

The City of Ballinger

September 23, 2013

Mr. John Grant
Region F Water Planning Group Chair
Colorado River Municipal Water District
400 E. 24th Street
Big Spring, Texas 79720

**Re: City of Ballinger 2014 DWSRF Water System Improvements Project
Request for a Waiver to Amending the Region F Regional Water Plan**

Dear Mr. Grant:

The City of Ballinger (City) and Enprotec / Hibbs & Todd, Inc. (eHT) are working together to develop an alternative groundwater supply project, funded by the Texas Water Development Board (TWDB) through its Drinking Water State Revolving Fund (DWSRF) program. The City and eHT applied for funding for planning, acquisition, design and construction funding in the TWDB's FY 2014 DWSRF Intended Use Plan (IUP). The proposed water supply project is anticipated to include completion of new groundwater wells, construction of a groundwater storage and pumping system, construction of a groundwater transmission pipeline from the well field to the Ballinger WTP, and construction of additional treatment improvements at the City's existing water treatment plant (WTP). While it is the City's opinion that the proposed project meets the intent of the 2011 Region F Regional Water Plan (RWP) with regard to conjunctive use of both surface water and groundwater supplies, conjunctive use is not currently listed as one of the recommended water supply strategies for the City of Ballinger. It is our understanding that the primary method to address this issue is currently to request a minor amendment to the RWP to update the recommended strategies for the City in the RWP document. However, due to the timing of the project and the TWDB's timeline for approval of funding commitment of the project, it does not appear that there is sufficient time to go through a formal amendment of the RWP. For this reason, the City is requesting a RWP amendment waiver from Region F with the understanding that the City's proposed project is in compliance with the overall conjunctive use strategy approved for use within the 2011 Region F RWP.

The City and eHT have coordinated over the past year with a property owner in Coke County to evaluate the potential feasibility of developing a long-term groundwater supply on the owner's existing property. Since the summer of 2012, multiple hydraulic studies and water quality tests have been completed to determine the anticipated treatability and long-term yield of the potential groundwater. The results from the various tests showed that the potential groundwater supply appears to have a viable water production capability of up to 1 million gallons per day (mgd) for as much as 30 years. However, the water quality testing results showed that the available groundwater cannot be used for drinking water purposes without significant advanced treatment, primarily to remove total dissolved solids (TDS), chloride and sulfate to meet state and federal drinking water standards. Since the City is currently installing a reverse osmosis (RO) treatment system, the City feels comfortable with expanding its RO system to be able to fully utilize the groundwater volume that appears to be available on the proposed property.

At the onset of discussions between the City and the property owner in the summer of 2012, the original proposed water supply method was for the property owner to develop wells on its property and sell either treated or untreated groundwater to the City. Since the summer of 2012, the City and the property owner have had additional discussions regarding the possibility of the City purchasing the groundwater producing property outright. Subsequently, the City and eHT met with the TWDB and determined that acquisition of the property could be eligible for incorporation into a DWSRF funding application. Following coordination with TWDB, the City and the property owner have had further discussions regarding the City moving forward with purchasing the existing property, pending funding availability from TWDB. In preparation for the sale, the property has been appraised in accordance with the requirements of The Uniform Appraisal Standards for Federal Land Acquisition, and 49 CFR 24.102, 103 & 104, including the completion of a review appraisal by qualified reviewing appraiser. The City submitted its full 2014 DWSRF funding application in August 2013 and anticipates receiving funding for the project in March 2014.

