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By PSTB at 9:32 am, Feb 12, 2026

February 11, 2026

Ms. Renee Romero
New Mexico Environment Department
Petroleum Storage Tank Bureau
1914 West Second Street
Roswell, New Mexico 88201-1712

Re: Extraction Well Restoration and Rehabilitation Pilot Testing
Former Y Station, 721 Commerce Way, Clovis, New Mexico
Facility #53742, Release ID #4746, WPID #4418

Dear Ms. Romero:

Daniel B. Stephens & Associates, Inc. (DBS&A) is pleased to submit this letter report documenting extraction well restoration and rehabilitation pilot testing at the subject site (the site).

Pilot Test Activities

Coats Pump & Supply, Inc. (Coats) mobilized to the site on June 18, 2025 to collect a water sample from well RW-4. However, the pump was inoperable and no sample was collected. Coats remobilized to the site on August 13, 2025, and successfully collected a sample from well RW-4, which was then submitted to Cotey Chemical Corporation (Cotey Chemical) for laboratory analysis.

The laboratory results for the well RW-4 water sample are provided in Attachment 1. The analysis indicated elevated levels of conductivity, total dissolved solids (TDS), salinity, and hardness. The bacteriological test indicated high aggressivity, with high concentrations of iron-related bacteria, sulfate-reducing bacteria, and slime-forming bacteria. Cotey Chemical recommended use of Liquid Acid Descaler for rehabilitation of this well.

On October 21, 2025, Coats conducted a pilot test of well restoration and rehabilitation strategies at well RW-4. Field screening of pH levels was completed before and after cleaning occurred. The well screen was physically brushed and dosed with 2.5 gallons of Liquid Acid Descaler. Coats calculated the dosing amount using the water well calculator on the Cotey Chemical website. These cleaning fluids were pumped, contained, and disposed of through the on-site groundwater treatment system. The pump and drop pipe were cleaned and reinstalled.

Results and Recommendations

The pump was cycling at unexpected depth intervals due to transducer issues; therefore, pump test data were not collected immediately following pump reinstallation.

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Following repair of the transducer on November 5, 2025, DBS&A confirmed that well RW-4 was consistently pumping at the desired production rate of 4 gallons per minute (gpm). Over the course of the second quarter, the flow rate at this well decreased to 2 gpm. Cotey Chemical requested a second sample from this well and issued a revised recommendation based on the observed results (Attachment 2).

DBS&A recommends that well restoration and rehabilitation be implemented on a quarterly basis at all groundwater extraction wells to reduce scaling and biofouling. DBS&A implemented the revised Cotey Chemical strategy at wells RW-1, RW-3, RW-4, MW-11, and MW-12 on February 2 through 5, 2026. The remaining wells were not treated due to pump issues that are currently being resolved. A summary will be provided in the first quarterly report.

Closing

DBS&A intends to invoice the full approved amount for Deliverable ID #4418-2. If you have any questions or require additional information, please contact us at (505) 822-9400.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.



Grace Herrmann P.E.
Project Engineer

GH/ko
Attachments

Attachment 1
Cotey Chemical Water
Analysis Report #1

Well Sample Data Sheet					
Please provide as much of the following information as possible for each well sampled.					
Well Name: RW-4					
Well Owner: DBSA & NMED					
Location (longitude and latitude if possible): 34.417795, -103.14227					
Sample collected by: Chance Coats				Date collected: 8/13/25	
Where was the sample collected? (how close to source)			At well head		
What is the well's use? Remediation of Hydrocarbons					
Well Design					
Total Depth		370		Age of Well 6 years	
Borehole Diameter		Original Specific Capacity (gpm/ft of drawdown): 8			
Casing Diameter		Current Specific Capacity (gpm/ft of drawdown):			
Screen Diameter		4"		Original Production: 8	
Screen Diameter		NA		Current Production:	
Static Water Level		334		Any galvanized parts in well? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Well Completion		<input checked="" type="checkbox"/> screened <input type="checkbox"/> open		Multiple Screened Zones? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Gravel Pack		<input checked="" type="checkbox"/> yes <input type="checkbox"/> no		Total Length of Screened Zones. 291-361 Slot 0.020"	
Type of Pump		Submersible			
Type of Lubricant					
Placement of Pump					
Well History					
Any cloudiness or discoloration? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			If yes, describe:		
Any noticeable odors? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			If yes, describe:		
Problem: Well is used to treat for hydrocarbons- Bio Fouling in well					
Has Well Been Treated Before? How Long Ago? No					
For What Reason?					
Type of Treatment?			<input type="checkbox"/> mechanical <input type="checkbox"/> chemical <input type="checkbox"/> combined		
What Was Used?					
Was Problem Resolved? <input type="checkbox"/> yes <input type="checkbox"/> no			Comments:		
Was Pump Serviced? <input type="checkbox"/> yes <input type="checkbox"/> no			How Long Ago?		
Type of Test - Report Data					
Distributor you typically buy from: 2M or Simmons				Sample Data	
				<input checked="" type="checkbox"/> Water from Casing (sample collected)	
Send Report to: Chance Coats				immediately; no purging)	
				<input type="checkbox"/> Water from Aquifer (sample collected)	
Address: PO Box 1210, Dexter NM 88230				after purging at least 3 well volumes)	
				<input type="checkbox"/> Scale; Location:	
Phone Number: 575-496-9460				Fax #:	
Email Address: chance.coats@coatspump.com					

