CHANGE ORDER

Change Order No. 1

Date: December 16, 2024

Agreement Date: July 15, 2024

Owner: **MISSION SPRINGS WATER DISTRICT**

Project Description: **On-Call Well and Booster Maintenance and Repair Services**

Contractor: **LO Lynch Quality Wells & Pumps Inc.**

The following changes are hereby made to the Contract:

This change order will increase the amount of the Contract Agreement from a Not to Exceed amount of $150,000.00 to a Not to Exceed amount of $505,990.00.

JUSTIFICATION

Conduct aggressive chemical rehab, perform well redevelopment, focused intake pumping, and flowmeter spinner survey of Well 35 per the attached work plan from Kyle Groundwater, Inc. and bid schedule.

CHANGE TO CONTRACT PRICE

Original Contract Price	$150,000.00
Current Contract Price adjusted by Previous Change Order(s)	$ 0.00
Contract Price due to this Change Order	$ 355,990.00
New Contract Price including this Change Order	$ 505,990.00

CHANGE TO CONTRACT TIME

Contract Time will be increased	0 Calendar Days
Date for Completion of all Work	June 30, 2025

APPROVALS REQUIRED

To be effective, this Change Order must be approved by the Owner if it changes the scope or objective of the Project, or as may otherwise be required by the Contract Documents.

Requested by: _____ Date: _____
Mission Springs Water District
Danny Friend, Director of Operations

Recommended by: _____ Date: _____
Mission Springs Water District
Danny Friend, Director of Operations

Approved by: _____ Date: _____
Mission Springs Water District
Brian E. Macy, PE - General Manager

Accepted by: _____ Date: _____
LO Lynch Quality Wells & Pumps Inc.
Emil Worm - President

October 28, 2024

Mr. Danny Friend,
Director of Operations
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240

Subject: **Mission Springs Water District Well 35**
Phase II – Diagnostics, Rehabilitation, Redevelopment, and Testing

Dear Danny:

This letter presents our assessment of Mission Springs Water District (MSWD) Well 35, located approximately 315 feet north of Promenade Drive and Karen Avenue, in Desert Hot Springs, California (see Figure 1). The goal of this document is to present results and interpretation of diagnostic surveys conducted in February and March 2024, provide conclusions and recommendations for next steps, and develop a detailed plan for subsequent phases of the work. It is our understanding that the well was constructed in 2007, and subsequently equipped to serve as a source of construction water to the adjacent development. Further, that motor was removed in 2008, and that the well has been idle since that time. On August 18, 2024, KYLE Groundwater Inc., (KGI) issued a work plan detailing preliminary well diagnostics to be performed. Based on this work plan, Legend Pump & Well Service, Inc., of San Bernardino, California, removed and disposed of the existing well pump, and conducted downhole video and Electro-Magnetic Defecto-Scope (EMDS) surveys to investigate the condition of the well casing.

Background

Based on the records provided (see Attachment A), MSWD Well 35 was drilled and constructed to a reported total depth of approximately 1,040 feet below ground surface (bgs) in 2007 using the reverse circulation rotary drilling method. The blank well casing consists of 14-inch inside diameter (ID) by 5/16-inch wall thickness low carbon steel extending from ground surface to approximately 725 feet bgs, and 1,020 to 1,040 feet bgs (see Figure 2). The well screen consists of 14-inch ID low carbon steel with 0.090-inch Ful-Flo louvered openings extending from approximately 725 to 1,020 feet bgs (see Figure 2). The water level in the well was reported to occur at a depth of 596 feet bgs at time of construction (i.e., July 2007). The instantaneous pumping rate recorded at the time of construction was 2,041 gallons per minute (gpm) with an associated specific capacity of approximately 24 gpm per foot.

Downhole Video Survey - March 14, 2024

Water Well Redevelopers, Inc., performed a downhole video survey of Well 35 on March 14, 2024. At the time that survey was conducted, the static water level was observed at a depth of approximately 595 feet bgs. The blank well casing above the static water level was observed to be in relatively good condition, exhibiting minor levels of general pitting and corrosion, increasing slightly with increasing depth (see Figure 3 below). Below water, the blank well casing was observed to be impacted by minor to moderate mineral scale, becoming thicker with increasing depth, and with the occurrence of scattered nodules. The louvered well screen exhibits dramatically increased mineral scale, and bacteriological growth, although the majority of louvered openings appear to be mostly open throughout the entire well screen interval (see Figures 4 and 5 below). Scattered nodules were observed mostly upon the blank sections of well screen between screen sections. The video survey ends in accumulated fill at a depth of approximately 1,026 feet bgs, 14 feet above the reported total depth of the well at 1,040 feet bgs (see Figure 6 below). A copy of the downhole video survey report is provided in Attachment B.

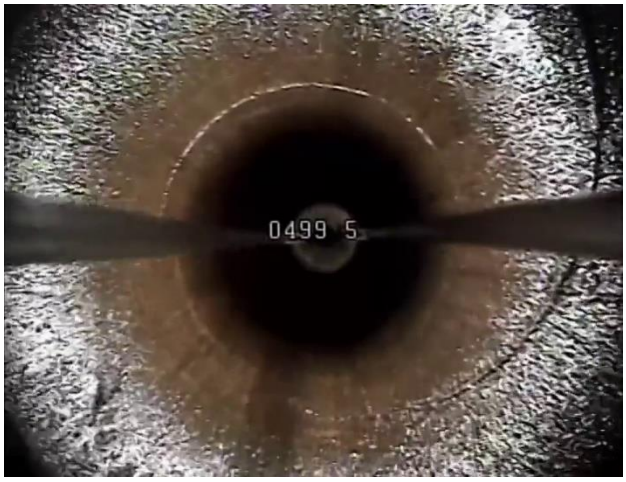


Figure 3 – Minor pitting and corrosion of blank well casing.

Figure 4 – Encrusting and biological material on louvered openings.

Figure 5 – Encrusting and biological material on louvered openings.

Figure 6 – Accumulated fill in well sump.

Electro-Magnetic Defecto-Scope (EMDS) Surveys

Results of the EMDS survey suggest that the well is in generally good condition, with average metal loss ranging from between 1.5 to 12.0 percent. There are no areas of metal loss that could be considered of significant concern in terms of structural integrity and remaining useful well life. A copy of the EMDS survey report is included in Attachment C.

Groundwater Quality

Groundwater samples were collected from Well 35 on December 12, 2023, as part of the Coachella Valley Salt and Nutrient Management Plan (SNMP) monitoring program. Analytical results indicated a total dissolved solids (TDS) concentration of 390 milligrams per liter (mg/L), a nitrate concentration below laboratory detection limits, a hexavalent chromium concentration of 1.9 micrograms per liter (µg/L), and a uranium concentration of 10 picocuries per liter (pCi/L). Of greatest concern is the uranium concentration in both Wells 34 and 35, as this these concentrations will impact blending capacity within the system. A copy of the laboratory analytical report is included in Attachment D.

Permitting Constraints

Based on the well driller's log, Well 35 was reportedly constructed with sanitary and inner annular seals to a depth of 100 feet bgs, and with the appropriate annular thickness (see Figure 2). These seals satisfy the minimum depth of 50 feet bgs required for municipal drinking water supply wells by the State Water Resources Control Board Division of Drinking Water (DDW).

It should be noted that Well 35 does not fully comply with the California Code of Regulations (CCR) control zone requirement, which states that the area surrounding a municipal water supply well must be under the control of the well owner to a radius of at least 50 feet. The control zone for Well 35 extends approximately 25 feet beyond the western property boundary, and approximately 8 feet beyond the northern property boundary. As such, it is recommended that MSWD open an early dialogue with DDW and the County of Riverside Department of Environmental Health to verify that this will not present any problems in obtaining a Domestic Water Supply Permit Amendment necessary to operate the well.

DDW and the County of Riverside Department of Environmental Health require that certain minimum distances be maintained between a potable water supply well and specific activities and infrastructure which may present a sanitary hazard. The most common setback requirements include the following:

- Sanitary Sewer Line or Lateral: 50 feet
- Sewer Manhole: 100 feet
- Sewer Manhole: 50 feet
- Storm Drain or Drainage Channel: 50 feet

- Petroleum Transmission Mains: 500 feet
- Dwelling: 25 feet

All setbacks currently appear to be met for Well 35, although it will be important to closely coordinate with the adjacent development such that potentially contaminating activities, or infrastructure that may result in setback violations, are appropriately located.

Well 35 is not located within a Special Flood Hazard Area as mapped by the Federal Emergency Management Agency (FEMA) as the well is located within Zone X "Other Flood Areas", an area defined as having 0.2% annual chance flood, 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

Construction Constraints

Well 35 is located in an area that offers more than adequate work area to allow well rehabilitation and redevelopment activities to take place and is proximal to an existing source of construction water adjacent to Karen Avenue, approximately 175 feet northeast of the well (see Figure 7).

It is assumed that discharge of waste water associated with rehabilitation, redevelopment, and testing of the well will be to the drainage swale located approximately 2,800 feet west of Well 35. It is anticipated that temporary conveyance piping will be routed south of the well site to the corner of Karen Avenue and Promenade Drive, and then west along Promenade Drive to the point where the drainage extends beneath the roadway (see Figure 7). A traffic-rated road crossing will be necessary to span an existing access point to the housing development (see Figure 7). Energy dissipation and erosion control will be required to prevent scouring of the swale bottom during discharge. It is assumed that discharges will be regulated under MSWD's existing National Pollution Discharge Elimination System (NPDES) Statewide General Permit for Drinking Water System Discharges to Waters of the United States (Order WQ 2014-0194-DWQ; General Order No. CAG14001). As such, it will be necessary to employ one or more temporary holding tanks, connected in series, to allow for settlement of entrained solid material and neutralization of chemical solutions extracted from the well, prior to discharge.

Findings and Conclusions

The following findings and conclusions were reached based on the results of this assessment:

- The well was constructed with 100-foot deep sanitary and annular cement seals of adequate annular thickness, satisfying the minimum regulatory requirement of 50 feet.
- The reported instantaneous pumping rate at the time of construction for Well 35 (i.e., 2007) was approximately 2,041 gpm with a specific capacity of approximately 24 gpm/foot, indicative of high aquifer transmissivity and production potential in this area.

- The March 2024 downhole video survey of Well 35 indicated the following major points:
    - There is minor pitting and corrosion of the mild steel blank well casing above the static water level at 595 feet bgs, and increasing with increasing depth.
    - The blank well casing below the static water level exhibits minor to moderate mineral scale and bacterial growth.
    - The louvered well screen exhibits dramatically increased mineral scale and bacterial growth throughout the entire length of well screen, although the majority of louvered openings appear to be mostly open.
    - There is 14 feet of accumulated fill material present in the bottom of the well.
- The EMDS survey suggests the well to be in generally very good condition, despite being unequipped and inactive for a period of 16 years.
- Uranium was reported at a concentration of 10 pCi/L in December 2023, elevated but below the California primary maximum contaminant level (MCL) of 20 pCi/L.
- The well does not fully comply with the DDW 50-foot control zone requirement, although this is not anticipated to be a significant issue provided early communication on this issue is initiated with the regulating agencies and property developer.
- The well currently meets all sanitary setbacks, including appropriate setbacks from sewer lines and manholes located along Karen Avenue.
- The well is proximal to a source of construction water.
- The well will require extensive temporary conveyance piping, and one road crossing, to reach the designated discharge point at the drainage swale to the west.

Recommendations

Based on the findings and conclusions of this evaluation, it is our opinion that Well 35 is in generally good condition, although it will be necessary to resolve the potential 50-foot control zone violation and verify setbacks with the surrounding development. Early dialogue should be opened with DDW regarding the possibility of permitting the well for future operation.

Permitting issues aside, it is feasible that Well 35 could be returned to service should current production potential and groundwater quality be deemed acceptable. As such, it is recommended that the well undergo a full well rehabilitation and redevelopment program including mechanical and chemical cleaning of the well casing and screen, initial and final well redevelopment, and aquifer testing, including flow and water quality profiling to assess uranium distribution throughout the well.

Execution

The Contractor shall provide all labor, materials, and equipment necessary to perform the work specified. The Contractor shall provide personnel experienced with carrying out any and all specified procedures in a manner that is both safe and efficient, ensures a quality work product, and results in defensible data collection. All work shall be completed in strict accordance with this work plan unless otherwise indicated by the Owner (MSWD) and/or the Owner's Representative (KGI).

1.1 Mobilization, Demobilization, and Site Clean Up

This task shall encompass mobilization and demobilization of labor, equipment, and materials to the project site, complying with applicable permits, providing for disposal of materials, providing temporary facilities, providing temporary power, providing site security, site cleanup, and any other labor, equipment, and materials necessary with fulfilling requirements as specified herein. The Contractor shall install temporary chain-link fencing around the work site such that the site is fully secured from entry.

1.2 Waste Water Discharge

The Contractor shall provide temporary discharge piping and booster pumps (as necessary) of sufficient diameter and length to convey water from the well to a location approved by the Owner. At least one (1) temporary traffic-rated road crossing will be necessary to discharge from Well 35 to the drainage swale located west of the well site. All temporary piping shall be assembled in a manner that will protect against leaks and generation of nuisance water. Industry-standard best management practices (BMPs) shall be provided by the Contractor at the site and discharge point to protect against accidental spills, erosion, and mobilization of sediment. Temporary holding tanks, of sufficient volume and number to allow settlement of entrained solids and neutralization of chemical solutions extracted from the well, will be required. Energy dissipation and erosion control shall be employed to prevent scouring at the point of discharge. The Contractor shall be responsible for all requirements of the Owner's NPDES permit, and shall schedule and coordinate all discharges with the Owner.

1.3 Mechanical Cleaning

A mechanical cleaning procedure should be implemented to loosen and dislodge clogging, encrusting and/or bio-fouling materials present within the well. The recommended process to be used is brushing using 14.25-inch outside diameter (OD) nylon brushes. The equipment to be used to perform the brushing operation shall be a rig equipped with a variable-speed continuously rotating arm capable of a minimum of 6 feet of vertical movement within the well for every revolution of the arm. The brush shall be moved vigorously across 5-foot intervals of well casing and screen, beginning at the bottom of the well and progressing upward to the static water level. Mechanical cleaning shall be employed throughout the entire length of the well but will primarily focus on the louvered well screen intervals. The amount of time spent brushing the wetted portion of well casing and screen shall be 10 minutes per 5-foot interval

(i.e. approximately 15 hours for 445 feet of wetted well casing and screen). Care should be taken during the cleaning operation to ensure that the integrity of the casing is not compromised.