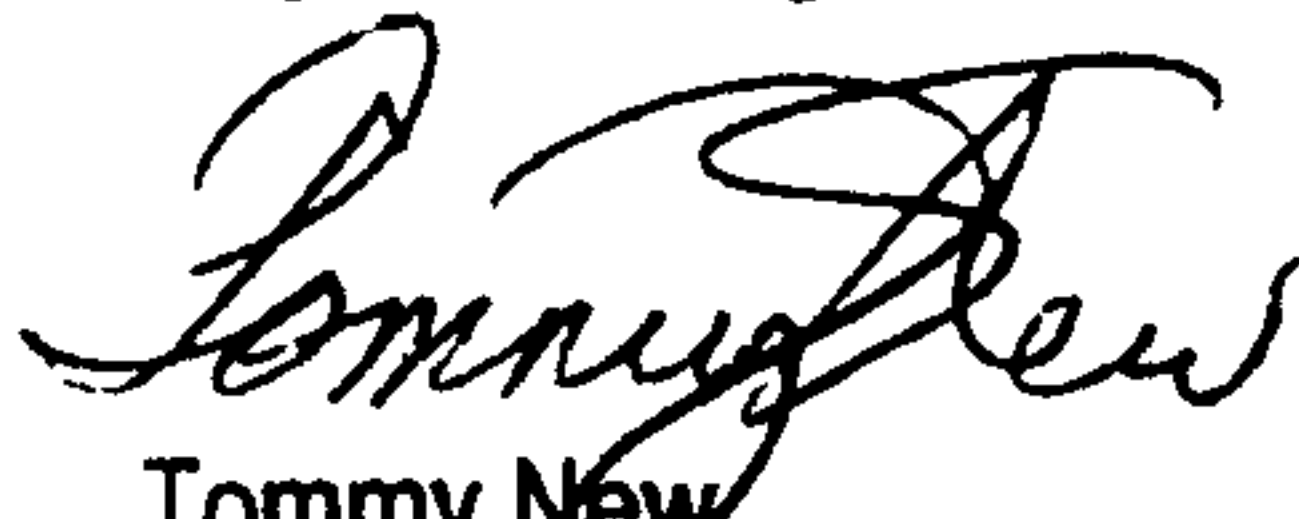
Parallel to discussions on the proposed property acquisition, the City and the current property owner have been coordinating with the Coke County Underground Water Conservation District (CCUWCD) to determine what permitting requirements will be necessary to complete the proposed wells to an irrigation-level standard (since all of the water will be treated at the City's existing water treatment plant), as well as determining any limitations to exporting groundwater from Coke County to Runnels County. The City has reviewed the CCUWCD's rules and requirements in detail and is currently in the process of submitting the final well permit application for approval by CCUWCD.

The proposed project is anticipated to provide an alternative water supply source for Ballinger, which used in conjunction with the City's current supplies from Lake Ballinger and O.H. Ivie, should provide the City with water at all times, even as nearby lake levels continue to decline. It is the City's opinion that the proposed project follows the intent of conjunctive use as defined in the 2011 Region F RWP, though it is not clearly identified as a recommended water supply strategy for the City in the RWP at this time. Due to the project timing, we respectfully request your favorable consideration and approval of a waiver to the minor amendment requirement, with the understanding that the proposed project will be incorporated into the forthcoming 2016 Region F RWP as one of the newly identified recommended strategies for the City of Ballinger.

If you have any further questions regarding the proposed project, please feel free to contact either me or Scott Hay at eHT (325-698-5560). We also anticipate attending an upcoming Region F planning meeting, to be available to respond to any questions you or the rest of the RWP Board might have regarding this matter. Thank you for your assistance in this matter.

Sincerely,

City of Ballinger


Tommy New
City Manager

End: Region F Waiver Request & New Water Management Strategy Information Sheet
Water Quality Data
Preliminary Engineering Feasibility Report for the Project

c: Scott D. Hay, P.E., Enprotec / Hibbs & Todd, Inc., P.O. Box 3097, Abilene, TX 79604

DRAFT

NEW WATER MANAGEMENT STRATEGY INFORMATION
(Additional information can be attached separately if needed)

ENTITY: City of Ballinger

NAME OF STRATEGY: Conjunctive use of groundwater with existing surface water supplies.

DATE: 9-23-13

Please provide a brief description of the water management strategy and why this strategy is needed at this time.

The proposed conjunctive use of groundwater is necessary to supplement the City's dwindling surface water supplies from Lake Ballinger and O.H. Ivie Reservoir.

Source of water (include aquifer name and general location if groundwater): Shallow alluvial and terraced deposits possibly from the Clear Fork Group near the City of Bronte, Coke County, Texas.

Is the proposed source of water identified in the current regional water plan for the proposed use?:
No

Total amount of new water supply (acre-feet): 840 - 1,120 acre-feet annually

If purchased water, provide the name of the seller: N/A

List of users and potential users of water from this water management strategy: City of Ballinger and its wholesale customers (City of Rowena and North Runnels WSC).