Final report will contain data from water analysis, interpretation of data, and recommendations for well rehabilitation.



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Cotey Chemical Water Analysis Report

To: Chance Coats Laboratory #: 750
 Company: Coats Pump Sample Received: 7/23/25
 Sample ID: RW4 Results Reported: 8/27/25
 Subject: To perform chemical and bacterial analysis of water sample.

	mg/L		mg/L
pH	6.8		
Conductivity (µS/cm)	1065		
ORP (mV)	84	Ferrous Iron (Fe ²⁺)	0.06
TDS	524	Ferric Iron (Fe ³⁺)	0.64
Salinity (ppt)	0.524	Total Iron	0.70
Phenolphthalein Alkalinity	0	Manganese	1.7
Total Alkalinity	180		
Hydroxide Alkalinity	0		
Carbonate Alkalinity	0		
Bicarbonate Alkalinity	180	Phosphates	1.34
Total Hardness	476		
Carbonate (temporary) Hardness	180	Nitrate	0.70
Non Carbonate (permanent) Hardness	0	Sulfate	20
Calcium Hardness as CaCO ₃	258		
Magnesium Hardness as CaCO ₃	218		
Langelier Saturation Index	-0.49		

Red indicates area of interest/concern. Green indicates below normal value.

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pH: measures the concentration of hydrogen (hydronium) ions in a solution. Indicates the acid/base nature of a solution. pH = 7 neutral, pH > 7 basic, pH < 7 acidic. A change of 1 pH unit is a 10 fold change in hydrogen (hydronium) ions.

Conductivity: measures the capacity of ions in the solution to carry electrical current. The unit, micro Siemens, is the reciprocal of the micro ohm (resistance).

ORP: (Oxidation Reduction Potential) measure of the tendency of the solution to either gain or lose electrons when it is subject to change. Oxidation reduction potential (ORP) can be used for water system monitoring with the benefit of a single-value measure of the disinfection potential, showing the activity of the disinfectant rather than the applied dose. For example, E. coli, Salmonella, Listeria and other pathogens have survival times of under 30 s when the ORP is above 665 mV, compared against >300 s when it is below 485 mV. A study was conducted comparing traditional parts per million chlorination reading and ORP in Hennepin County, Minnesota. The results of this study argue for the inclusion of ORP above 650mV in local health codes.

TDS (Total Dissolved Solids) a measure of the combined content of all inorganic and organic substances contained in a liquid in molecular, ionized or micro-granular (colloidal sol) suspended form. High TDS levels generally indicate hard water. The most common chemical constituents are calcium, phosphates, nitrates, sodium, potassium and chloride, which are found in nutrient runoff, general stormwater runoff and runoff from snowy climates where road de-icing salts are applied. The chemicals may be cations, anions, molecules or agglomerations on the order of one thousand or fewer molecules, so long as a soluble micro-granule is formed. More exotic and harmful elements of TDS are pesticides arising from surface runoff. Certain naturally occurring total dissolved solids arise from the weathering and dissolution of rocks and soils. The United States has established a secondary water quality standard of 500 mg/l to provide for palatability of drinking water.

Salinity: dissolved salt content of water. Unit: parts per thousand. In groundwater salinity is equal to TDS (1000 x less due to unit conversion from ppm to ppt)

Phenolphthalein Alkalinity: Alkalinity is defined as the measure of the water capacity to neutralize acids. Phenolphthalein Alkalinity is measured to P end point (pH 8.3). If the pH of the solution is below 8.3, the phenolphthalein alkalinity is zero.

Total Alkalinity: Alkalinity is defined as the measure of the water capacity to neutralize acids. Total Alkalinity is measured to M (methyl orange) end point (pH 4.2).

Hydroxide Alkalinity: Alkalinity is the result of three ions: hydroxide (OH⁻), carbonate (CO₃²⁻), and bicarbonate (HCO₃⁻). Hydroxide alkalinity is calculated based on the total and phenolphthalein alkalinity values.