1.4 Removal of Debris from Bottom of Well

Upon completion of mechanical cleaning, preliminary and final well redevelopment, and well testing, the Contractor shall measure the depth of well. As deemed necessary by the Owner's Representative, the Contractor shall remove any accumulated material from the well sump by bailing and/or pumping.

1.5 Post-Cleaning Downhole Video Survey

A dual-cam downhole color video survey shall be conducted upon completion of mechanical cleaning to assess the effectiveness of the cleaning process and the condition of the well casing beneath encrusting materials. The video surveyor, Pacific Surveys LLC, or approved equal, shall conduct the dual-cam color downhole survey in such a manner that it is suitable for visual inspection of the well casing and screen. The Contractor will add clean potable water to the well at least one (1) day prior to conducting the video survey in an effort to improve the clarity of the water column. The completed video survey will be provided digitally along with a 1-page video survey summary report in printed and electronic (i.e., PDF) format. Copies of the video survey and summary report will be provided to the Owner's Representative.

1.6 Preliminary Development

Following mechanical cleaning, and removal of material from the well sump, the Contractor shall perform a single (1) pass of focused intake pumping throughout the entire length of well screen. The focused intake pumping tool shall consist of two (2) rubber disks spaced 10 feet apart at either end of a perforated section of pipe with sufficient open area to allow effective pumping to take place. The diameter of the rubber disks shall be no greater than ¼-inch smaller than the inside diameter of the well casing and screen. The swab tool shall be deployed within the well upon pipe within the screened section(s) of the well, and shall be designed such that initial development by simultaneous swabbing and pumping can occur. The focused intake pump shall achieve a constant instantaneous minimum pumping rate of 900 gpm, although the actual flow rate applied during preliminary development is anticipated to be no greater than 500 gpm. Flow rates shall be controlled using a variable frequency drive (VFD) tailored to meet anticipated pumping dynamics. The focused intake pump shall be sealed within a pump chamber in-line with the swab tool and discharge pipe, and shall be fitted with a check valve above the pump to prevent backflow of material into the swab tool upon cessation of pumping. The Contractor shall provide aboveground support equipment that shall be of sufficient size and strength to allow suspension of the entire focused intake pump, swab, and discharge assembly, and allow swabbing to occur over 30-foot sections of well screen while simultaneously pumping. The Contractor shall provide a generator of sufficient output to drive the pump at the desired flow rate and under the anticipated pumping conditions.

1.7 Phase I Chemical Treatment

Once the single pass of focused intake pumping has been performed, the well shall undergo Phase I chemical treatment with a dispersant polymer (i.e., Nu-Well 220) to break down and mobilize fine sands, clays, drilling fluid additives, and bacterial material present within the gravel pack and near-well zone. A non-ionic surfactant (i.e., Nu-Well 400) shall be simultaneously utilized to serve as a wetting agent to improve penetration and cleanup of hard deposits and bacterial material. All chemicals shall be NSF Standard-60 certified. The Contractor shall provide proof of NSF-60 certification and SDS for all chemical products used. The Contractor shall be responsible for providing proper spill containment for all chemicals stored on site. The Contractor shall provide and utilize proper PPE and adhere to all safety protocols recommended by the chemical manufacturer for handling, transportation, and use.

The Contractor must contact and consult with the chemical manufacturers and Owner's Representative prior to implementation of the chemical program to discuss approved chemical mixing and application procedures. Based on the total treatment volume of approximately 7,400 gallons (i.e., 1.5 x the total calculated volume of water in the original well and gravel envelope), the following chemical volumes shall be utilized, unless otherwise recommended by the manufacturer and/or Owner's Representative.

Product	Amount
Nu-Well 220 Polymer Dispersant (1 gal per 300 gal)	25 gal
Nu-Well 400 Non-Ionic Surfactant (1 gal per 1,000 gal)	8 gal

The chemicals shall be delivered to the site in newly purchased, sealed, 5-gallon containers. The chemical shall be evenly distributed into the well by injection through tremie pipe connected to a dual-swab tool. The Contractor shall place the chemical starting from the top of the well screen and working downward. Under no circumstances shall the Contractor pour the chemical into the well from the ground surface or through any ancillary tubing (e.g. gravel feed or sounding tubes). Small batches will be introduced to the well screen at minimum intervals of 60 feet. Once the chemical has been placed throughout the well screen, the well shall be vigorously brushed or swabbed for at least two (2) hours to fully disperse the chemical throughout the well and near-well zone. The chemical mixture shall be allowed to remain undisturbed in the well for a minimum period of 24 hours.

1.8 Phase II Chemical Treatment

Following Phase I chemical treatment, the well shall undergo Phase II chemical treatment to remove mineral precipitates and biological material from the well and near-well zone. The chemical treatment process shall include utilization of HCT Well-Klean Pre-Blend and sodium bicarbonate chemical products. All chemicals must be NSF Standard-60 certified. The Contractor shall provide proof of NSF-60 certification and accompanying SDS for all chemical products used, and shall be responsible for providing proper spill containment for all chemicals stored on site. The Contractor shall provide and utilize all necessary safety equipment and PPE, including, but not limited to, hard hat, safety vest,

respirators, latex gloves, rubber boots, Tyvek coveralls, goggles, steel-toe boots, and pressurized eyewash and shower stations. The Contractor shall also provide a HASP and SPP prior to mobilization of any chemical to the well site. The Contractor shall utilize only qualified employees experienced at working with the specified chemicals. The Contractor shall ensure that all equipment that will come in contact with acids will consist of non-reactive and acid-resistant components, including but not limited to, mixing tanks, transfer pumps, agitators, conveyance hoses and piping, holding tanks, and cables. Chemicals stored on site overnight shall be secured and protected from tampering to the satisfaction of the Owner and Owner's Representative.

The Contractor must contact and consult with the chemical manufacturers prior to implementation of the chemical program to discuss approved chemical mixing and application procedures. Based on the total treatment volume of approximately 7,400 gallons (i.e., 1.5 x the total calculated volume of water in the well), the Contractor shall utilize the following chemical volumes unless otherwise recommended by the manufacturer and/or Owner's representative.

Product	Amount
Freshwater Used for Chemical Mixing	7,400 gallons
HCT Well-Klean Pre-Blend (5.0%)	370 gallons

The Well-Klean Pre-Blend shall be delivered to the site in 300-gallon totes, unless approved otherwise by the Owner's Representative. The chemicals and freshwater shall be mixed in batches within a 5,000-gallon aboveground tank, unless approved otherwise by the Owner's Representative. The mixture shall be evenly distributed into the well by injection through open-ended tremie pipe. Small batches will be introduced to the well screen at intervals determined by the Owner's Representative. Once the chemical has been placed throughout the well screen, the well shall be vigorously brushed or swabbed for at least four (4) hours, or as otherwise directed by the Owner's Representative, to fully disperse the chemical throughout the well and near-well zone. Chemical distribution shall begin at the bottom of the well and progress upward to the static water level. Application of Phase II chemicals shall be continuous and complete within a single 12-hour period, after which no further work shall take place within the well and the well shall be allowed to rest for a period of 24 hours. Care should be taken during the chemical cleaning operation to ensure that the integrity of the casing is not compromised.

Following 24-hours of soak time, the Contractor shall neutralize the residual downhole chemicals at the surface using sodium bicarbonate. The Contractor shall remove Phase II chemicals from the well via focused intake pumping and convey the acidified water to one or more temporary holding tanks of sufficient capacity to safely store the chemical before neutralization. Acidified water shall be neutralized within the above ground holding tanks using sodium bicarbonate until electrical conductivity and pH reach ambient levels, and until visual turbidity is absent before being discharged to the designated discharge point identified by the Owner. Approximately 185 lbs. of sodium bicarbonate is estimated for proper neutralization, although the Contractor will be responsible for determining the actual amount necessary. A significant reserve of sodium bicarbonate shall be retained on site at all times to be used for

aboveground neutralization in the event of a chemical spill. The solution shall meet all requirements stipulated by the Owner prior to disposal.

1.9 Initial Redevelopment by Focused Intake Pumping

Initial redevelopment of the well and near-well zone will be accomplished by swabbing and focused intake pumping (see methodology in Section 1.6) throughout the entire length of well screen. Focused-swabbing will dislodge loosened material from the gravel envelope and near-well zone, and simultaneous pumping will mobilize materials and bring them to the ground surface. Vigorous swabbing shall begin at the top of the well screen interval and proceed downward in approximately 10-foot intervals.

The Contractor shall spend a minimum of 15 minutes per 10-foot interval of well screen during each pass of the well screen. A minimum of two (2) passes through the entire well screen shall be required (i.e., a total of approximately 15 hours). Additional time may be recommended by the Owner's Representative based on the volume of material removed from the well during initial passes. The Contractor shall provide at least two (2) Imhoff cones to properly quantify material removed from the well. The Imhoff cones shall be newly purchased, clean, and in working order. The Imhoff cones used shall be of a type that have 0.1-mL resolution between the zero and 0.5 mL measurement interval. The Contractor shall provide working water quality meters for measurement of pH, electrical conductivity, total dissolved solids, temperature, and turbidity. The Contractor shall be required to measure and record the volume of material removed from each 10-foot interval of well screen. An acceptable sand concentration should be less than 0.1 mL per 10-foot interval as measured with an Imhoff cone.

Upon completion of redevelopment by focused intake pumping, the Contractor shall measure the depth of well. As deemed necessary by the Owner's Representative, the Contractor shall remove any accumulated material from the well sump by pumping with the focused intake tool.

1.10 Final Redevelopment by Pumping and Surging

A line-shaft turbine test pump should be installed immediately after completion of redevelopment by focused intake pumping. The pump and prime mover should have a capacity of approximately 2,000 gpm against a total head of 690 feet, with the pump intake set at a depth of approximately 710 feet bgs. Pump installation shall accommodate installation of Schedule-80 PVC tubing to a depth of 720 feet to allow for flow profiling and depth-specific groundwater sampling (see Section 1.11). A metering device should be installed on the discharge pipe and should have an instantaneous read in gallons per minute and a totalizer in gallons. A port suitable for collection of groundwater samples during testing shall be installed on the discharge line. Additionally, a "Rossum" centrifugal sand tester should be installed in the discharge line to monitor and measure sand production during redevelopment pumping. It is imperative that the sand tester be installed in accordance with manufacturer's guidelines as accurate quantification of entrained sand is deemed critical to this project. Tests for sand content and specific capacity should be performed periodically throughout this phase to track the redevelopment progress, and to ensure that the well is

thoroughly redeveloped and stabilized before beginning the aquifer pumping tests. The Contractor shall submit a well testing equipment plan to the Owner's Representative at least 72-hours prior to installation. It is recommended that final redevelopment by pumping and surging be at least 32 hours in duration for thorough redevelopment.

At the beginning of final redevelopment, the initial pumping rate shall be restricted to less than 300 gpm. As the discharge clears, the pumping rate shall be gradually increased until the maximum pumping rate is achieved without breaking suction or dewatering the aquifer. Once the maximum discharge rate is achieved, the pumping rate should be lowered to a rate agreed upon by the Owner's representative. At this time, the well shall be surged by stopping the pump and allowing the water in the pump column to surge back through the pump bowls and into the well screen. The surging process should begin at low discharge rates and be repeated at progressively higher rates until the maximum discharge rate is achieved without dewatering the aquifer or breaking suction. The cycle of pumping and surging shall be repeated until the discharge water is clear of sand and silt, there is no further significant increase in specific capacity, sand content is within acceptable limits (i.e., less than 2 mg/L over the first five minutes following pump startup), and an average sand production does not exceed 5 mg/L for any two-hour cycle.

Pumping data shall be sufficient for the Owner or Owner's representative to prepare a specific drawdown chart from which to monitor the progress of well redevelopment. The following parameters shall be recorded throughout well redevelopment at the beginning and end of 20-minute pumping cycles:

- Time of readings, measured to the nearest minute.
- Instantaneous flow rate, to the nearest 10 gpm.
- Flowmeter totalizer reading, measured to the smallest possible unit.
- Pumping water level, measured to the nearest 0.01 foot.
- Drawdown, measured to the nearest 0.01 foot.
- Specific capacity, measured to the nearest 0.1 gpm/foot.
- Sand production, measured to the nearest 0.01 ml.
- Turbidity, measured to the nearest NTU.
- Any observations of unusual or changed conditions (odor, air, color, turbidity, etc.).

1.11 Post-Rehabilitation Well Testing

All water generated during well testing shall be conveyed via temporary discharge piping to the designated discharge location identified herein. Well testing shall consist of an 8-hour step drawdown test, a 72-hour constant rate drawdown test, and an 8-hour recovery test. The step drawdown test will determine specific capacity and well efficiency relationships, and will consist of pumping at four (4) differing pumping rates starting with the lowest and working up to the highest. The constant rate drawdown and recovery test will be conducted to determine short- and long-term pumping dynamics at the anticipated design rate.

The Owner's Representative will determine the instantaneous flow rates to be used during testing and will provide them to the Contractor within 24 hours of testing.
During testing, the time of pump startup, pump shutdown, and all interim measurements shall be made with reasonable accuracy (±0.5 minutes). Static water levels will be collected both before and after well testing following an amount of time deemed necessary for stable readings as determined by the Owner's Representative. Any irregular event occurring during the well testing, such as a pump failure or restart, should be noted and time recorded. These irregular events will determine the validity of the well testing. Testing deemed to be invalid by the Owner's representative due to mechanical failure shall be repeated at the Contractor's expense. The Contractor shall measure and record the following parameters prior to well capacity testing.

- Day and date.
- Time of readings, measured to the nearest minute.
- Beginning reading on the flowmeter totalizer reading.
- Static water level measured every five (5) minutes for 30 minutes immediately prior to testing, measured to the nearest 0.01 foot.

During well testing, the time of pump startup, pump shutdown, and all interim measurements shall be made with reasonable accuracy (±0.5 minutes). Static water levels will be collected both before and after well testing following an amount of time deemed necessary for stable readings as determined by the Owner's representative. Any irregular event occurring during well testing should be noted and time recorded, such as a pump failure or restart. These irregular events will determine the validity of the well testing. Testing deemed to be invalid by the Owner's representative due to mechanical failure shall be repeated at the Contractor's expense.

The Contractor shall measure and record the following parameters during well testing, or as otherwise directed by the Owner's Representative.