Please provide the following information as required for regional water planning:

1. Capital Cost \$10,495,000 including land acquisition
2. Reliability 0.75 - 1.0 MGD for up to 30 years
3. Quality See attached water quality testing results.
4. Environmental impacts The project will not result in significant negative impacts on the quality of the human or natural environments. The scope entails minor upgrading and no expansion of system capacity.
5. Impacts to rural and agricultural areas No changes are proposed for current land use. The proposed pipeline will be located within the already disturbed TxDOT R.O.W. along Hwy 158.
6. Impacts to natural resources Proposed well production will come from existing groundwater resources.
7. Impacts to other water management strategies None.

Please provide any other information pertinent to this strategy: Copy of Preliminary Engineering Feasibility Report (PEFR) submitted to TWDB with funding application is attached.

Initial Well Water Quality Data

Well Water Quality Data Provided by Owner

Constituent	Well No. 1	Well No. 2	Well No. 4	Well No. 5	Well No. 9
Total Alkalinity (mg/L)	212	180	232	308	212
Total Hardness (mg/L)	1,870	1,950	1,640	700	1,890
Calcium Hardness (mg/L)	1,920	1,760	1,310	670	1,280
pH	7.18	7.20	7.14	7.22	7.34
Specific Conductance (uS/cm)	2,980	2,800	2,150	1,200	2,810
Nitrate (mg/L)*	14.52	15.40	9.24	8.36	13.64
Chloride (mg/L)	156	136	120	64	160
Sulfate (mg/L)	1,675	7,750	1,875	425	2,225
Bicarbonate (mg/L)*	258.6	219.6	283	375.8	258.6
Calcium (mg/L)*	768	704	524	268	512
Magnesium (mg/L)*	0	46.4	80.5	7.3	148.8
Sodium and Potassium (mg/L)*	146.3	2,991.9	331.8	67.9	402.8
Total Dissolved Solids (mg/L)*	2,086	1,960	1,505	840	1,967
Total Coliform (CFU/100 ml)	0	0	0	0	0
Fecal Coliform (CFU/ 100 ml)	0	0	0	0	0

*Note: Constituents were noted as "calculated" in the water analysis data sheets.