Carbonate Alkalinity: Alkalinity is the result of three ions: hydroxide (OH⁻), carbonate (CO₃²⁻), and bicarbonate (HCO₃⁻). Carbonate alkalinity is calculated based on the total and phenolphthalein alkalinity values.

Bicarbonate Alkalinity: Alkalinity is the result of three ions: hydroxide (OH⁻), carbonate (CO₃²⁻), and bicarbonate (HCO₃⁻). Bicarbonate alkalinity is calculated based on the total and phenolphthalein alkalinity values.

Total Hardness: Water's hardness is determined by the concentration of multivalent cations in the water. Multivalent cations are cations with a charge greater than 1+. Usually, the cations have the charge of 2+. Common cations found in hard water include Ca^{2+} and Mg^{2+} . Water is considered soft if it contains 0 to 60 mg/L of hardness, moderately hard from 61 to 120 mg/L, hard between 121 and 180 mg/L, and very hard if more than 180 mg/L. Very hard water is not desirable for many domestic uses; it will leave a scaly deposit on the inside of pipes, boilers, and tanks. Hard water can be softened at a fairly reasonable cost, but it is not always desirable to remove all the minerals that make water hard. Extremely soft water is likely to corrode metals, although it is preferred for laundering, dishwashing, and bathing.

Carbonate Hardness: (also known as temporary hardness, because it is due to cations and the bicarbonate ion which can be removed by boiling the water which precipitates calcium and magnesium carbonate) A calculation equal to the bicarbonate alkalinity.

Non Carbonate Hardness: (also known as permanent hardness, because it is due to cations and sulfate which can not be removed by boiling the water) A calculation equal to Total Hardness - Temporary Hardness.

Calcium Hardness: the concentration of calcium ions in the solution.

Magnesium Hardness: the concentration of magnesium ions in solution. A calculation equal to Total Hardness - Calcium Hardness.

Langelier Saturation Index: The Langelier saturation index (sometimes Langelier stability index) is a calculated number used to predict the calcium carbonate stability of water. It indicates whether the water will precipitate, dissolve, or be in equilibrium with calcium carbonate. In practice, water with an LSI between -0.5 and +0.5 will not display enhanced mineral dissolving or scale forming properties. Water with an LSI below -0.5 tends to exhibit noticeably increased dissolving abilities while water with an LSI above +0.5 tends to exhibit noticeably increased scale forming properties. If $\text{LSI} < -0.5$, serious corrosion conditions are present. If LSI is between -0.5 and 0, the water is slightly corrosive but not scale forming. If LSI is between 0 and 0.5, the water is slightly scale forming and slightly corrosive. If $\text{LSI} > 0.5$, the water is scale forming but not corrosive.

Ferrous/Ferric/Iron: Iron dissolved in groundwater is in the reduced iron II (ferrous) form. This form is soluble and normally does not cause any problems by itself. Iron II is oxidized to iron III on contact with oxygen in the air or by the action of iron related bacteria. Iron III (ferric) forms insoluble hydroxides in water. These are rusty red and cause staining and blockage of screens, pumps, pipes, reticulation systems etc. If the iron hydroxide deposits are produced by iron bacteria then they are also sticky and the problems of stain and blockage are many times worse.

Manganese: Manganese may become noticeable in tap water at concentrations greater than 0.05 milligrams per liter of water (mg/l) by imparting a color, odor, or taste to the water. However, health effects from manganese are not a concern until concentrations are approximately 10 times higher. If dissolved manganese levels are above 0.05 mg/L, black or gray staining and a bitter metallic taste may result from oxidation of the water.

Phosphate: Phosphorus occurs naturally in rocks and other mineral deposits. During the natural process of weathering, the rocks gradually release the phosphorus as phosphate ions which are soluble in water. Phosphates exist in three forms: orthophosphate, metaphosphate (or polyphosphate) and organically bound phosphate. Orthophosphate forms are produced by natural processes, but major man-influenced sources include: partially treated and untreated sewage, runoff from agricultural sites, and application of some lawn fertilizers. Orthophosphate is readily available to the biological community and typically found in very low concentrations in unpolluted waters.

Nitrate: Sources of nitrate (NO_3^-) are decaying organic matter, legume plants, sewage, nitrate fertilizers, and nitrates in soil. Nitrate encourages growth of algae and other organisms that cause undesirable tastes and odors. Concentrations much greater than the local average may suggest pollution. Nitrate in water may indicate sewage or other organic matter. In amounts less than 5 ppm, nitrate has no effect on the value of water for ordinary uses.