- Time of readings, measured to the nearest minute.
- Instantaneous flow rate, to the nearest 10 gpm.
- Flowmeter totalizer reading, measured to the smallest possible unit.
- Pumping water level, measured to the nearest 0.01 foot.
- Drawdown, measured to the nearest 0.01 foot.
- Specific capacity, measured to the nearest 0.1 gpm/foot.
- Sand production, measured to the nearest 0.01 ml.
- Turbidity, measured to the nearest NTU.
- Any observations of unusual or changed conditions (odor, air, color, turbidity, etc.).
- The time and nature of any adjustments to flow rate, unplanned interruptions in pumping, and any other conditions that may affect the outcome of the testing.

Elapsed time, pumping water levels, totalizer readings to calculate instantaneous pumping rates, and sand measurements shall be measured and recorded according to the following schedule:

Elapsed Time Since Pumping Started or Stopped [minutes]	Time Interval between Measurements [minutes]
0 – 10	2
10 – 30	5
30 – 60	10
60 – 120	15
120 – 720	30
>720	60

During the 72-hour constant rate pumping test, time-series water quality samples will be collected by the Owner's Representative according to the sampling schedule shown in the table below. Time-series samples will be submitted to Clinical Laboratories of San Bernardino, Inc., of Grand Terrace, California (Clinical), for analysis of uranium with a standard turn-around-time (TAT) request. Toward the end of the constant rate test (i.e., at an elapsed time of approximately 70 hours), samples will be collected by the Owner's Representative for Title 22 analysis (see Table 1). These samples will be submitted to Clinical under chain-of-custody protocol with a standard TAT request.

Time-Series Sampling Schedule (Elapsed Time)
5 min
1 hour
6 hours
12 hours
24 hours
48 hours
72 hours

Following 72 hours of pumping, and once the well has reached a steady state condition, a flowmeter spinner survey will be conducted to characterize the flow contribution of each well screen interval. The spinner survey shall be conducted by Pacific Surveys using a 1.6875-inch by 24-inch long flowmeter tool, and shall consist of at least three dynamic tests conducted throughout the screened portions of the well at differing line speeds (in feet per second), unless otherwise approved by Owner's Representative. The record for each test shall indicate either meter speed or percentage of total meter speed with depth.

Following completion of the flowmeter survey, depth-specific groundwater sampling will be performed using a depth-specific fluid sampling device. The sampling device shall be comprised of a 1.38-inch diameter by 64-inch long stainless steel cylinder with a minimum 500-mL capacity sampling chamber. For each sampling event, the sampling chamber shall be placed under a vacuum, lowered to the desired

sampling depth, and opened from the surface, allowing the chamber to fill with groundwater from the specified depth. The device shall be retrieved, and samples collected from a built-in sampling port. Following sample collection, the sampling chamber shall be decontaminated using an environmental detergent and rinsed with deionized water. Groundwater samples shall be collected from every 20 feet of well screen interval, beginning at 990 feet bgs (i.e., thirteen [13] samples), with each sample being representative of the cumulative water quality contribution of the well screen below. Additionally, a sample will be collected at the ground surface as representative of the bulk water quality produced from the well. All samples will be submitted to Clinical for analysis of uranium with a standard TAT request. Results of the flowmeter survey and depth-specific sampling will be utilized to perform dynamic mass profiling for uranium, and to determine if water quality improvement by well modification is feasible.

Upon completion of well testing, the Contractor shall measure the depth of well. As deemed necessary by the Owner's Representative, the Contractor shall remove any accumulated material from the well sump by pumping with the focused intake tool.

1.12 Post-Rehabilitation Downhole Video Survey

A dual-cam downhole color video survey shall be conducted upon completion of rehabilitation and redevelopment to serve as a record of the condition of the well. The video surveyor, Pacific Surveys LLC, or approved equal, shall conduct the dual-cam color downhole survey in such a manner that it is suitable for visual inspection of the well casing and screen. The Contractor will add clean potable water to the well at least one (1) day prior to conducting the video survey in an effort to improve the clarity of the water column. The completed video survey will be provided digitally along with a 1-page video survey summary report in printed and electronic (i.e., PDF) format. Copies of the video survey and summary report will be provided to the Owner's Representative.

1.13 Well Disinfection

The well shall be disinfected within 72 hours following rehabilitation and redevelopment to mitigate bacterial growth. The Contractor shall first adjust the pH of the water column within the well to 5.5 to 6.0 units through the addition of Nu-Well 410 chlorine enhancer, or approved equal, applied through tremie pipe and mixed with a bailer or other approved method. Liquid sodium hypochlorite disinfectant shall then be evenly distributed throughout the well and near-well zone. The Contractor shall place the disinfectant starting from the top of the well screen and working downward. Under no circumstances shall the Contractor pour the disinfectant into the well from the ground surface or through any ancillary tubing (e.g. gravel feed or sounding tubes). Small batches will be introduced to the well screen via tremie pipe at minimum intervals of 60 feet. Once the disinfectant has been placed throughout the well screen, the well shall be vigorously brushed or swabbed for at least two (2) hours to fully disperse the chemical throughout the well and near-well zone. The Contractor must achieve a minimum concentration of 200 mg/L Cl_2 to be confirmed by the Contractor using test strips or other equivalent, as approved by the Owner or Owner's Representative. The Contractor shall take extreme care, as adding chlorinated water with a depressed pH can result in the formation of dangerous chlorine gas. All disinfection solutions

shall be NSF-60 certified and should be added to the well according to the manufacturer's guidelines and using the recommended volumes provided in the following table:

Product	Amount
Nu-Well 410 Chlorine Enhancer (~0.6 gal per 1,000 gal of Water in Well)	4 gal
12.5% Sodium Hypochlorite (~1.6 gal per 1,000 gallons of Water in Well)	12 gal

1.14 Demobilization and Site Cleanup

Upon completion of the work, the Contractor shall demobilize and remove all equipment, unused materials, operating supplies, debris, refuse, waste materials, facilities, and all other miscellaneous items resulting from or used during execution of the work. The Contractor shall restore all areas impacted by construction activities to as near as possible to original condition to the satisfaction of the Owner. Any facilities removed, temporarily relocated, or damaged, shall be repaired and/or restored to original condition upon completion of the work, unless otherwise indicated by the Owner. The well head and ancillary tubing shall be capped by welding circular pieces of like steel to each opening, with solid and continuous weld beads around the entire circumference.

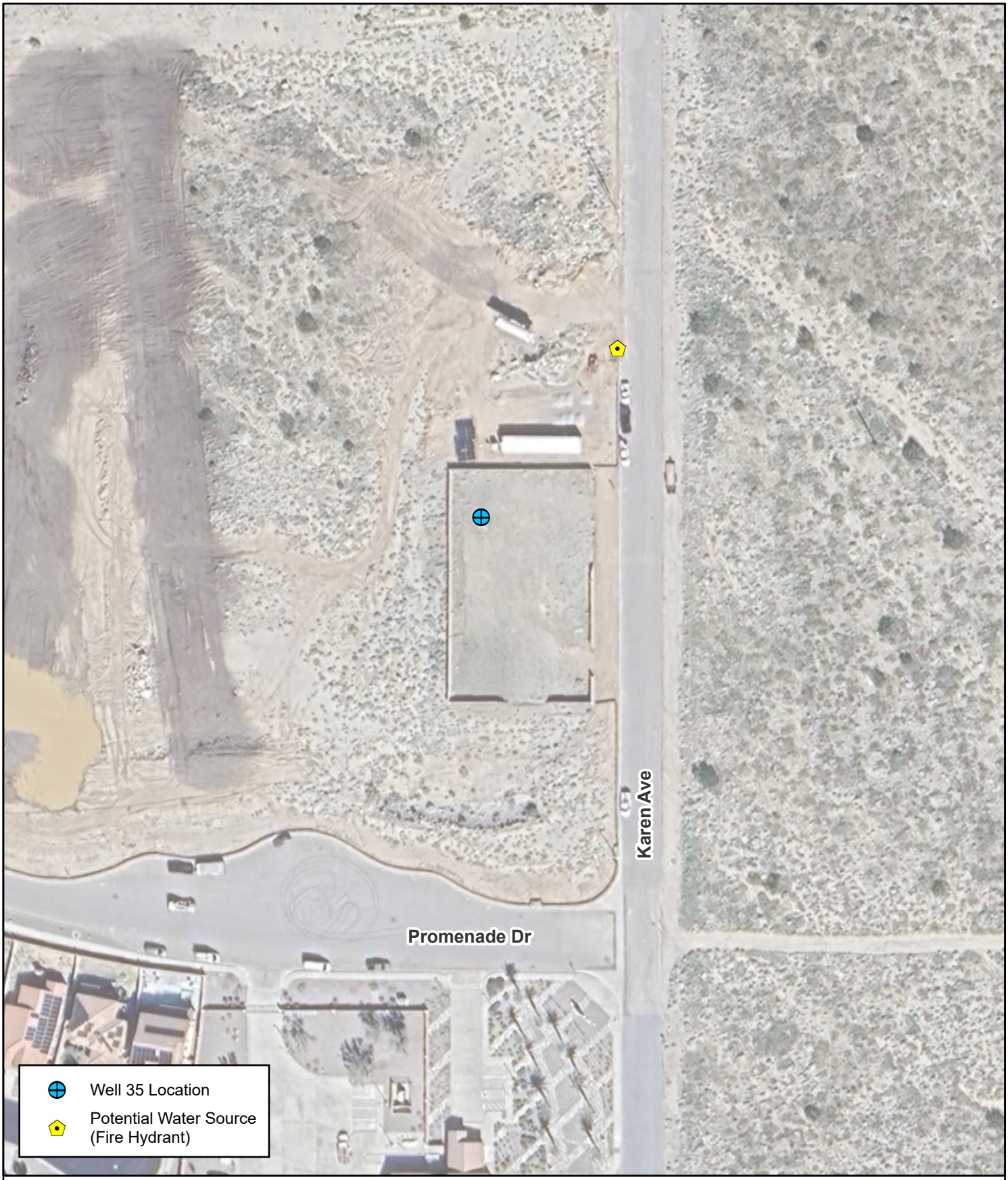
Sincerely,

Russell John Kyle, PG, CHG
President / Principal Hydrogeologist

Enclosures

FIGURES

KYLE Groundwater



GENERAL LOCATION MAP

WELL 35
PHASE II - DIAGNOSTICS, REHABILITATION, REDEVELOPMENT, AND TESTING
MISSION SPRINGS WATER DISTRICT
DESERT HOT SPRINGS, CALIFORNIA
APRIL 2024