GENERAL EXPLANATION OF WATER ANALYSIS REPORT

PARAMETER	SOURCE OF CAUSE	SIGNIFICANCE	LIMITS	TREATMENT
pH	pH is lowered by acids; acid-generating salts and free carbon dioxide; pH is raised by carbonates, bicarbonates, hydroxides, phosphates, silicates and borates.	pH is a measure of the acid qualities of water; a pH of 7.0 means a neutral solution; water with a pH below 7.0 is normally harmful in that it may dissolve iron from pumping facilities and mains and produce a "red water" problem.	(acceptable range = 6.5 to 8.5) 7.0+ = alkalinity 7.0 - = acidity	Chemical Addition
Conductivity	Is an indicator of the dissolved mineral content of water; mostly calcium carbonate along with other dissolved salts.	Is a measure of the electrical Conductivity of water and varies with the amount of dissolved solids.	0 - 0.5 mS/cm Good 0.5 - 1.5 mS/cm Normal >1.5 mS/cm High	
Total Hardness (CaCO ₃ - calcium carbonate such as lime and chalk)	Caused by the presence of calcium and magnesium.	Hard water consumes soap before a lather will form and creates scale in boilers, water heaters, and pipes.	0 - 60 mg/L soft 61-120 mg/L moderate 121-180 mg/L hard >181 mg/L very hard	Water Softener
Calcium and Magnesium	Dissolved from soil and rock, especially from limestone, dolomite and gypsum. Calcium and Magnesium are found in large quantities in sea water.	Cause most of the hardness and scale-forming properties of water which for example, consumes soap; water low in calcium and magnesium is desirable in the electroplating, tanning, dyeing and textile manufacturing industries as well as for boiler use.	No Standards Established	
Alkalinity	Indicates the presence of bicarbonates, carbonates and hydroxides (See pH.)	Information on alkalinity is useful in water treatment, softening and control of corrosion.	No Standards Established	
Carbonate (CO ₃) and Bicarbonate (HCO ₃)	Formed from carbonated rock, such as limestone and dolomite.	Produces alkalinity and forms scale in hot water facilities as a result of hardness in combination with calcium and magnesium; bicarbonates of sodium produces "burp water".	No Standards Established	
Sulfate	Dissolved from rock and soil containing gypsum, iron sulfides and other sulfur compounds; commonly present in industrial wastes.	Sulfate in water containing calcium forms hard scale in steam boilers; in large amounts sulfate can give a bitter taste to water and/or have a laxative effect.	300 mg/L *MC Limit	Reverse Osmosis
Chloride	Dissolved from rock and soil; found in large amounts in oil field brine, sea water and industrial brine.	When combined with sodium, gives salty taste to drinking water and may increase the corrosiveness of water.	300 mg/L *MC Limit	Reverse Osmosis
Nitrate	Produced by decaying organic matter, sewage, fertilizers and nitrates in the soil.	High concentrations may suggest pollution; water of high nitrate content may cause methemoglobinemia (blue babies) and should not be used in infant feeding; some animals such as ruminants (cudchewers) can be poisoned by nitrate if the concentration is high; NO ₃ encourages growth of algae and other organisms which may produce undesirable tastes and odor.	10 mg/L as N *MC Limit 44 mg/L as NO ₃	Reverse Osmosis
Fluoride	Dissolved in small quantities from rock and soil. Fluoride may in some cases actually be added to drinking water supplies.	May cause mottling of the teeth in children depending on the quantity and temperature average per year. In proper amounts may reduce cavities	0-0.6 mg/L Good 0.6-2.0 mg/L Optimum 2.0-4.0 mg/L Mottling of teeth >4.0 mg/L Possible health risk	Reverse Osmosis
Iron	Dissolved from rock and soil; may also come from iron pipes, pumps and other equipment if low pH water is present.	On exposure to air, iron in ground water oxidizes to reddish-brown (red water) which may stain laundry and utensils; large quantities can cause unpleasant taste and encourage the growth of iron bacteria.	0.3 mg/L *MC Limit	Iron Filtration
Total Dissolved Solids	Dissolved mineral content from various rock formations	Considered a general indicator of the quality of water.	>1000 mg/L *MC Limit	Reverse Osmosis

SKG ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903


PHONE: 325.655.1288
FAX: 325.657.8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Big Well
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0716
COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	204	mg/l. (as CaCO ₃)
TOTAL HARDNESS	2060	mg/l. (as CaCO ₃)
CALCIUM HARDNESS	1830	mg/l. (as CaCO ₃)
pH VALUE	7.23	Std. Units
SP. CONDUCTANCE	2910	micromhos/cm
NITRATES (AS N)	3.70	mg/L (NO ₃ -N)
NITRATES*	16.28	mg/L (NO ₃)
CHLORIDES	148	mg/L (Cl)
SULFATES	1500	mg/l. (SO ₄)
BICARBONATES*	248.9	mg/L (HCO ₃)
CALCIUM*	732.0	mg/L (Ca)
MAGNESIUM*	56.1	mg/L (Mg)
SODIUM AND POTASSIUM*	0.0	mg/l. (Na & K)
DISSOLVED SOLIDS*	2037	mg/l.