Sulfate: Sulfates (SO_4^{2-}) are dissolved from rocks containing gypsum, iron sulfides, and other sulfur compounds. Commonly present in mine water and in some industrial wastes, large amounts have a laxative effect on some people and, in combination with other ions, give a bitter taste. Sulfate in water containing calcium forms a hard scale in steam boilers.

BART IRB Test: (Iron related bacteria) Iron-Related bacteria are difficult to enumerate because they are subdivided into several groupings (e.g., iron-oxidizing and iron-reducing bacteria). Iron-related bacteria can use iron in their metabolism. Taste and odor problems and “red water” are common symptoms of problems due to iron-related bacteria. These bacteria function under different reduction-oxidation (redox) conditions and use a variety of substrates for growth. The IRB-BARTs can detect both iron-oxidizing and iron-reducing bacteria. Common iron-related bacteria include Gallionella, Crenothrix, Sphaerotilus, Siderocapsa, and Thiobacillus ferrooxidans.

BART SLYM Test: (Slime Forming bacteria) When slime-forming bacteria are in the sample, one or more types of slime will grow in the SLYM- BART vial during incubation. The slime is typically seen as a cloudy or gel-like growth, which can be in one location or occur throughout the sample. These growths are usually white, grey, yellow or beige in color and can darken over time. Slime-forming bacteria typically produce the thickest slime under aerobic (oxidative) conditions, which can be seen around the floating ball. Iron-related bacteria also produce slime, but it is typically thinner and involves the accumulation of various forms of iron. Slime-forming bacteria can make large amounts of slime without iron.

BART SRB Test: (Sulfate-reducing bacteria): When sulfate-reducing bacteria are in the sample, sulfate is reduced to hydrogen sulfide (H₂S) in the SRB-BART vial during incubation. The H₂S reacts with the ferrous iron in the test vial to form black iron sulfides. This sulfide commonly forms either in the base as a black precipitate and/or around the ball as an irregular black ring. SRB tend to grow in anaerobic conditions deep within biofilms (slimes) as a part of a microbial community. SRB may not be present in the free-flowing water over the site of the fouling. Sulfate- reducing bacteria can cause problems such as strong odors, blackening of equipment, slime formations and the start of corrosive processes.

Attachment 2

Cotey Chemical Water
Analysis Report #2



Cotey Chemical Water Analysis Report

To: Chance Coats Laboratory #: 800

Company: Coats Pump Sample Received:

Sample ID: RW4 Sample #1 Results Reported: 2/11/26

Subject: To perform chemical and bacterial analysis of water sample.

	mg/L		mg/L
pH	6.8		
Conductivity (µS/cm)	889		
ORP (mV)	-139	Ferrous Iron (Fe ²⁺)	3.51
TDS	436	Ferric Iron (Fe ³⁺)	2.11
Salinity (ppt)	0.436	Total Iron	5.62
Phenolphthalein Alkalinity	0	Manganese	4.2
Total Alkalinity	184		
Hydroxide Alkalinity	0		
Carbonate Alkalinity	0		
Bicarbonate Alkalinity	184	Phosphates	3.11
Total Hardness	368		
Carbonate (temporary) Hardness	184	Nitrate	1.0
Non Carbonate (permanent) Hardness	0	Sulfate	10
Calcium Hardness as CaCO ₃	160		
Magnesium Hardness as CaCO ₃	208		
Langelier Saturation Index	-0.68		

Red indicates area of interest/concern. Green indicates below normal value.

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Cotey Chemical Water Analysis Report

To: Chance Coats Laboratory #: 801

Company: Coats Pump Sample Received:

Sample ID: RW4 sample #2 Results Reported: 2/11/26

Subject: To perform chemical and bacterial analysis of water sample.

	mg/L		mg/L
pH	6.8		
Conductivity (µS/cm)	712		
ORP (mV)	138	Ferrous Iron (Fe ²⁺)	0.05
TDS	349	Ferric Iron (Fe ³⁺)	0.09
Salinity (ppt)	0.349	Total Iron	0.14
Phenolphthalein Alkalinity	0	Manganese	0.3
Total Alkalinity	180		
Hydroxide Alkalinity	0		
Carbonate Alkalinity	0		
Bicarbonate Alkalinity	180	Phosphates	4.29
Total Hardness	396		
Carbonate (temporary) Hardness	180	Nitrate	2.8
Non Carbonate (permanent) Hardness	0	Sulfate	40
Calcium Hardness as CaCO ₃	166		
Magnesium Hardness as CaCO ₃	230		
Langelier Saturation Index	-0.67		

Red indicates area of interest/concern. Green indicates below normal value.

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