N

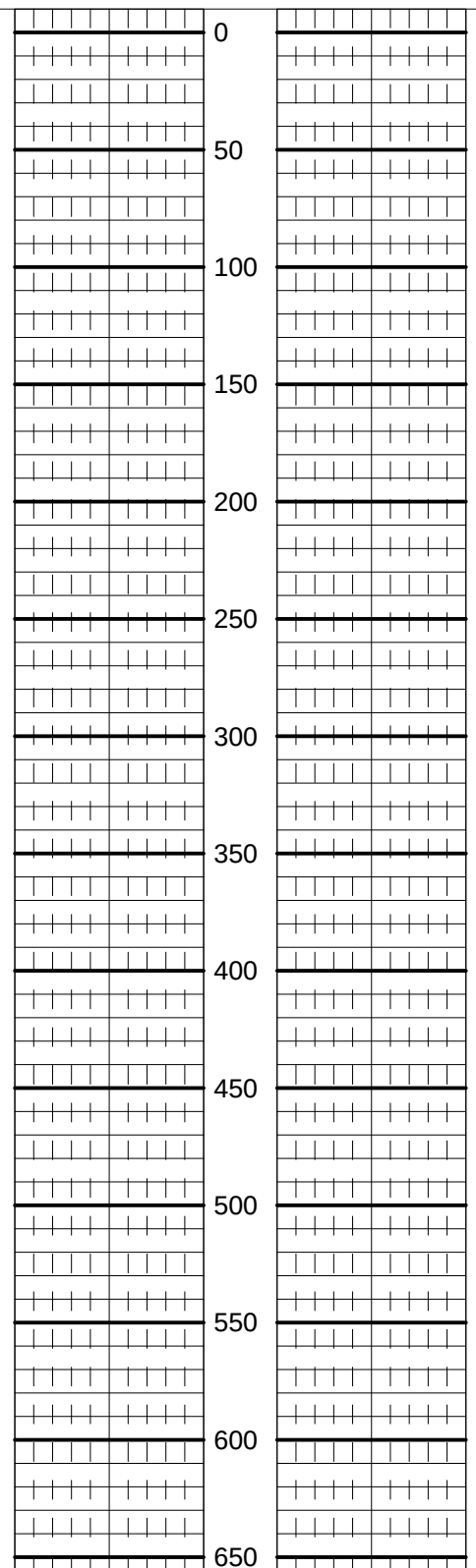
0 50 100

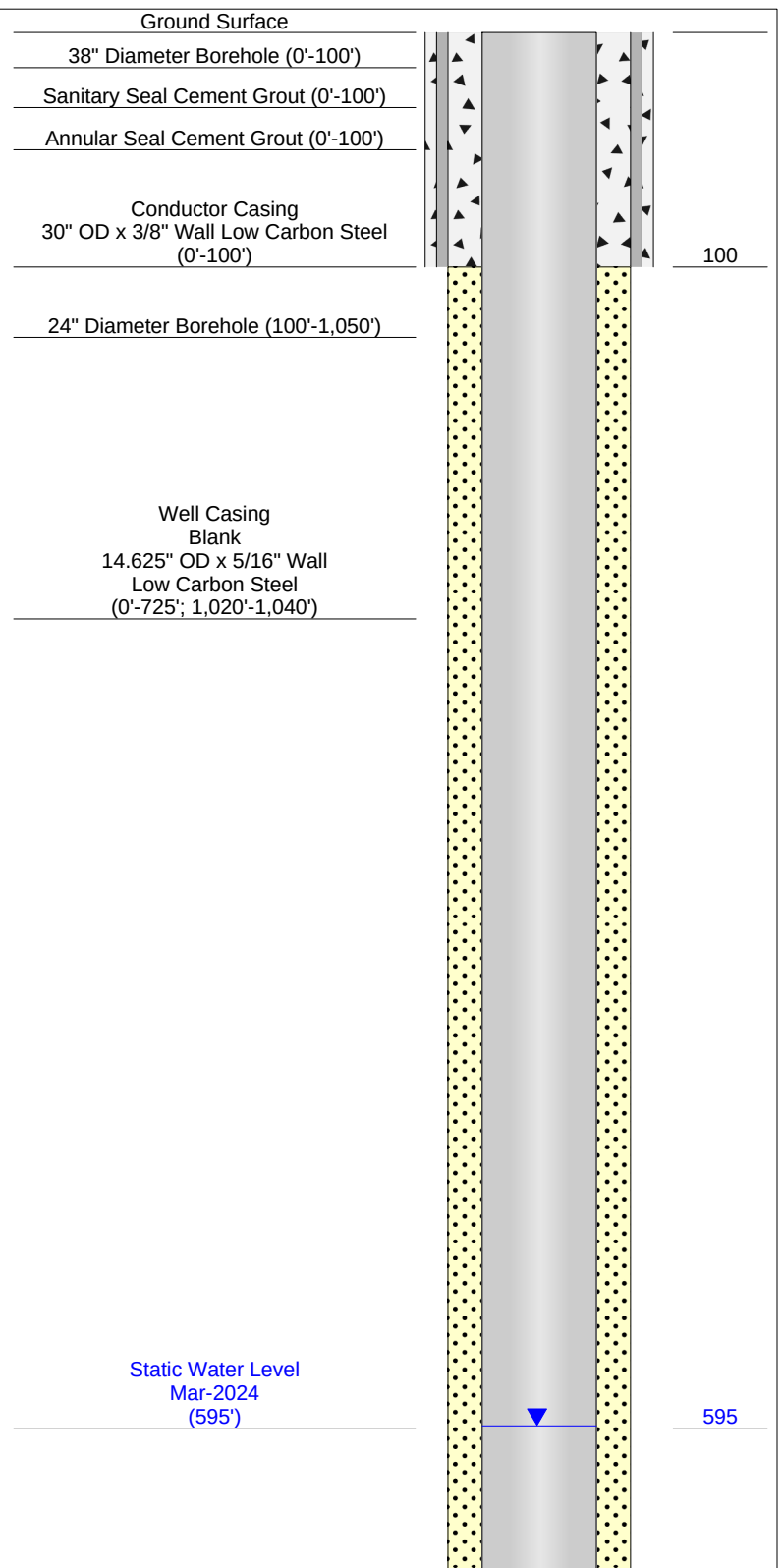
Feet

KYLE Groundwater

PROJECT NO.	FIGURE
3034.002	1

Lithology (Well Drillers Report)	Interpreted USCS Field Classification
sand, gravel and rocks	N/A
coarse sand, gravel, and cobbles	SP
coarse to fine sand, gravel and rocks	SP
coarse to fine sand, gravel, cobbles and rocks	SP
sand, gravel, brown clay	GP
sand, gravel, cobbles and rocks	GP
gravel, coarse sand and brown clay	SP
sand and gravel	GP
sand and brown clay	SP
sand, gravel, cobbles and rocks	GP
sand, cobbles and brown clay	SP
sand, gravel, cobbles and rocks	SP





AS-BUILT PROFILE - MISSION SPRINGS WATER DISTRICT WELL 35

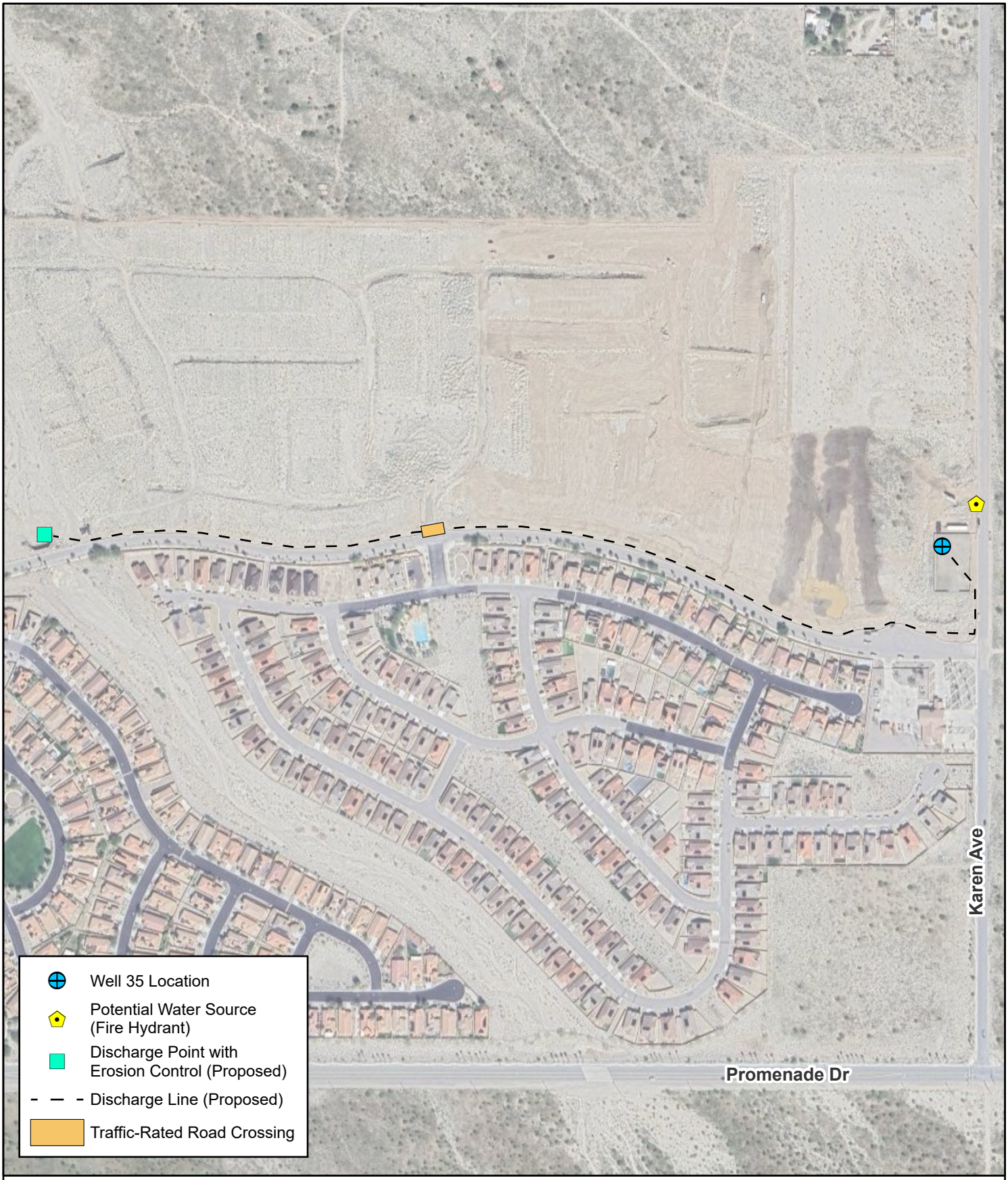
WELL 35
PHASE II - DIAGNOSTICS, REHABILITATION, REDEVELOPMENT, AND TESTING
MISSION SPRINGS WATER DISTRICT
DESERT HOT SPRINGS, CALIFORNIA
APRIL 2024

STEEL TYPE: Low Carbon Steel
PERFORATION TYPE/SIZE: Ful-Flo Louvered / 0.090 in
SCREEN INTERVALS (ft bgs): 725-1,020
BLANK INTERVALS (ft bgs): 0-725; 1,020-1,040
CONSTRUCTION YEAR: 2007

DRAWN BY: K.MAKAR
APPROVED BY: R.KYLE

KYLE Groundwater

PROJECT NO.	FIGURE
3034.001	2



DISCHARGE LOCATION MAP

WELL 35
PHASE II - DIAGNOSTICS, REHABILITATION, REDEVELOPMENT, AND TESTING
MISSION SPRINGS WATER DISTRICT
DESERT HOT SPRINGS, CALIFORNIA
APRIL 2024

N

0 200 400

Feet

KYLE Groundwater

PROJECT NO.	FIGURE
3034.002	7

TABLES

Table 1

Required Water Quality Analytical Suite
Title 22 - Completed Well Water Quality
Mission Springs Water District Well 35

Constituent	Units	MRL
General Physical Properties		
Color	color unit	3
Odor	odor unit	1
Turbidity	NTU	0.02
General Chemical Analyses		
Aggressive Index	-	-
Alkalinity, Total (as calcium carbonate)	mg/L	3
Bicarbonate	mg/L	3
Carbonate	mg/L	3
Chloride	mg/L	1
Fluoride	mg/L	0.1
Hydroxide	mg/L	3
Langlier Index at Source Temperature	-	-
MBAS/Surfactants	mg/L	0.05
Nitrate (as N)	mg/L	0.2
Nitrite (as N)	mg/L	0.1
Perchlorate	µg/L	0.1
pH	pH unit	-
Specific Conductance	µmhos/cm	1
Sulfate	mg/L	0.5
Sulfide, Total	mg/L	0.25
Total Filterable Residue / Total Dissolved Solids	mg/L	20
Total Hardness	mg/L	3
Metals		
Aluminum	µg/L	50
Antimony	µg/L	6
Arsenic	µg/L	2
Barium	µg/L	100
Beryllium	µg/L	1
Boron	µg/L	100
Cadmium	µg/L	1
Calcium	mg/L	1
Chromium, Total	µg/L	1
Chromium, Hexavalent	µg/L	0.02
Copper	µg/L	10
Cyanide	mg/L	0.1
Fluoride	mg/L	0.1
Iron	µg/L	20
Lead	µg/L	5
Magnesium	mg/L	1
Manganese	µg/L	10
Mercury	µg/L	1
Nickel	µg/L	10

Required Water Quality Analytical Suite
Title 22 - Completed Well Water Quality
Mission Springs Water District Well 35

Constituent	Units	MRL
Potassium	mg/L	1
Selenium	µg/L	5
Silica (Total)	mg/L	1
Silver	µg/L	10
Sodium	mg/L	1
Thallium	µg/L	1
Vanadium	µg/L	3
Zinc	µg/L	10
Volatile and Semi-Volatile Organics		
1,4-dioxane (EPA 522)	µg/L	0.5
Carbamate Pesticides (EPA 531)	µg/L	varies
Chlorinated Herbicides (EPA 515.4)	µg/L	varies
Chlorinated Pesticides and PCBs (EPA 508)	µg/L	varies
DBCP and EDB (EPA 504.1)	µg/L	varies
DEHP, DEHA, Benzo(a)Pyrene (EPA 525.2)	µg/L	varies
Dioxin (EPA 1613)	µg/L	0.000005
Diquat (EPA 549.1)	µg/L	4
Endothall (EPA 548.1)	µg/L	45
Glyphosate (EPA 547)	µg/L	25
MTBE (EPA 524.2)	µg/L	0.5
Nitrogen and Phosphorous Pesticides (EPA 525.2)	µg/L	varies
Thiobencarb (EPA 525.2)	µg/L	0.1
Volatile Organic Compounds (EPA 524.2)	µg/L	varies
Radioactivity		
Gross Alpha	pCi/L	3
Gross Beta	pCi/L	3
Radium 226	pCi/L	1
Radium 228	pCi/L	1
Radon	pCi/L	10
Uranium	pCi/L	1
Additional Analyses		
1,2,3-Trichloropropane (1,2,3-TCP)	µg/L	0.005
Asbestos	MFL	0.2
PFAS (EPA Method 533)		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	µg/L	0.005
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid (8:2FTS)	µg/L	0.005
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid (4:2FTS)	µg/L	0.003
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid (6:2FTS)	µg/L	0.005
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	µg/L	0.003
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	µg/L	0.002
Hexafluoropropylene oxide dimer acid (HFPO-DA)(GenX)	µg/L	0.005
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	µg/L	0.02
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	µg/L	0.003

Required Water Quality Analytical Suite
Title 22 - Completed Well Water Quality
Mission Springs Water District Well 35

Constituent	Units	MRL
Perfluoro-3-methoxypropanoic acid (PFMPA)	µg/L	0.004
Perfluoro-4-methoxybutanoic acid (PFMBA)	µg/L	0.003
Perfluorobutanesulfonic acid (PFBS)	µg/L	0.003
Perfluorobutanoic acid (PFBA)	µg/L	0.005
Perfluorodecanoic acid (PFDA)	µg/L	0.003
Perfluorododecanoic acid (PFDoA)	µg/L	0.003
Perfluoroheptanesulfonic acid (PFHpS)	µg/L	0.003
Perfluoroheptanoic acid (PFHpA)	µg/L	0.003
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.003
Perfluorohexanoic acid (PFHxA)	µg/L	0.003
Perfluorononanoic acid (PFNA)	µg/L	0.004
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.004
Perfluorooctanoic acid (PFOA)	µg/L	0.004
Perfluoropentanesulfonic acid (PFPeS)	µg/L	0.004
Perfluoropentanoic acid (PFPeA)	µg/L	0.003
Perfluoroundecanoic acid (PFUnA)	µg/L	0.002
PFAS (EPA Method 537.1)		
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.005
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	µg/L	0.006
Perfluorotetradecanoic acid (PFTA)	µg/L	0.008
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.007

NTU: nephelometric turbidity units
mg/L: milligrams per liter
µg/L: micrograms per liter
µmhos/cm: micromhos per centimeter
pCi/L: picocuries per liter
MFL: million fibers per liter

ATTACHMENT A

Well Completion Report

Mission Springs Water District Well 35

KYLE Groundwater

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e053400

Page 1 of 1

Owner's Well Number 2

Date Work Began 01/12/2007 Date Work Ended 4/10/2007

Local Permit Agency Riverside County Department of Environmental Health

Permit Number 06-32204 Permit Date 12/20/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Circulation Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	35	Sand, gravel and rocks.
35	215	Coarse sand, gravel, and cobbles.
215	280	Coarse to fine sand, gravel and rocks.
280	370	Coarse to fine sand, gravel, cobbles and rocks.
370	390	Sand, gravel, brown clay.
390	610	Sand, gravel, cobbles and rocks.
610	655	Gravel, coarse sand and brown clay.
655	680	Sand and gravel.
680	685	Sand and brown clay.
685	755	Sand, gravel, cobbles and rocks.
755	775	Sand, cobbles and brown clay.
775	1,050	Sand, gravel, cobbles and rocks.

Total Depth of Boring 1050 Feet

Total Depth of Completed Well 1040 Feet

Well Owner

Name D.R. Horton

Mailing Address 11870 Pierce Street Ste. 250

City Riverside State CA Zip 92505

Well Location

Address West side of Karen Ave. between Scenic Dr and Pierson

City Desert Hot Springs County Riverside

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

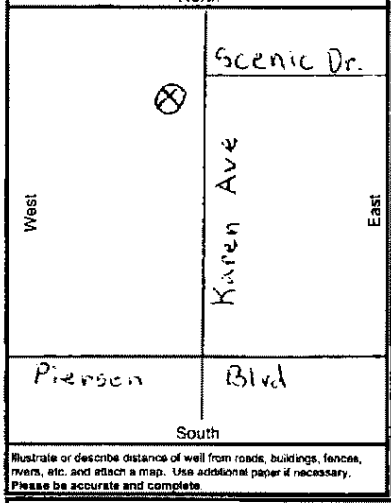
Datum Decimal Lat. Decimal Long.