*determined by calculation

TOTAL COLIFORM	Negative	org./100ml
FECAL COLIFORM	Negative	org./100ml


Stephanie Cheatham
Lab Manager

SKG ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

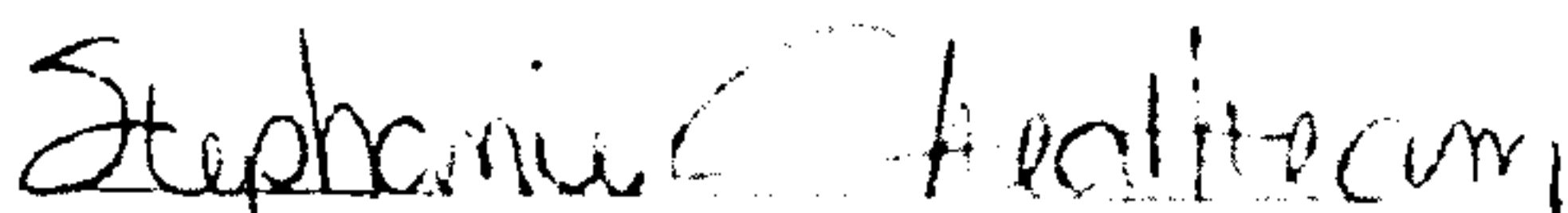
PHONE: 325 655 1288
FAX 325 657 8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #1
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0717
COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	212	mg/L (as CaCO ₃)
TOTAL HARDNESS	1870	mg/L (as CaCO ₃)
CALCIUM HARDNESS	1920	mg/L (as CaCO ₃)
pH VALUE	7.18	Std. Units
SP. CONDUCTANCE	2980	micromhos/cm
NITRATES (AS N)	3.30	mg/L (NO ₃ -N)
NITRATES*	14.52	mg/L (NO ₃)
CHLORIDES	156	mg/L (Cl)
SULFATES	1675	mg/L (SO ₄)
BICARBONATES*	258.6	mg/L (HCO ₃)
CALCIUM*	768.0	mg/L (Ca)
MAGNESIUM*	0.0	mg/L (Mg)
SODIUM AND POTASSIUM*	146.3	mg/L (Na & K)
DISSOLVED SOLIDS*	2086	mg/L

*determined by calculation

TOTAL COLIFORM	Negative	org./100ml
FECAL COLIFORM	Negative	org./100ml


Stephanie Cheatham
Lab Manager

SKG ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

PHONE: 325 655 1288
FAX: 325 657 8189

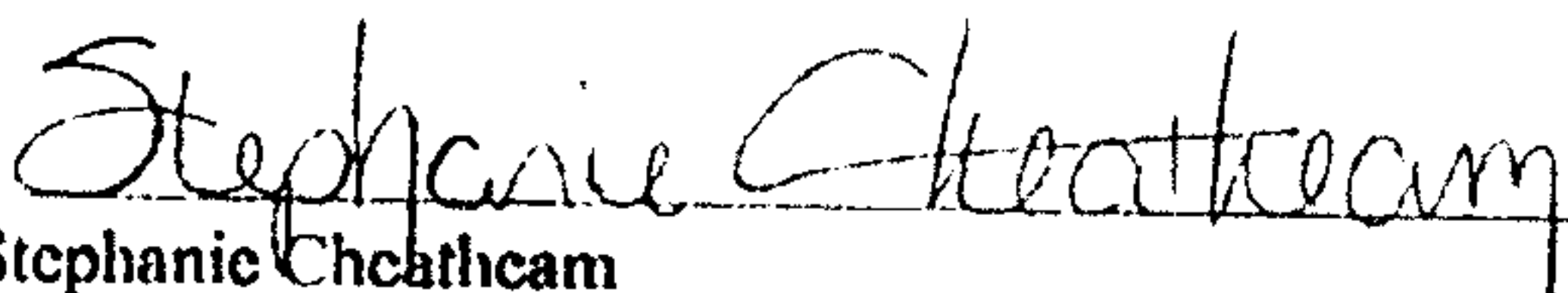
CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #2
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0718

COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	180	mg/l. (as CaCO ₃)
TOTAL HARDNESS	1950	mg/l. (as CaCO ₃)
CALCIUM HARDNESS	1760	mg/L (as CaCO ₃)
pH VALUE	7.20	Std. Units
SP. CONDUCTANCE	2800	micromhos/cm
NITRATES (AS N)	3.50	mg/L (NO ₃ -N)
NITRATES*	15.40	mg/L (NO ₃)
CHLORIDES	136	mg/L (Cl)
SULFATES	7750	mg/L (SO ₄)
BICARBONATES*	219.6	mg/L (HCO ₃)
CALCIUM*	704.0	mg/L (Ca)
MAGNESIUM*	46.4	mg/L (Mg)
SODIUM AND POTASSIUM*	2991.9	mg/l. (Na & K)
DISSOLVED SOLIDS*	1960	mg/l.

