #:	1		Matrix:	Water	
MAT	RIX / MAT	FRIX SPIKE	RECOV	ERY STU	DY
Parent Sample Result	Spike	Spiked Sample Result	%R	Control Limits	Flag
[A]	[B]	[C]	[D]	70 K	
52.0	100	150	98	80-120	
	te Prepared: Batch #: MAT Parent Sample Result [A] 52.0	te Prepared: 05/27/2009 Batch #: 1 MATRIX / MAT Parent Sample Spike Result Added [A] [B] 52.0 100	te Prepared: 05/27/2009 Batch #: 1 MATRIX / MATRIX SPIKE Parent Sample Spike Result Result Added [C] [A] [B] 52.0 100 150	te Prepared: 05/27/2009 Analyst: Batch #: 1 Matrix: MATRIX / MATRIX SPIKE RECOV Parent Spike Result Result Added [C] [D] [A] [B] 52.0 100 150 98	te Prepared: 05/27/2009 Analyst: LATCOR Batch #: 1 Matrix: Water MATRIX / MATRIX SPIKE RECOVERY STU Parent Sample Spike Result Result Added [C] [D] %R [A] [B] %R 52.0 100 150 98 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



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Sample Duplicate Recovery



Project Name: Samson Livestock 30

Work Order #; 333728

Lab Batch #: 760251			Project I	D: L-124-05	509
Date Analyzed: 05/27/2009 Date	Prepared: 05/2	27/2009	Analy	st: LATCOI	ર
QC- Sample ID: 333690-001 D	Batch #: 1	l	Matr	ix: Water	
Reporting Units: mg/L	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte .		[B]			
Chloride	52.0	52.7	1	20	
Lab Batch #: 760281					
Date Analyzed: 05/27/2009 Date	Prepared: 05/2	27/2009	Analy	st: WRU	
QC- Sample ID: 333727-001 D	Batch #: 1	l	Matr	ix: Water	
Reporting Units: mg/L	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TDS by SM2540C	Parent Sample	Sample		Control	
	Result [A]	Duplicate Result	RPD	Limits %RPD	Flag
Analyte	Result [A]	Duplicate Result [B]	RPD	Limits %RPD	Flag

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

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	Sample Receip	A Checklist			
1 Temperature of containes/ cooler?	<u> e eren</u> ti	Y	No		Amily inscelle
2 Shipping container in good condition	n 750 'S 12758'	Yés)	No		
s3 Custody Seals Intact on shipping co	ntainer/ cooler?	Yes	No	(Not Present)	
#4 Custody Seets intact on sample bott 5 Custody Seets intact on sa	ies/ container?	Ves	NO	<u>Not PresentS</u>	
5 Chan of Custory present /	ain of Custody?	Vesu I	No	CONTRACTOR	
77 Chain of Custody signed when relin	guished/ received?	Yas	No		
#8 Chain of Custody agrees with samp	le label(s)?	Yes	No	ID written on Cont / Lid,	6.5
#2 Container label(s) legible and intact	· · · · · · · · · · · · · · · · · · ·	Yes	No	Not Applicable	
#10 Sample matrix properties agree wi	th Chain of Custody?	Ves Van	NO		
#11 Containers supplied by CCOT	7	Xeg	No	See Below	
#13. Samples properly preserved?		Yes	No	See Below	100 March 100
#14 Sample bottles intact?		Nes :	No		
#15 Preservations documented on Cha	in of Custody?	Yes	No		
#10) Containers documented on Chain	of Custody?	Yes	No		
#17/#Sufficient sample amount for indica	ated test(s) /	(CCS Van	NO	See Below	<u></u>
#19 Subcontract of sample(s)?		Yes	No	Not Applicable	
#20 VOC samples have zero headspace	207 (All 1997)	Yes	No	Not Applicables	
	Variance Doc	umentation			
Contact	Contacted by			Date/Times	
Regarding					<u></u>
Corrective Action Takes					
Orden Standard Stand					
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Check all that Apply See	ettached e-mail/ fax)		The hage	h analysis	

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Analytical Report 325217

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R.T. Hicks Consultants, LTD

Project Manager: Dale Littlejohn

Samson Livestock 30

L-124-0209

19-FEB-09



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers: Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers: Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675 Norcross(Atlanta), GA E87429