APN Book 667 Page 290 Parcel 083

Township 2 S Range 4 E Section 28

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☑ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 440 (Feet below surface)

Depth to Static Water Level 440 (Feet) Date Measured 01/28/2007

Estimated Yield * 1,000 (GPM) Test Type Constant Rate

Test Length 24.0 (Hours) Total Drawdown 30 (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	100	38	Conductor	Low Carbon Steel	.375	30		
0	725	24	Blank	Low Carbon Steel	.312	14.625		
725	1,020	24	Screen	Low Carbon Steel	.312	14.625	Louver	0.090
1,020	1,040	24	Blank	Low Carbon Steel	.312	14.625		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	100	Cement	
0	100	Cement	
100	1,050	Filter Pack	4x12 Tacna

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Layne Christensen Company
Person, Firm or Corporation

11001 Etiwanda Avenue Fontana CA 92337
Address City State Zip

Signed [signature] 4-17-2007
C-57 Licensed Water Well Contractor Date Signed

510011
C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ATTACHMENT B

14-Mar-24 Downhole Video Survey Report

Mission Springs Water District Well 35

KYLE Groundwater

WATER WELL VIDEO REPORT

35

Mission Springs

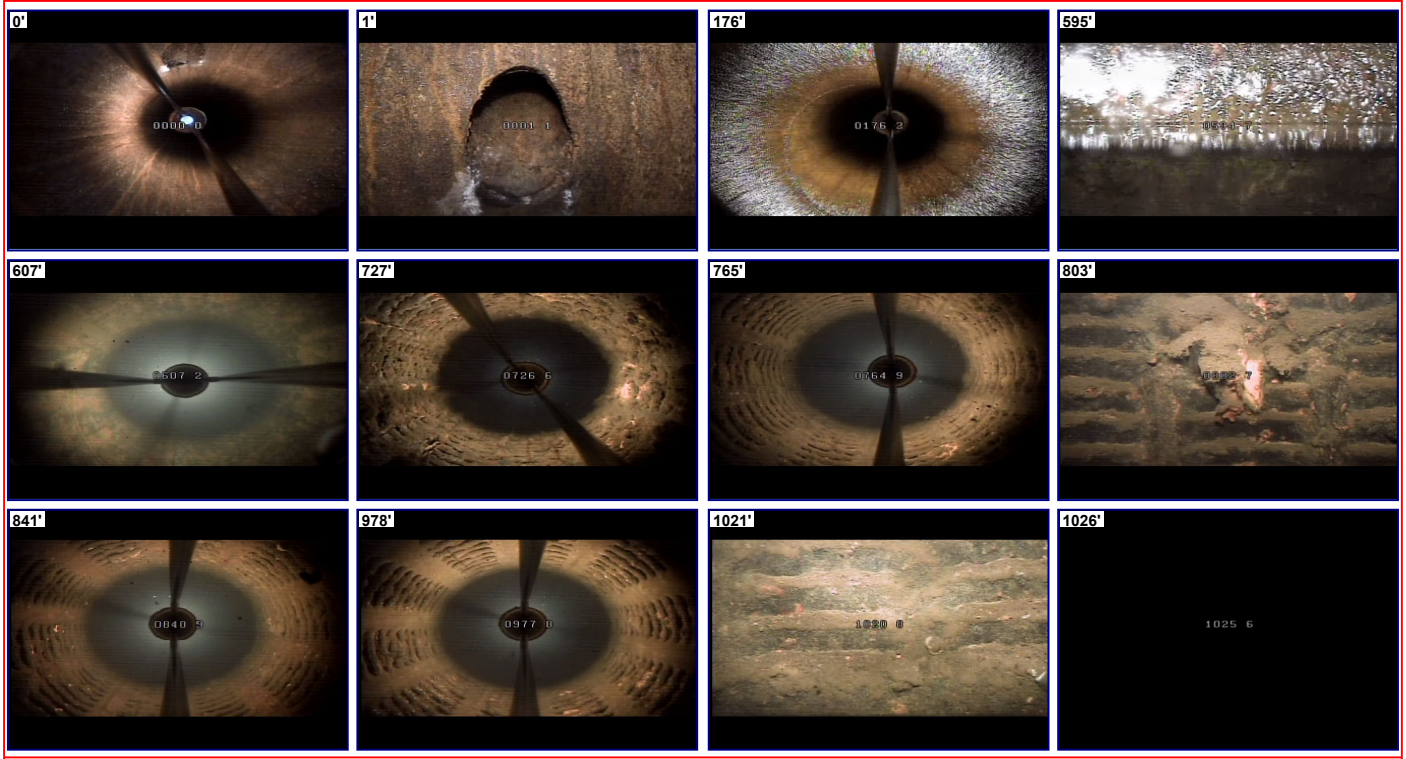
Water Well Redevelpoers Inc.

4800 Via Del Corral Yorba Linda, CA. 92887

Phone: 174-392-5609 Web: waterwellredevelopers.com

Client:	Mission Springs Water District	Survey Date:	March 14, 2024
Address:	66575 2nd st	Invoice No.:	31246 Run: 2
City:	Desert Hot Springs, CA 92240	P.O.:	23169 Van: 1
County:		Operator:	Jason
Requested By:	Legend	Type Camera:	
Copy To:	Legend, Mission Springs	Latitude:	33° 57' 57.5" Longitude: 116° 33' 46.6"
Reason For Survey:	Specific	Section:	TWP: Range:
Location:	11037 Karen Ave, Desert Hot Springs, Ca 92240		
Field:			
Other Information:			

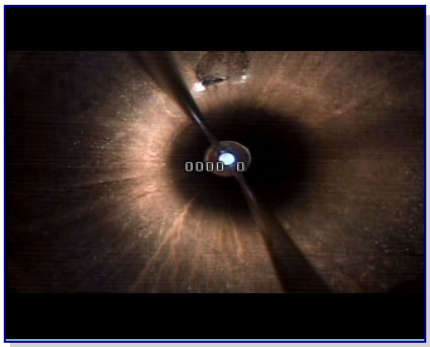
CASING INFORMATION		DEPTHS (SideScan)	VIDEO OBSERVATIONS
Louvers	**Well Depth**	0.0 Ft.	Video start at ground level
726.6-1025.6 Ft.	1025.6 Ft.	1.1 Ft.	Access pipe
		2-550 Ft.	Casing appears clean
	S.W.L	594.7 Ft.	Static water level
	594.7 Ft.	595.0 Ft.	Water quality fair
		607.2 Ft.	Casing appears clean
		650.0 Ft.	Appears to be mineral scale
		700.0 Ft.	Water quality good
		726.6 Ft.	Start of louver perforations, appear plugged
		730.0 Ft.	Heavy mineral scale on casing
		764.7 Ft.	Perforations appear plugged
		802.7 Ft.	Scattered nodules
	17" O.D. Casing	840.0 Ft.	Perforations appear plugged, lighter mineral scale
	0-1.2 Ft.	860.0 Ft.	Scattered larger nodules
	Type: Steel	901.0 Ft.	Perforations appear resctricted to plugged
		1,020.8 Ft.	End of louver perforations
	14" O.D. Casing	1,025.6 Ft.	Total well depth
Dia. Reference	1.2-1025.6 Ft.		
Measured	Type: Steel		
Casing Buildup			
Heavy			



Notes: Re-video log of Well #35, Survey start at ground level.

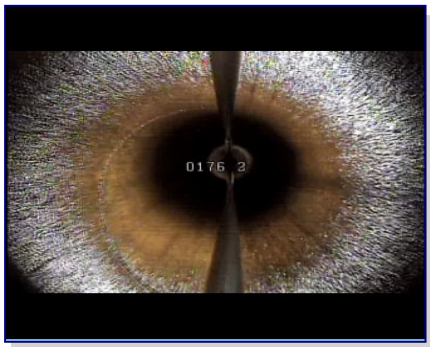
WELLBORE SNAPSHOT(S)

Depth: 0 Feet



Depth: 1 Feet

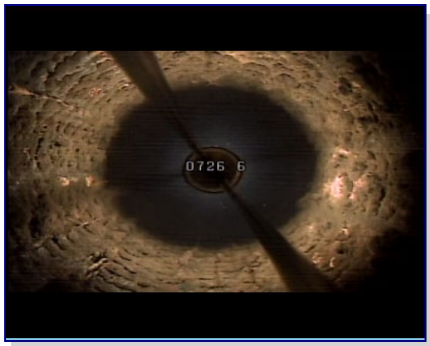
Depth: 176 Feet



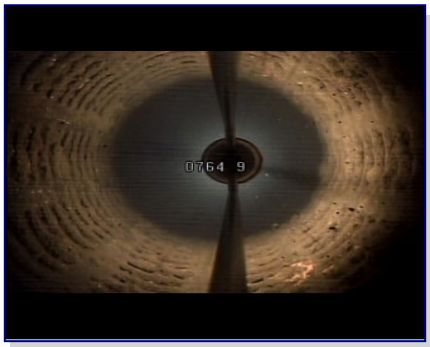
Depth: 595 Feet

Depth: 607 Feet

Depth: 727 Feet

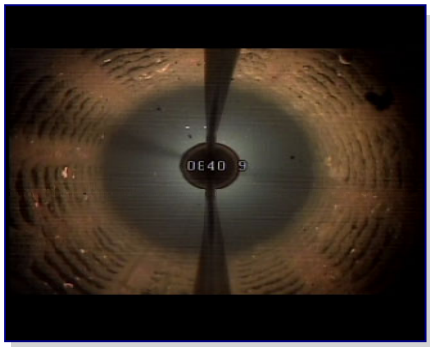


Depth: 765 Feet

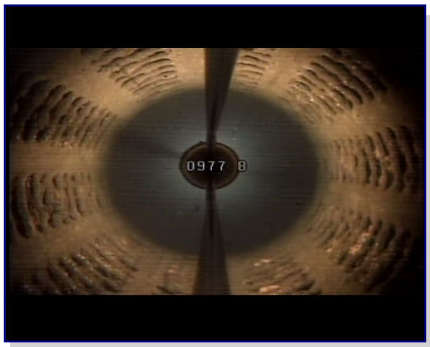


Depth: 803 Feet

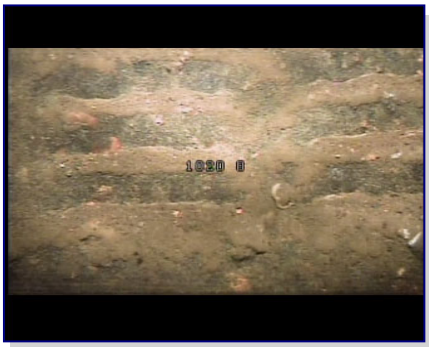
Depth: 841 Feet



Depth: 978 Feet



Depth: 1021 Feet



Depth: 1026 Feet

ATTACHMENT C

Electro-Magnetic Defecto-Scope (EMDS) Survey Report

Mission Springs Water District Well 35

KYLE Groundwater

PACIFIC SURVEYS

CASING INSPECTION LOG
EMT-24

Job No. 32368

File No.

Company LEGEND PUMP & WELL SERVICE, INC.

Well MISSION SPRINGS WELL # 35

Field DESERT HOT SPRINGS

County RIVERSIDE State CA

Location:

11037 - 11099 KAREN AVE
GPS: 33.96584 -116.56314

Sec. Twp. Rge.

Other Services:

NONE

Permanent Datum	T.O.C.	Elevation above perm. datum	Elevation K.B. D.F. G.L.
Log Measured From	T.O.C. 0'		
Drilling Measured From	G.L.		

Date	02/13/2024		
Run Number	ONE		
Depth Driller	1040'		
Depth Logger	1034'		
Bottom Logged Interval	1034'		
Top Log Interval	0'		
Open Hole Size	N/A		
Type of Caliper	N/A		
Cement Interval	N/A		
Max. Recorded Temp.	82.9 F		
EMDS Calibration	N/A		
Time Well Ready	7:30 AM		
Time Logger on Bottom	8:15 AM		
Equipment Number	PS-14		
Location	LA		
Recorded By	E. AFOH		
Witnessed By	-------		

Perforation Record				Perforation Record			
Type	Slot Size	From	To	Type	Slot Size	From	To
LOUVERS	0.090"	725'	1020'				

Casing Record	Size	Wall (in)	Top	Bottom
Surface String	30.0" OD	0.375"	0'	100'
Production String				
Production String	14.625" OD	0.3125"	1.3'	1040'
Production String				
Liner				

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pacific Surveys cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Pacific Surveys' general terms and conditions set out in our current Price Schedule.

Comments

MEASURED 14-INCH ID CASING FROM 1.3 FT FROM TOP OF CASING/SOLE PLATE
ASSUMING U.S STANDARD 8 GAUGE CASING.