*determined by calculation

TOTAL COLIFORM Negative org./100ml
FECAL COLIFORM Negative org./100ml


Stephanie Cheatham
Lab Manager

SKG ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

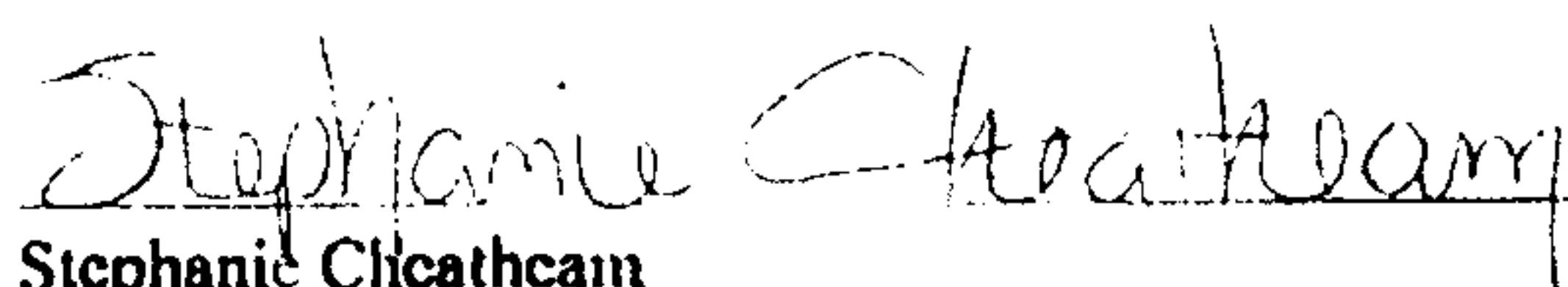
PHONE: 325.655.1288
FAX 325.657.8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #4
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0719
COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	232	mg/l. (as CaCO ₃)
TOTAL HARDNESS	1640	mg/l. (as CaCO ₃)
CALCIUM HARDNESS	1310	mg/l. (as CaCO ₃)
pH VALUE	7.14	Std. Units
SP. CONDUCTANCE	2150	micromhos/cm
NITRATES (AS N)	2.10	mg/l. (NO ₃ -N)
NITRATES*	9.24	mg/l. (NO ₃)
CHLORIDES	120	mg/L (Cl)
SULFATES =	1875	mg/L (SO ₄)
BICARBONATES*	283.0	mg/L (HCO ₃)
CALCIUM*	524.0	mg/l. (Ca)
MAGNESIUM*	80.5	mg/L (Mg)
SODIUM AND POTASSIUM*	331.8	mg/l. (Na & K)
DISSOLVED SOLIDS*	1505	mg/L.

*determined by calculation

TOTAL COLIFORM	Negative	org./100ml
FECAL COLIFORM	Negative	org./100ml


Stephanie Clatcham
Lab Manager

SKG
ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

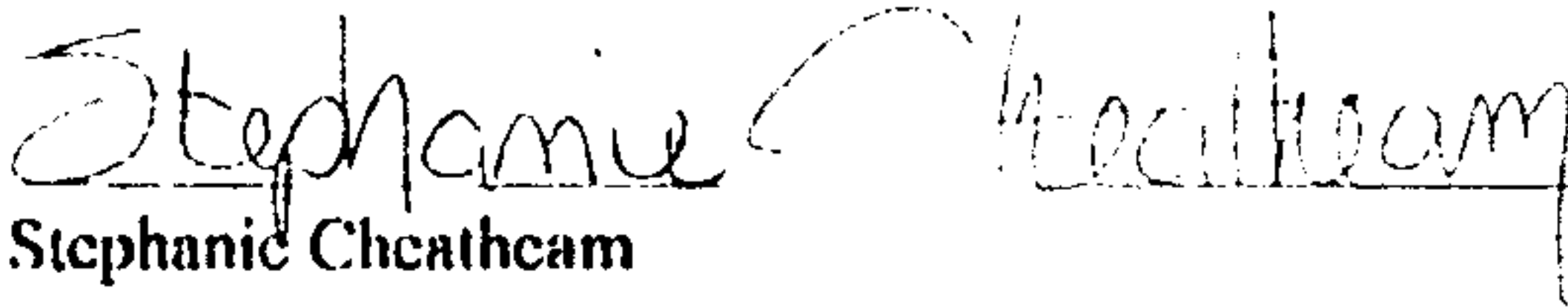
PHONE: 325.655.1288
FAX 325.657.8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #5
DATE COLLECTED: 4/11/12 COLLECTION POINT: NR
DATE RECEIVED: 4/12/12 COLLECTED BY: Pat Lange
LAB NUMBER: 12-0720 DATE REPORTED: 4/23/12