> South Carolina certification numbers: Norcross(Atlanta), GA 98015

> North Carolina certification numbers: Norcross(Atlanta), GA 483

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19-FEB-09



Project Manager: Dale Littlejohn R.T. Hicks Consultants, LTD 901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104

Reference: XENCO Report No: 325217 Samson Livestock 30 Project Address: Lea Co., NM

Dale Littlejohn:

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 325217. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 325217 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,

Brent Barron, II Odessa Laboratory Manager

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Sample Cross Reference 325217

R.T. Hicks Consultants, LTD, Albuquerque, NM

Samson Livestock 30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1(s)	W	Feb-16-09 09:32		325217-001
MW-1 (d)	W	Feb-16-09 09:40		325217-002
MW-2 (s)	W	Feb-16-09 10:20		325217-003
MW-2 (d)	W	Feb-16-09 10:38		325217-004
MW-3 (s)	W	Feb-16-09 08:38		325217-005
MW-3 (d)	W	Feb-16-09 08:03		325217-006
MW-4 (s)	W	Feb-16-09 11:18		325217-007
MW-4 (d)	W	Feb-16-09 11:23		325217-008
MW-5 (s)	W	Feb-16-09 11:57		325217-009
MW-5 (d)	W	Feb-16-09 12:00		325217-010
	XENCO Laboratories			
--	-----------------------			
1997 1997 1997 1997 1997 1997				

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Project Id: L-124-0209 Contact: Dale Littlejohn Project Lacation: Lea Co., NM

Certificate of Analysis Summary 325217 R.T. Hicks Consultants, LTD, Albuquerque, NM

Project Name: Samson Livestock 30



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Date Received in Lab: Tue Feb-17-09 03:30 pm Report Date: 19-FEB-09

					Project Manager: 1	3rent Barron, II	
	Lab Id:	325217-001	325217-002	325217-003	325217-004	325217-005	325217-006
Analysis Dogustad	Field Id:	MW-I(s)	(d) MW-1	MW-2 (s)	MW-2 (d)	MW-3 (s)	MW-3 (d)
naisanhaw sistimuw	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Feb-16-09 09:32	Feb-16-09 09:40	Feb-16-09 10:20	Feb-16-09 10:38	Feb-16-09 08:38	Feh-16-09 08:03
Anions hv FPA 300	Extracted:						
	Analyzed:	Feb-19-09-01:00	Fcb-19-09 01:00	Fcb-19-09 01:00	Feb-19-09 01:00	Feb-19-09 01:00	Fcb-19-09 01:00
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	ng/L RL	mg/L RL	mg/L RL
Chloride		680 12.5	3850 50.0	17.7 5.00	2350 50.0	1820 50.0	11000 250
TDS hv SM2540C	Extracted:						
	Analyzed:	Feb-18-09 15:41	Feb-18-09 15:41	Feb-18-09 15:41	Feb-18-09 15:41	Feb-18-09 15:41	Feb-18-09 15:41
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total dissolved solids		1680 5.00	6140 5.00	418 5.00	5100 5.00	3220 5.00	15100 5.00
				-			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report reports the base largement of XEXCO Laboratories. XEXCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is fitting of the amount of this work order unless otherwise agreed to in writing. Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Odessa Laboratory Director Brent Barron

XENCO taboratories			

Project Id: L-124-0209 Contact: Dale Littlejohn Project Location: Lea Co., NM

.

Certificate of Analysis Summary 325217 R.T. Hicks Consultants, LTD, Albuquerque, NM Project Name: Samson Livestock 30



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Tue Feb-17-09 03:30 pm	19-FEB-09
Date Received in Lab:	Report Date:

					Project Manager: Brent Barron, II	
	Lah Id:	325217-007	325217-008	325217-009	325217-010	
Analycic Dogustad	Field Id:	MW-4 (s)	MW-4 (d)	MW-5 (s)	MW-5 (d)	
nates we have seen	Depth:					
	Matrix:	WATER	WATER	WATER	WATER	
	Sampled:	Feb-16-09 11:18	Feb-16-09 11:23	Feb-16-09 11:57	Feb-16-09 12:00	
Anions by EPA 300	Extracted:					-
	Analyzed:	Feb-19-09 01:00	Fcb-19-09 01:00	Fcb-19-09 01:00	Fcb-19-09 01:00	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Chloride		21.3 5.00	73.7 5.00	21.1 5.00	155 5.00	
TDS by SM2540C	Extracted:					
	Analyzed:	Feb-18-09 15:41	Feb-18-09 15:41	Feb-18-09 15:41	Feb-18-09 15:41	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Total dissolved solids		474 5.00	544 5.00	550 5.00	548 5.00	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout first analytical report reports in balance of XENCO Laboratories. EXECCO Laboratories assumes no responsibility markers on varianty to the end use of the data hereby presented. Our hability is limited to the anavunt invoiced for this work order unless otherwise agreed to in writing. Since 1990 Houston - Dallas - San Antonio - Austin - Tannpa - Miami - Latin Annerica - Atlanta - Corpus Christi