Calibration Report

Database File c:\users\rose1\pacific dropbox\field data\other analysis\32368 needs emt processing\32368.db
Dataset Pathname EMT-UP
Dataset Creation Tue Feb 13 08:39:22 2024

Temperature Calibration Report

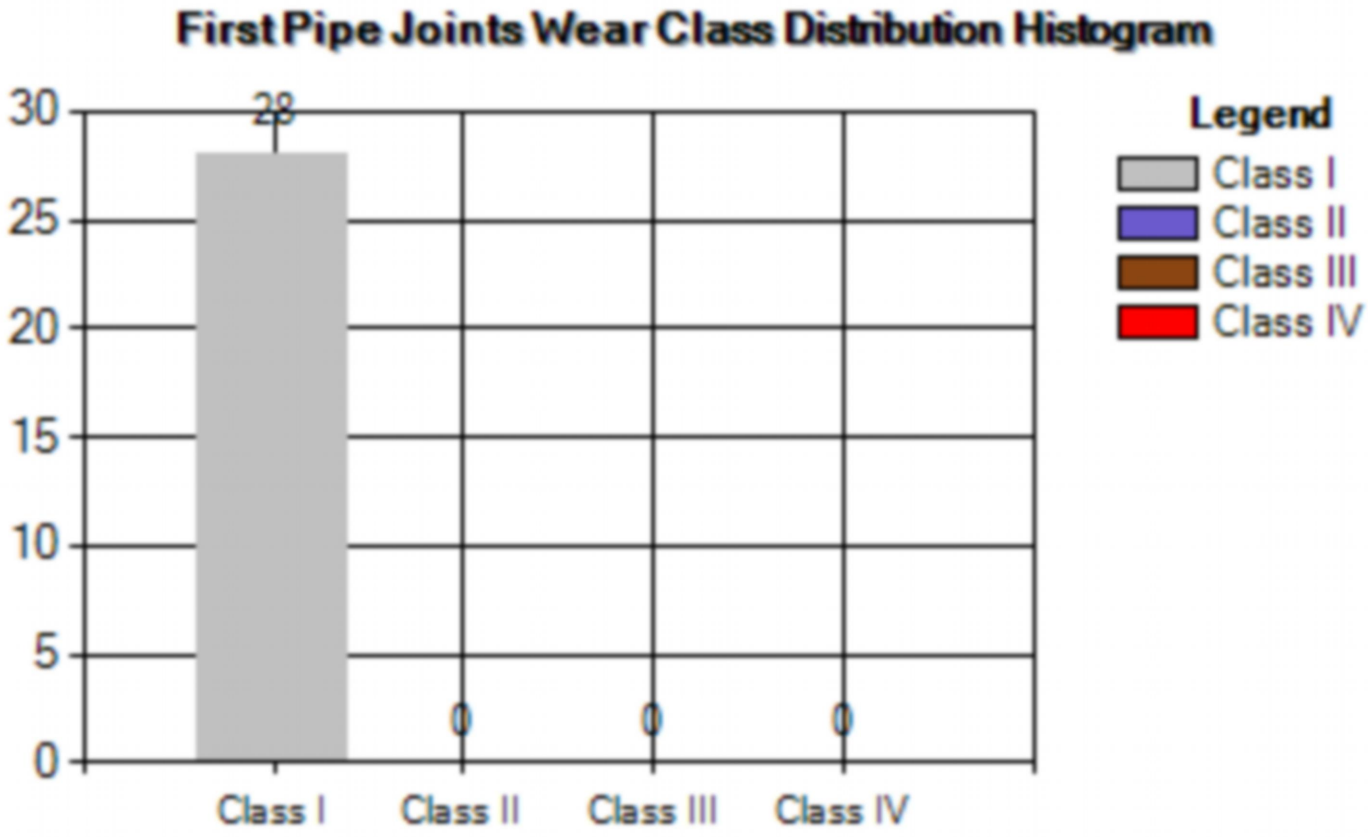
Serial Number: RDT14-1913002
Tool Model: RDT14
Performed: Tue May 12 12:25:29 2020

Point #	Reading		Reference	
1	14019.00	cps	79.56	degF
2	25472.00	cps	150.08	degF
3	35363.00	cps	211.64	degF
4	45528.00	cps	276.62	degF
5	56009.00	cps	346.64	degF
6		cps		degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Table	Description of Report Table Column
Joint No.	*Joint name*
Top	*Joint top depth in depth units*
Bottom	*Joint bottom depth in depth units*
Length	*Joint Length in depth units*
AvrgIR	*Average inside radius in radius units*
MaxIR	*Maximum inside radius in radius units*
MaxIRDepth	*Depth of maximum inside radius (maximum inside wear point)*
Min. Thick.	*Minimal joint wall thickness*
Avrg. RW	*Average remaining pipe wall thickness in percentages*
Min. RW	*Minimal remaining pipe wall thickness in percentages*
Min.RW Depth	*Depth of minimal pipe wall thickness point*

Joint No.	Top feet	Bottom feet	Length feet	Avrg. IR in	Max. IR in	Max IR Depth feet	Corrosion Profile 14.625in OD LCS	Min. Thick. in	Avrg. RW %	Min. RW %	Min RW Depth feet
Joint 1	6.00	23.60	17.60	7.007	7.012	17.00		0.298	97.6	95.5	17.10
Joint 2	23.60	63.80	40.20	7.011	7.015	39.50		0.295	96.2	94.5	34.00
Joint 3	63.80	103.70	39.90	7.010	7.015	81.50		0.284	96.3	91.1	71.40
Joint 4	103.70	143.80	40.10	7.009	7.012	112.70		0.284	95.7	91.1	110.60
Joint 5	143.80	183.90	40.10	7.006	7.010	179.30		0.289	97.0	92.6	180.60
Joint 6	183.90	223.80	39.90	7.007	7.010	222.80		0.290	97.1	92.9	190.60
Joint 7	223.80	264.10	40.30	7.008	7.013	224.80		0.291	96.5	93.2	231.70
Joint 8	264.10	304.10	40.00	7.008	7.012	303.00		0.281	96.3	90.0	270.70
Joint 9	304.10	344.10	40.00	7.007	7.012	311.30		0.279	96.7	89.4	310.90
Joint 10	344.10	384.10	40.00	7.005	7.012	374.70		0.281	97.6	90.0	351.90
Joint 11	384.10	424.10	40.00	7.008	7.012	385.10		0.278	96.1	89.0	391.60
Joint 12	424.10	464.10	40.00	7.009	7.012	463.00		0.278	95.8	89.1	431.70
Joint 13	464.10	504.20	40.10	7.009	7.012	503.00		0.287	95.9	92.0	471.70
Joint 14	504.20	544.30	40.10	7.009	7.012	543.00		0.289	95.8	92.6	543.30
Joint 15	544.30	584.60	40.30	7.010	7.012	568.40		0.288	95.7	92.2	551.70
Joint 16	584.60	624.80	40.20	7.009	7.012	620.80		0.284	95.4	91.1	590.90
Joint 17	624.80	665.10	40.30	7.011	7.013	641.90		0.275	94.8	88.0	664.10
Joint 18	665.10	705.50	40.40	7.011	7.015	683.00		0.280	93.9	89.7	672.80
Joint 19	705.50	730.60	25.10	7.009	7.013	729.50		0.290	95.5	93.1	726.60
Joint 20	730.60	746.00	15.40	7.004	7.010	740.20		0.281	93.6	90.2	732.10
Joint 21	746.00	786.00	40.00	7.005	7.011	753.30		0.282	93.5	90.3	757.20
Joint 22	786.00	826.00	40.00	7.002	7.005	796.60		0.298	97.5	95.4	798.80
Joint 23	826.00	866.10	40.10	7.002	7.006	863.50		0.286	96.4	91.5	857.70
Joint 24	866.10	906.10	40.00	7.002	7.004	887.10		0.297	96.6	95.1	899.80
Joint 25	906.10	946.30	40.20	7.003	7.007	925.20		0.290	95.3	93.0	924.20
Joint 26	946.30	986.10	39.80	7.000	7.003	961.40		0.300	98.2	96.1	953.70
Joint 27	986.10	1026.60	40.50	7.001	7.004	1006.80		0.295	97.7	94.6	1005.20
Joint 28	1026.60	1031.00	4.40	7.002	7.003	1027.70		0.307	99.1	98.5	1027.60

Table	Class	From %	To %	Description	Count	Perc. %
Class 1	Class I	0.0	15.0	VeryLight	28.0	100.0
Class 2	Class II	15.0	25.0	Light	0.0	0.0
Class 3	Class III	25.0	50.0	Moderate	0.0	0.0
Class 4	Class IV	50.0	100.0	Significant	0.0	0.0

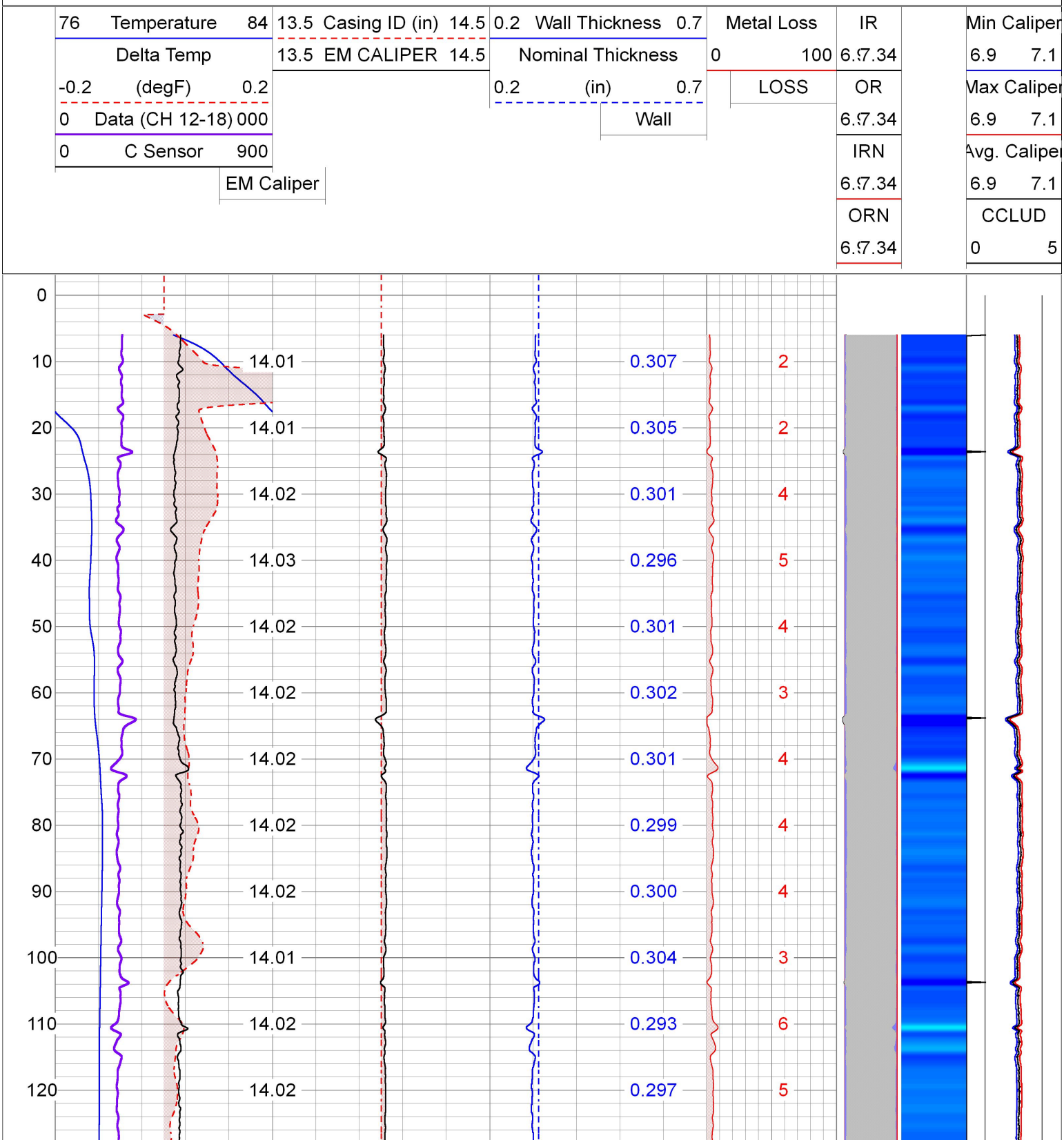

First Pipe Joints Wear Class Distribution Histogram
30
25
20
15
10
5
0
28
0
0
0
Class I
Class II
Class III
Class IV
Legend
Class I
Class II
Class III
Class IV

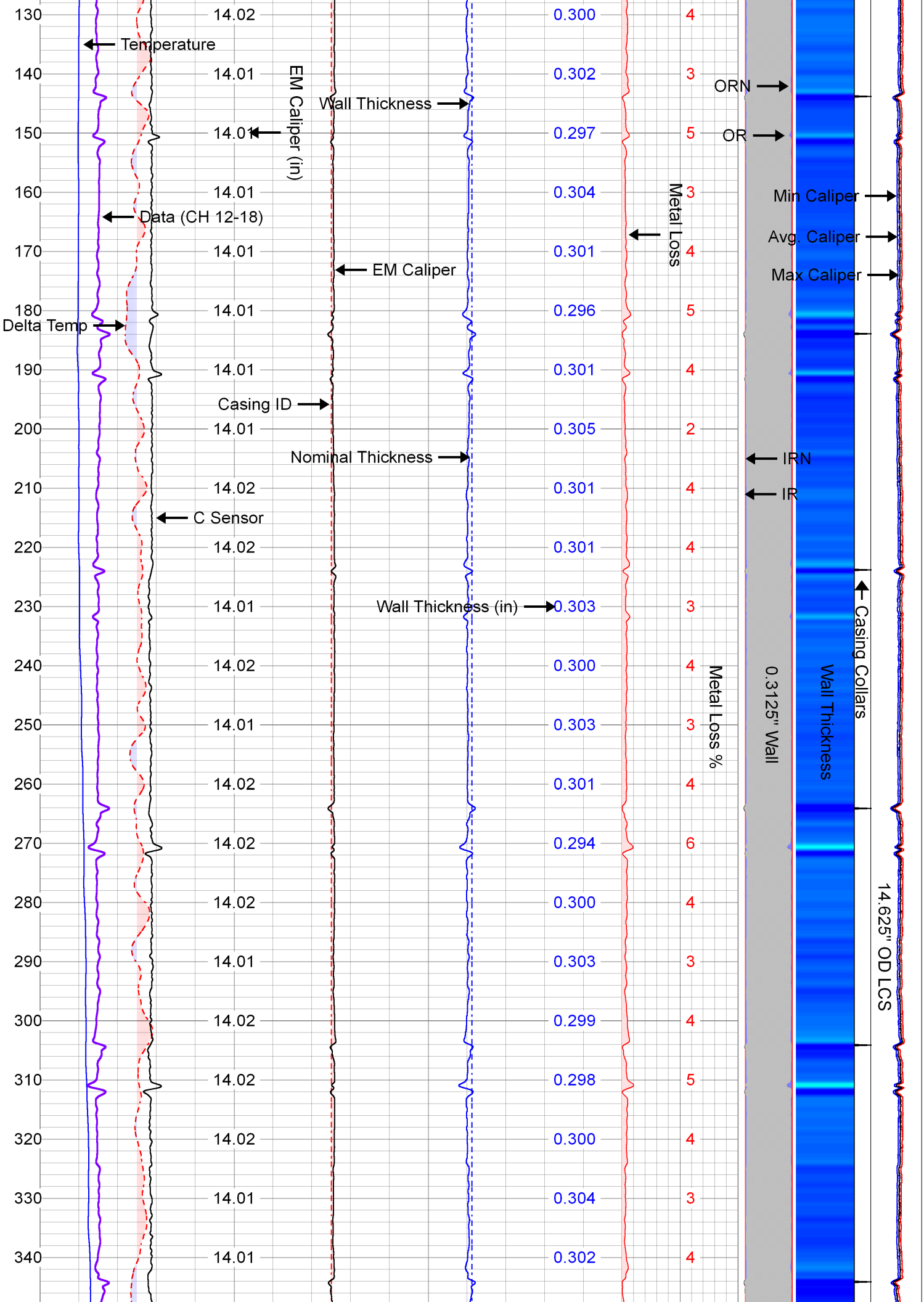
Parameter	Description	Min	Max
MTTAvrg	MTT Thickness Joint Average	0	100
MTTMax	MTT Thickness Joint Maximum	0	100
MTTMin	MTT Thickness Joint Minimum	0	100
MTTMinDepth	Depth Position of MTT Thickness Joint Minimum	0	100000
MTTMaxDepth	Depth Position of MTT Thickness Joint Maximum	0	100000
MTTPercDmg	MTT Joint Maximum Damage Percentage	-100	100
Class	Joint Wall Loss Class	0	10
MetalLossPercAVRG	Metal Loss Percentage Average.	0	100