TOTAL ALKALINITY =	308	mg/L (as CaCO ₃)
TOTAL HARDNESS =	700	mg/L (as CaCO ₃)
CALCIUM HARDNESS =	670	mg/L (as CaCO ₃)
pH VALUE =	7.22	Std. Units
SP. CONDUCTANCE	1200	micromhos/cm
NITRATES (AS N)	1.90	mg/L (NO ₃ -N)
NITRATES* =	8.36	mg/L (NO ₃)
CHLORIDES =	64	mg/L (Cl)
SULFATES =	425	mg/L (SO ₄)
BICARBONATES*	375.8	mg/l. (HCO ₃)
CALCIUM* =	268.0	mg/l. (Ca)
MAGNESIUM*	7.3	mg/L (Mg)
SODIUM AND POTASSIUM*	67.9	mg/l. (Na & K)
DISSOLVED SOLIDS* =	840	mg/L

*determined by calculation

TOTAL COLIFORM =	Negative	org./100ml
FECAL COLIFORM	Negative	org./100ml


Stephanie Cheatham
Lab Manager

SKG ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

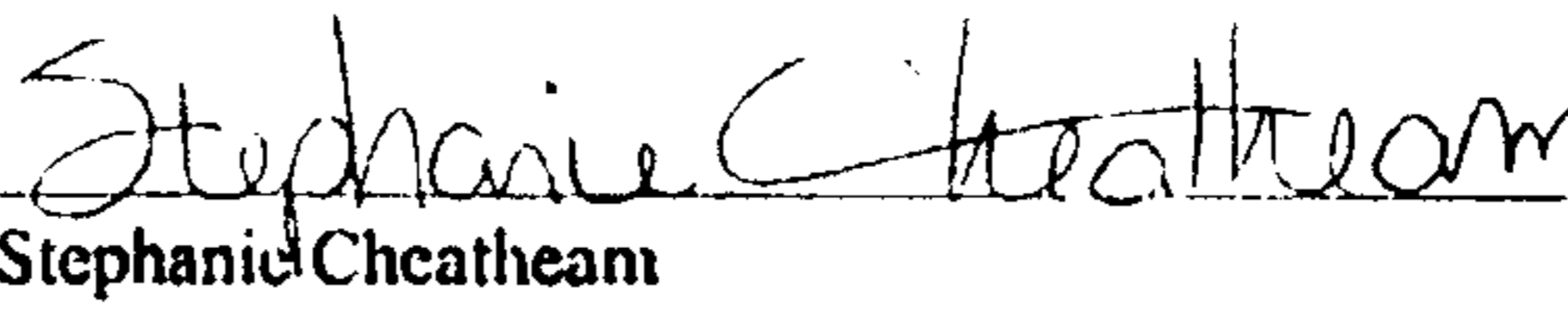
PHONE: 325 655 1288
FAX: 325 657 8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #9
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0721
COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	212	mg/L (as CaCO ₃)
TOTAL HARDNESS	1890	mg/L (as CaCO ₃)
CALCIUM HARDNESS	1280	mg/L (as CaCO ₃)
pH VALUE	7.34	Std. Units
SP. CONDUCTANCE	2810	micromhos/cm
NITRATES (AS N)	3.10	mg/L (NO ₃ -N)
NITRATES*	13.64	mg/L (NO ₃)
CHLORIDES	160	mg/L (Cl)
SULFATES	2225	mg/L (SO ₄)
BICARBONATES*	258.6	mg/L (HCO ₃)
CALCIUM*	512.0	mg/L (Ca)
MAGNESIUM*	148.8	mg/L (Mg)
SODIUM AND POTASSIUM*	402.8	mg/L (Na & K)
DISSOLVED SOLIDS*	1967	mg/L