Odessa Laboratory Director Brent Barron

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- 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.
- * Outside XENCO's scope of NELAC Accreditation.

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Project Name: Samson Livestock 30

$\mathbf{WOLK OLUCI H}$. 323217	Work	Order #:	325217
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Project ID:

L-124-0209

Lab Batch #: 750052 Date Analyzed: 02/19/2009	Sample: 750052- Date Prepared: 02/19/20	1-BKS 009	Matr Analy	ix: Water	OR	
Reporting Units: mg/L	Batch #: 1	BLANK /	BLANK SP	IKE REC	COVERY S	STUDY
Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes	[A]	[B]	[C]	[D]	70 K	
Chloride	ND	10.0	10.3	103	90-110	

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



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Form 3 - MS Recoveries





Work Order #: 325217 Project ID: L-124-0209 Lab Batch #: 750052 Date Analyzed: 02/19/2009 Date Prepared: 02/19/2009 Analyst: LATCOR QC- Sample ID: 325202-001 S Batch #: 1 Matrix: Water MATRIX / MATRIX SPIKE RECOVERY STUDY Reporting Units: mg/L Spiked Sample Parent **Inorganic Anions by EPA 300** Control Sample Spike Result %R Limits Flag Result Added [C] [D] %R [A] [B] Analytes 100 80-120 Chloride 66.6 173 106

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



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Project Name: Samson Livestock 30

Work Order #: 325217

Lab Batch #: 750052			Project I	D: L-124-02	:09
Date Analyzed: 02/19/2009	Date Prepared: 02/	19/2009	Analy	st: LATCOF	ર
QC- Sample ID: 325202-001 D	Batch #:	1	Matr	ix: Water	
Reporting Units: mg/L	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Chloride	66.6	64.9	3	20	<u>.</u>
Lab Batch #: 750117		·			
Date Analyzed: 02/18/2009	Date Prepared: 02/	18/2009	Analy	st: WRU	
QC- Sample ID: 325202-001 D	Batch #:	1	Matr	ix: Water	
Reporting Units: mg/L	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
TDS by SM2540C	Parent Sample Result	2 Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	[r #]	[B]			
Total dissolved solids	760	812	7	30	

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

Page 9 of 11



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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	RT Hicks
Date/ Time:	2109 15:30
Lab 1D # :	325217
initiale:	

Sample Receipt Checklist

				Client Initia
#1	Temperature of container/ cooter?	(Yes)	No	4.0 °0
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chain of Custody?	(Yes)	No	
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	Yes)	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	Yes	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	(es)	No	
#15	Preservations documented on Chain of Custody?	Yes	No	
#16	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18	All samples received within sufficient hold time?	Yes	No	See Below_
#19	Subcontract of sample(s)?	Yes	No	Not Applicable
#20	VOC samples have zero headspace?	Yes	No	Not Applicable

Variance Documentation

Date/ Time:

Contact

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Regarding:

Corrective Action Taken:

Check all that Apply:

See attached e-mail/ fax

Contacted by:

Client understands and would like to proceed with analysis Cooling process had begun shortly after sampling event

Appendix C Graphs - Historic Ground Water Data

State F

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142 Albuquerque, NM 87104



MW-1(Shallow) Dissolved Solids vs Elevation

MW-1(Deep) Dissolved Solids vs Elevation





MW-2 (Deep) Dissolved Solids vs Elevation



Sampling Date



MW-3 (Shallow) Dissolved Solids vs Elevation

MW-3 (Deep)





MW-4 (Deep) Dissolved Solids vs Elevation



C-4



MW-5 (Deep) Dissolved Solids vs Elevation



C-5



Average Values of Shallow Wells Dissolved Solids vs Elevation

> Average Values of Deep Wells Dissolved Solids vs Elevation