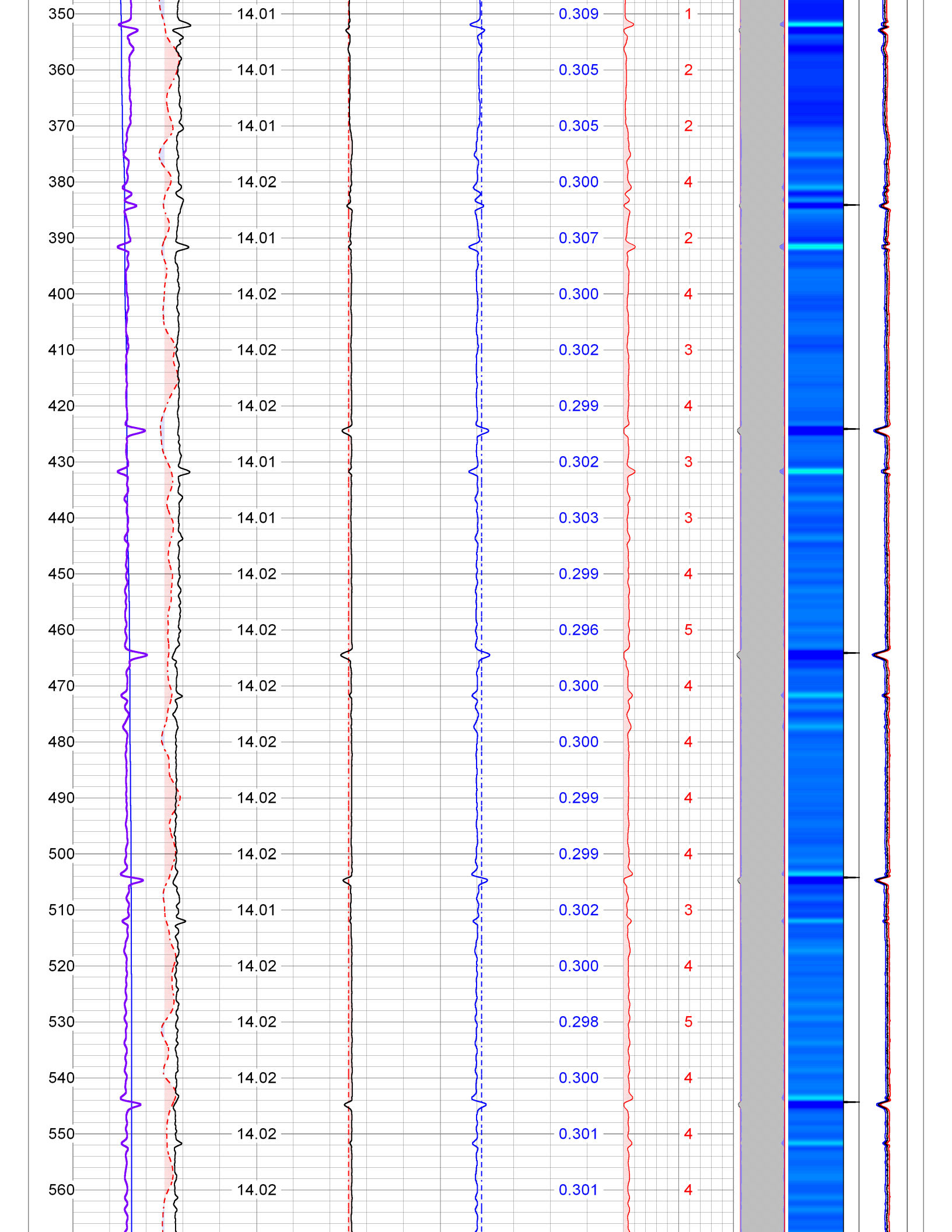
Zones	Top	Bottom	MTTAvrg	MTTMax	MTTMin	MTTMinDepth	MTTMaxDepth	MTTPercDmg	Class	MetalLossPercAVRG
Joint 1	6.0	23.6	0.304	0.308	0.298	17.1	18.4	4.5	1	2.4
Joint 2	23.6	63.8	0.300	0.308	0.295	34.0	35.4	5.5	1	3.7
Joint 3	63.8	103.7	0.300	0.314	0.284	71.4	64.8	8.9	1	3.7
Joint 4	103.7	143.8	0.299	0.305	0.284	110.6	115.0	8.9	1	4.3
Joint 5	143.8	183.9	0.303	0.314	0.289	180.6	151.5	7.4	1	3.0
Joint 6	183.9	223.8	0.303	0.315	0.290	190.6	191.6	7.1	1	3.0
Joint 7	223.8	264.1	0.301	0.304	0.291	231.7	252.1	6.8	1	3.4
Joint 8	264.1	304.1	0.301	0.314	0.281	270.7	271.7	10.1	1	3.7
Joint 9	304.1	344.1	0.302	0.316	0.279	310.9	312.0	10.6	1	3.3
Joint 10	344.1	384.1	0.305	0.321	0.281	351.9	352.9	10.0	1	2.6
Joint 11	384.1	424.1	0.300	0.308	0.278	391.6	390.3	11.0	1	3.9
Joint 12	424.1	464.1	0.299	0.312	0.278	431.7	425.1	10.9	1	4.2
Joint 13	464.1	504.2	0.299	0.316	0.287	471.7	465.1	8.0	1	4.1
Joint 14	504.2	544.3	0.299	0.316	0.289	543.3	505.2	7.4	1	4.2
Joint 15	544.3	584.6	0.299	0.312	0.288	551.7	545.3	7.8	1	4.3
Joint 16	584.6	624.8	0.298	0.307	0.284	590.9	623.0	8.9	1	4.5
Joint 17	624.8	665.1	0.296	0.308	0.275	664.1	625.8	12.0	1	5.1
Joint 18	665.1	705.5	0.293	0.321	0.280	672.8	666.1	10.3	1	6.2
Joint 19	705.5	730.6	0.298	0.304	0.290	726.6	707.8	6.9	1	4.5
Joint 20	730.6	746.0	0.292	0.329	0.281	732.1	745.0	9.8	1	6.9
Joint 21	746.0	786.0	0.292	0.316	0.282	757.2	747.0	9.7	1	6.7
Joint 22	786.0	826.0	0.304	0.326	0.298	798.8	825.0	4.6	1	2.8
Joint 23	826.0	866.1	0.301	0.330	0.286	857.7	827.3	8.5	1	4.0
Joint 24	866.1	906.1	0.302	0.315	0.297	899.8	904.1	4.9	1	3.6
Joint 25	906.1	946.3	0.297	0.321	0.290	924.2	945.3	7.0	1	4.9
Joint 26	946.3	986.1	0.306	0.329	0.300	953.7	947.9	3.9	1	2.4
Joint 27	986.1	1026.6	0.305	0.331	0.295	1005.2	1025.6	5.4	1	2.6
Joint 28	1026.6	1031.0	0.309	0.310	0.307	1027.6	1030.0	1.5	1	0.9

Well Equipment	Type	Top (ft)	Bottom (ft)	OD (in)	ID (in)	Weight (lbs/ft)
Conductor	LCS	0	100	30.000	29.250	118.64
Casing	LCS	0	1040	14.625	14.000	47.76
Casing: Ful-Flo Louvers	LCS	725	1020	14.625	14.000	47.76

Database File	c:\users\rose1\pacific dropbox\field data\other analysis\32368 needs emt processing\32368.db
Dataset Pathname	32368_mission_spring_water_district_35_
Presentation Format	emt24_analysis
Dataset Creation	Fri Feb 23 07:45:32 2024
Charted by	Depth in Feet scaled 1:240




Temperature
Data (CH 12-18)
Delta Temp
C Sensor
EM Caliper (in)
Wall Thickness
EM Caliper
Casing ID
Nominal Thickness
Wall Thickness (in)
Metal Loss
Metal Loss %
ORN
OR
Min Caliper
Avg. Caliper
Max Caliper
IRN
IR
Casing Collars
0.3125" Wall
Wall Thickness
14.625" OD LCS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360 14.01 0.305 2
370 14.01 0.305 2
380 14.02 0.300 4
390 14.01 0.307 2
400 14.02 0.300 4
410 14.02 0.302 3
420 14.02 0.299 4
430 14.01 0.302 3
440 14.01 0.303 3
450 14.02 0.299 4
460 14.02 0.296 5
470 14.02 0.300 4
480 14.02 0.300 4
490 14.02 0.299 4
500 14.02 0.299 4
510 14.01 0.302 3
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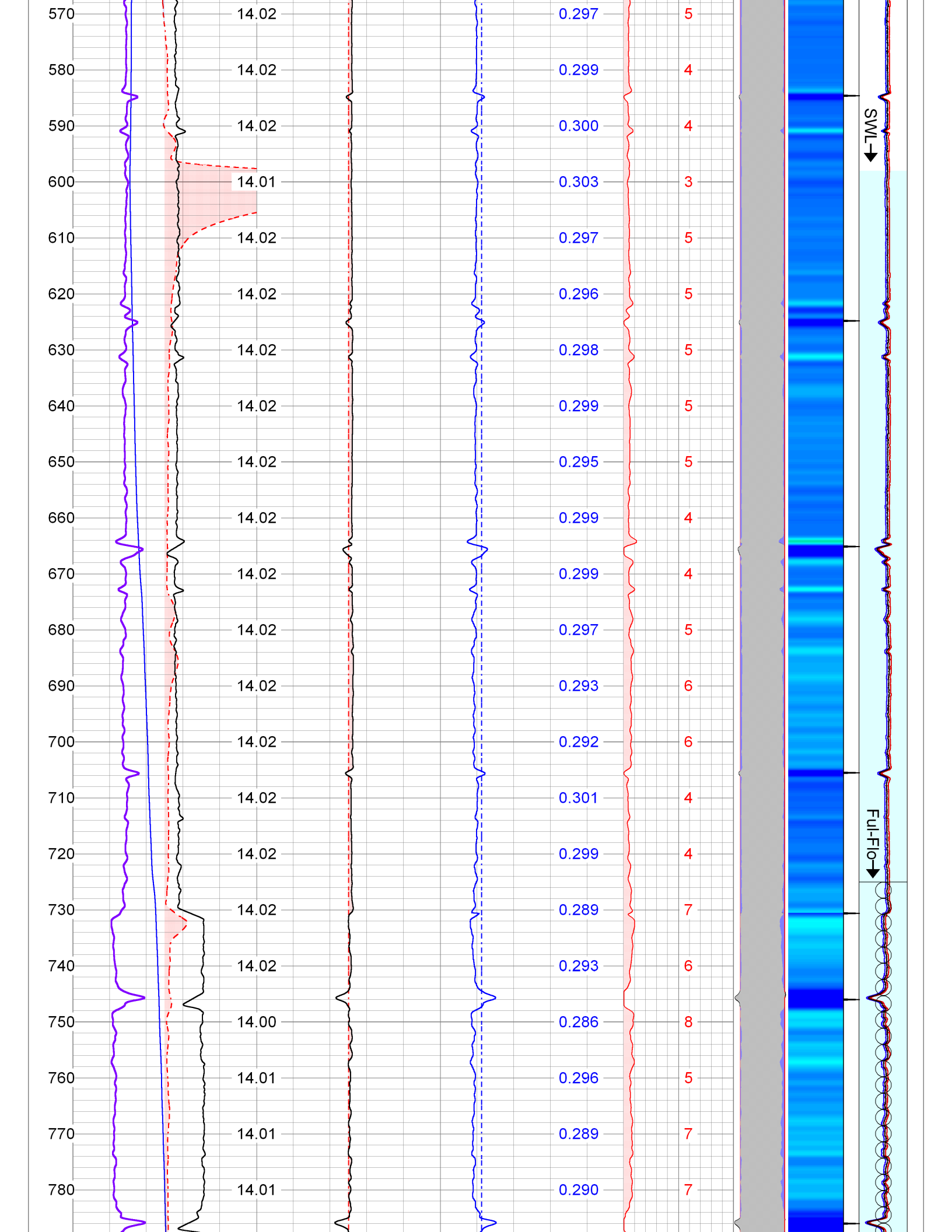
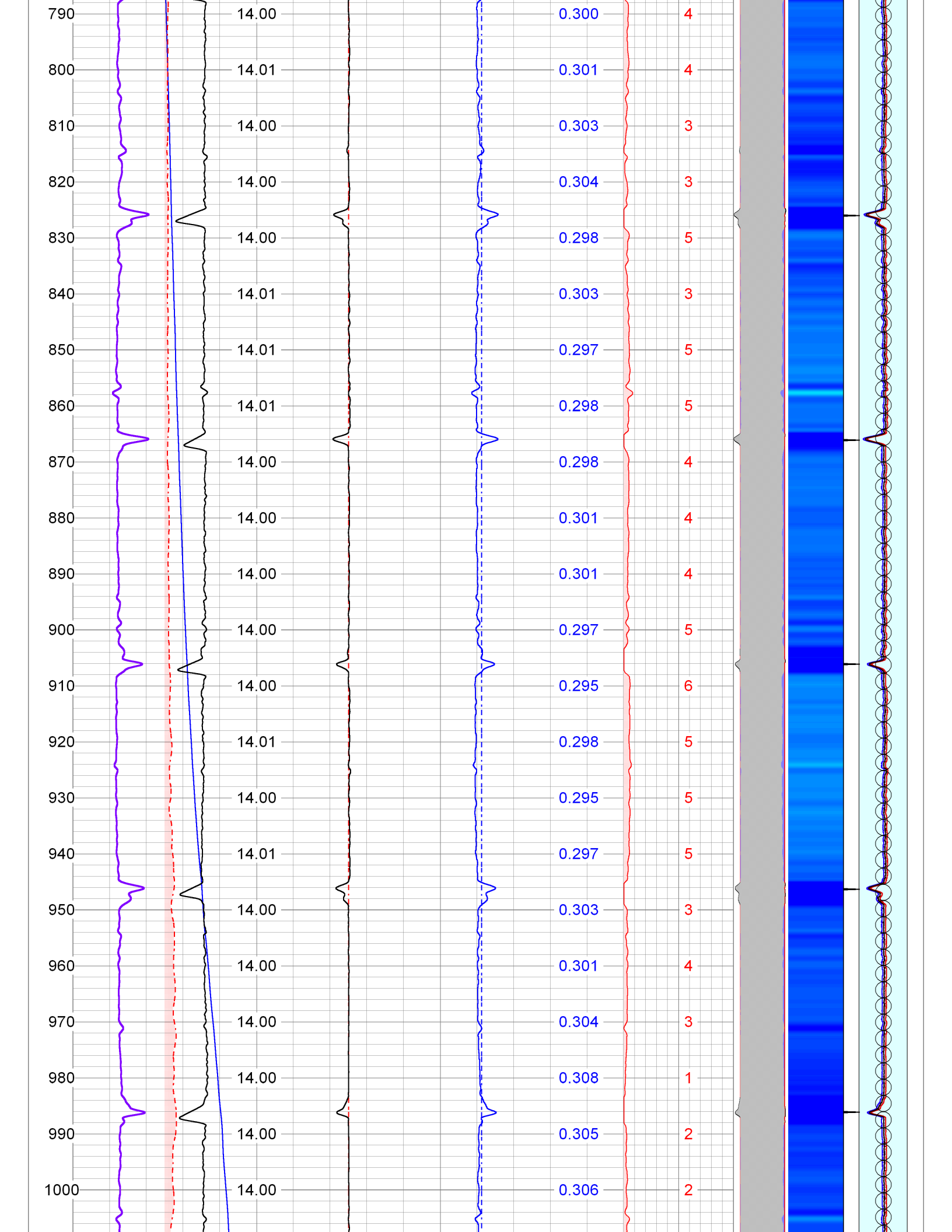
540 14.02 0.300 4
550 14.02 0.301 4
560 14.02 0.301 4