*determined by calculation

TOTAL COLIFORM	Negative	org./100ml
FECAL COLIFORM	Negative	org./100ml


Stephanie Cheatham
Lab Manager

SKG
ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

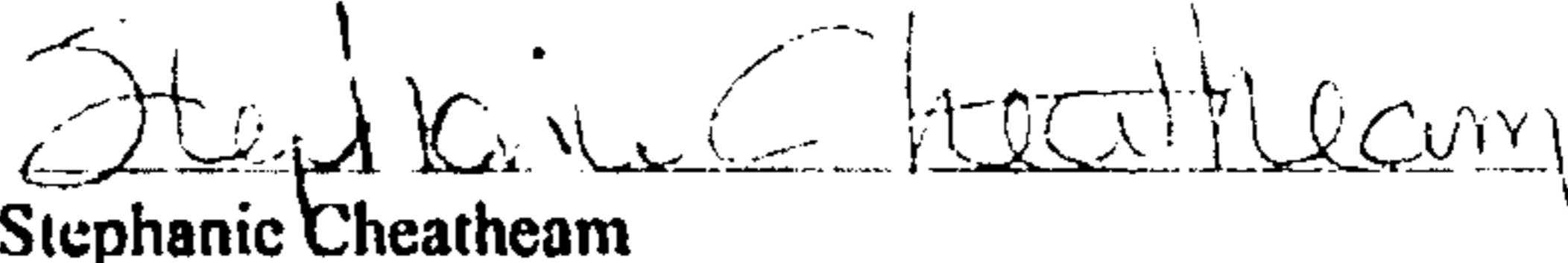
PHONE: 325.655.1288
FAX 325.657.8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #13
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0722
COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	216	mg/L (as CaCO ₃)
TOTAL HARDNESS	1770	mg/L (as CaCO ₃)
CALCIUM HARDNESS	1900	mg/L (as CaCO ₃)
pH VALUE	7.06	Std. Units
SP. CONDUCTANCE	3500	micromhos/cm
NITRATES (AS N)	3.50	mg/L (NO ₃ -N)
NITRATES*	15.40	mg/L (NO ₃)
CHLORIDES	228	mg/L (Cl)
SULFATES	2500	mg/L (SO ₄)
BICARBONATES*	263.5	mg/L (HCO ₃)
CALCIUM*	760.0	mg/L (Ca)
MAGNESIUM*	-31.7	mg/L (Mg)
SODIUM AND POTASSIUM*	636.2	mg/L (Na & K)
DISSOLVED SOLIDS*	2450	mg/L

*determined by calculation

TOTAL COLIFORM	Negative	org./100ml
FECAL COLIFORM	Negative	org./100ml


Stephanic Cheatham
Lab Manager

SKG ENGINEERING, LLC

SURVEYING • ENVIRONMENTAL • LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903


PHONE: 325.655.1288
FAX: 325.657.8189

CLIENT: USA International Exploration LLC
ADDRESS: 1514 E. Palm Valley Blvd., Round Rock, Texas 78665
SOURCE: Well #14
DATE COLLECTED: 4/11/12
DATE RECEIVED: 4/12/12
LAB NUMBER: 12-0723
COLLECTION POINT: NR
COLLECTED BY: Pat Lange
DATE REPORTED: 4/23/12

TOTAL ALKALINITY	204	mg/L (as CaCO ₃)
TOTAL HARDNESS	1820	mg/L (as CaCO ₃)
CALCIUM HARDNESS	1740	mg/L (as CaCO ₃)
pH VALUE =	7.16	Std. Units
SP. CONDUCTANCE	3230	micromhos/cm
NITRATES (AS N)	3.00	mg/L (NO ₃ -N)
NITRATES*	13.20	mg/L (NO ₃)
CHLORIDES	156	mg/L (Cl)
SULFATES	2500	mg/L (SO ₄)
BICARBONATES*	248.9	mg/L (HCO ₃)
CALCIUM*	696.0	mg/L (Ca)
MAGNESIUM*	19.5	mg/L (Mg)
SODIUM AND POTASSIUM*	560.3	mg/L (Na & K)
DISSOLVED SOLIDS*	2261	mg/L

*determined by calculation

TOTAL COLIFORM : Negative org./100ml
FECAL COLIFORM : Negative org./100ml


Stephanie Cheatham
Lab Manager