570 14.02 0.297 5
580 14.02 0.299 4
590 14.02 0.300 4
600 14.01 0.303 3
610 14.02 0.297 5
620 14.02 0.296 5
630 14.02 0.298 5
640 14.02 0.299 5
650 14.02 0.295 5
660 14.02 0.299 4
670 14.02 0.299 4
680 14.02 0.297 5
690 14.02 0.293 6
700 14.02 0.292 6
710 14.02 0.301 4
720 14.02 0.299 4
730 14.02 0.289 7
740 14.02 0.293 6
750 14.00 0.286 8
760 14.01 0.296 5
770 14.01 0.289 7
780 14.01 0.290 7
SWL
Ful-Flo


790 14.00 0.300 4
800 14.01 0.301 4
810 14.00 0.303 3
820 14.00 0.304 3
830 14.00 0.298 5
840 14.01 0.303 3
850 14.01 0.297 5
860 14.01 0.298 5
870 14.00 0.298 4
880 14.00 0.301 4
890 14.00 0.301 4
900 14.00 0.297 5
910 14.00 0.295 6
920 14.01 0.298 5
930 14.00 0.295 5
940 14.01 0.297 5
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960 14.00 0.301 4
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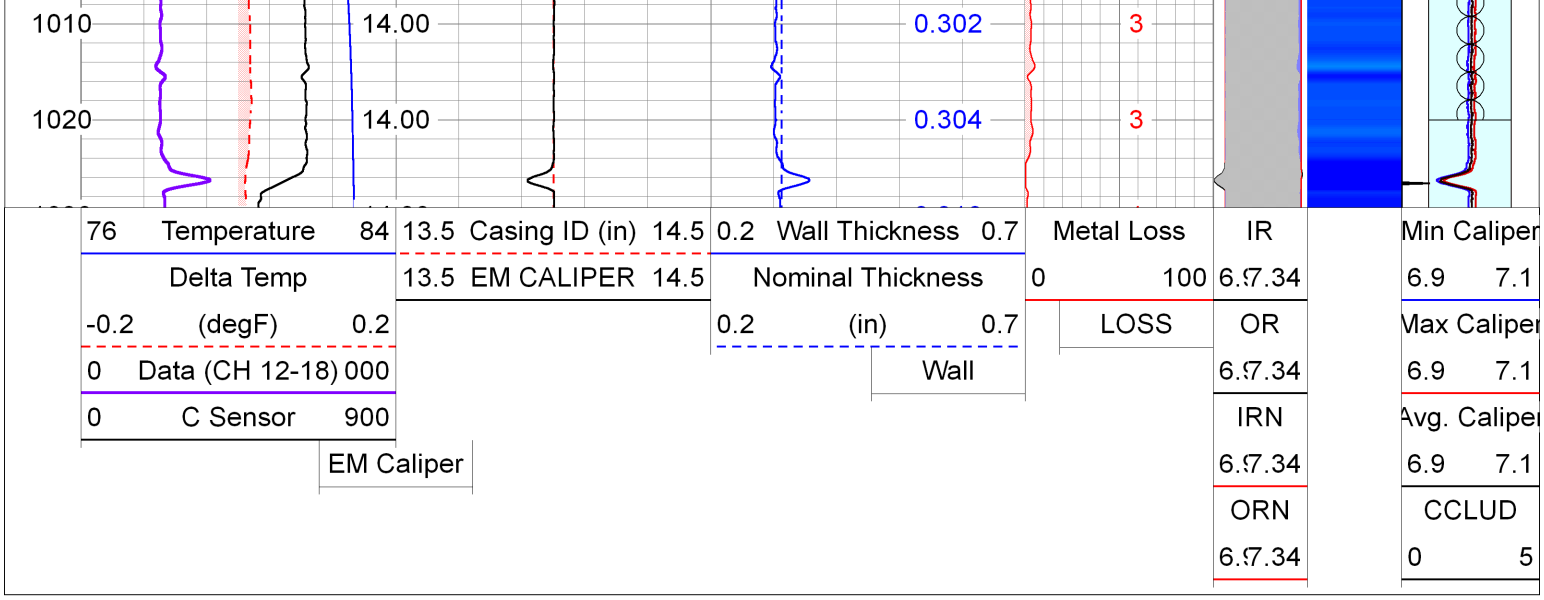
980 14.00 0.308 1
990 14.00 0.305 2
1000 14.00 0.306 2



76 Temperature 84	13.5 Casing ID (in) 14.5	0.2 Wall Thickness 0.7	Metal Loss	IR	Min Caliper
Delta Temp	13.5 EM CALIPER 14.5	Nominal Thickness	0 100	6.57.34	6.9 7.1
-0.2 (degF) 0.2		0.2 (in) 0.7	LOSS	OR	Max Caliper
0 Data (CH 12-18) 000		Wall		6.57.34	6.9 7.1
0 C Sensor 900				IRN	Avg. Caliper
EM Caliper				6.57.34	6.9 7.1
				ORN	CCLUD
				6.57.34	0 5

ATTACHMENT D

December 12, 2023, Analytical Laboratory Report

Mission Springs Water District Well 35

KYLE Groundwater

Clinical Laboratory of San Bernardino, Inc.

Celebrating 55 Years of Analytical Service 1967-2022

Mission Springs Water District	Project: Standard Analysis	Work Order: 23L1278
66575 Second St.	Sub Project: SNMP Sampling	Received: 12/13/23 14:50
Desert Hot Springs CA, 92240	Project Manager: Chad Finch	Reported: 01/17/24

Well 35 **23L1278-01 (Drinking Water)** **Sample Date:** 12/12/23 16:00 **Sampler:** Tim Owens

Analyte	Method	Result	Rep. Limit	MCL	Units	Prepared	Analyzed	Batch	Qualifier
General Chemical Analyses									
Alkalinity, Total (as CaCO3)	SM 2320 B	**120**	5.0		mg/L	01/12/24	01/12/24	2402149	HT-01
Bicarbonate (HCO3)	SM 2320 B	**150**	5.0		mg/L	01/12/24	01/12/24	2402149	HT-01
Carbonate (CO3)	SM 2320B	ND	5.0		mg/L	01/12/24	01/12/24	2402149	HT-01
Chloride (Cl)	EPA 300.0	**11**	1.0	500	mg/L	12/13/23	12/13/23	2350123	
Hydroxide (OH)	SM 2320B	ND	5.0		mg/L	01/12/24	01/12/24	2402149	HT-01
Nitrate as N (NO3-N)	EPA 300.0	ND	0.40	10	mg/L	12/13/23	12/13/23	2350123	
Sulfate (SO4)	EPA 300.0	**150**	0.50	500	mg/L	12/13/23	12/13/23	2350123	
Total Filterable Residue/TDS	SM 2540C	**390**	5.0	1000	mg/L	12/18/23	12/19/23	2351005	
Metals									
Calcium (Ca)	EPA 200.7	**61**	1.0		mg/L	12/21/23	12/21/23	2351137	
Chromium (+6)	EPA 218.6	**1.9**	1.0		ug/L	12/12/23	12/22/23	2351025	
Magnesium (Mg)	EPA 200.7	**12**	1.0		mg/L	12/21/23	12/21/23	2351137	
Potassium (K)	EPA 200.7	**7.8**	1.0		mg/L	12/21/23	12/21/23	2351137	
Sodium (Na)	EPA 200.7	**58**	1.0		mg/L	12/21/23	12/21/23	2351137	
Radiochemistry Analyses									
Uranium	EPA 200.8	**10**	1.0	20	pCi/L	12/15/23	12/18/23	2350206	

HT-01 Analysis performed outside of recommended hold time.

ND Analyte NOT DETECTED at or above the reporting limit

Stu Styles
Client Services Manager

Post Office Box 329 San Bernardino, CA 92402 (909) 825-7693 Fax (909) 825-7696 ELAP Number 1088

23L1278

Clinical Laboratory of San Bernardino, Inc.

Chain of Custody

0-0-2

Client	Mission Springs Water District	System Number	Analysis Requested	Comments
Address	66575 Second Street Desert Hot Springs, CA 92240	3310008		
Contact	Chad Finch	Email Address: cfinch@mswd.org		
Phone #	(760) 329-6448 EXT. 129	Mobile# (760) 668-8962		
Project	SNMP Sampling	Reporting Requests:		
Sub Project		( ) State EDT ( ) Test Share ( ) CC's To:_____		
Sampled by	Tim Owens			

Date	Time	Bottle #	Sample Identification	Matrix	Type	Preservatives	Total Chlorine	Free Chlorine	Temp C	TDS	NO3-N	K, Na, Ca, Mg	Cl, SO4	CR6	Uranium		
12/12/23	1600	W28	Well 35	DW	4W	7				X	X	X	X	X	X		

Matrix: DW-Drinking Water, WW-Waste Water, SW-Surface Water *Type-* 1-Routine, 2-Repeat, 3-Replacement, 4-Special, W = Well D = Distribution

Preservatives: (1) Na2S2O3 (2) HCl (3) HNO3 (4) NH4Cl (5) H2SO4 (6) Na2SO3 (7) Cold (8) Other:_____

Relinquished By (Sign)	Print Name / Company	Date / Time	Received By (Sign)	Print Name / Company
	Tim Owens / MSWD	12/13/23		BBlowney C.L.S.B
	BBlowney C.L.S.B	12/13/23 2:15		
		12/13 1450		AIVA/CLSB

Samples received: (X) *On ice* (X) *Intact* (X) *Custody seals Temp* 9.2 ( ) F (X) C

ELAP #1088

Page 1 *of* 1

REQUEST FOR QUOTE

PHASE II DIAGNOSTICS, REHABILITATION, REDEVELOPMENT, AND TESTING
MISSION SPRINGS WATER DISTRICT (MSWD) WELL 35

CONTRACTOR NAME: L.O. LYNCH QUALITY WELLS & PUMPS INC.

Item No.	Description	Est. Qty.	Unit	Unit Price	Item Total
101	Mobilization, Demobilization, Site Security, and Site Cleanup.	1	LS	$ 60,000.00	$ 60,000.00
102	Compliance with Discharge Requirements, Including Furnish and Install of Temporary Conveyance Piping and Settling Tanks.	1	LS	$ 75,000.00	$ 75,000.00
103	Conduct Mechanical Cleaning with Nylon Brushes.	16	HR	$ 595.00	$ 9,520.00
104	Remove Accumulated Fill and Debris from Well Sump.	1	LS	$ 11,000.00	$ 11,000.00
105	Conduct Post-Brushing Dual-Cam Downhole Video Survey.	1	LS	$ 2,100.00	$ 2,100.00
106	Conduct Preliminary Well Development.	1	LS	$ 24,600.00	$ 24,600.00
107	Conduct Phase I Chemical Treatment with Polymer Dispersant and Non-Ionic Surfactant.	1	LS	$ 12,500.00	$ 12,500.00
108	Conduct Phase II Chemical Treatment with Acid, including Chemical Extraction and Neutralization.	1	LS	$ 43,910.00	$ 43,910.00
109	Perform Initial Redevelopment by Focused Intake Pumping.	16	HR	$ 895.00	$ 14,320.00
110	Perform Final Redevelopment by Pumping and Surging.	32	HR	$ 920.00	$ 29,440.00
111	Perform Well Testing (8-hour step drawdown, 72-hour constant-rate, and 8-hour recovery).	88	HR	$ 425.00	$ 37,400.00
112	Perform Flowmeter Spinner Survey.	1	LS	$ 5,500.00	$ 5,500.00
113	Perform Depth-Specific Groundwater Sampling from 13 Discrete Depths within Well.	13	EA	$ 500.00	$ 6,500.00
114	Provide Laboratory Analysis for Uranium from Samples Collected During Time-Series and Depth-Specific Sampling.	21	EA	$ 120.00	$ 2,520.00
115	Provide for Laboratory Analysis of Title 22 (see Table 1).	1	LS	$ 5,070.00	$ 5,070.00
116	Conduct Post-Rehabilitation Dual-Cam Downhole Video Survey.	1	LS	$ 2,100.00	$ 2,100.00
117	Perform Interim Well Disinfection and Cap Well.	1	LS	$ 14,510.00	$ 14,510.00
TOTAL FOR ITEMS 101 TO 117:					$ 355,990.00