20241213113813 4096
Filed Date: 12/13/2024
State Corporation Commission
of Kansas

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Petition of Daylight Petroleum, LLC to Open a Docket Pursuant to K.S.A. 55-605(a).	)))	Docket No. 25-CONS-3040-CMSC

PRE-FILED TESTIMONY

OF KELSEE WHEELER

ON BEHALF OF

DAYLIGHT PETROLEUM, LLC

TABLE OF CONTENTS

I. BACKGROUND INFORMATION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Kelsee Wheeler, 2900 NW Button Road, Ste. A7, Topeka, Kansas 66618.

Q. HAVE YOU BEEN RETAINED IN THIS MATTER BY DAYLIGHT PETROLEUM, LLC ("DAYLIGHT") AS AN EXPERT WITNESS?

A. Yes.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by GSI Engineering, LLC a UES Company (UES) as the Director of Environmental Operations. I hold a Professional Geology license in the State of Kansas.

Q. WOULD YOU PLEASE BRIEFLY DESCRIBE YOUR BACKGROUND AND WORK EXPERIENCE?

A. I earned a Bachelor's degree in Geology in 2005 from Kansas State University in Manhattan, Kansas. After graduation I worked for the Kansas Department of Health and Environment ("KDHE") Bureau of Environmental Remediation ("BER") as a Staff Geologist in the Site Assessment Program for three years overseeing multiple Site Investigations. I then transferred into the Voluntary Cleanup and Property Redevelopment Program with the KDHE where I managed numerous sites in the State of Kansas from initial investigations to completion of remediation. During my time with KDHE I drafted work plans, completed fieldwork activities, oversaw work of consultants as a regulator, drafted, completed, and reviewed reports.

In 2016 I was hired by the Kansas Water Office as a Water Resource Planner aiding Regional Advisory Council's and working to identify a treatment system and funding source to treat produced water for beneficial re use, in place of deep well injections.

I left the Kansas Water Office to take a job as a Project Geologist and Contract Manager for GSI Engineering, LLC. My work involved the drafting of technical documents, overseeing of fieldwork, review of technical documents, managing employees, creating proposals, cost estimates, and working with clients. Daily tasks include data evaluation of laboratory analytical results attained from the collection of soil and groundwater samples and providing remediation recommendations as well as communicating with clients and subcontractors. In January 2024 I began a transition within GSI Engineering, LLC to the Director of Environmental Operations of GSI Engineering, LLC a UES Company.

Q. DO YOU WISH TO BE RECOGNIZED AS AN EXPERT IN THIS DOCKET ON THE BASIS OF YOUR EDUCATION, LICENSOR AND EXPERIENCE IN THE FIELD OF GEOLOGY AND GROUNDWATER MONITORING AND REMEDIATION?

A. Yes.

II. NATURE OF THIS DOCKET AND EXPERT OPINION THAT THE ACTIONS BEING DEMANDED BY STAFF CONSTITUTE ECONOMIC WASTE

Q. COULD YOU PLEASE GIVE A BRIEF SUMMARY OF THE FACTS GIVING RISE TO THIS DOCKET?

A. On June 26, 2023 the landowner of a commercial building located on the Johnson lease reported to Daylight that a combination of oil and water was leaking through the floor of such commercial building where conduit passed through the floor. Daylight immediately reported the situation to the KCC. It was subsequently determined that when injection into Daylight's Olnhausen Farms #6 well was stopped, the flow of fluids from beneath the commercial building also stopped.

Neither Daylight nor the KCC has been able to locate any records indicating an abandoned well bore exists beneath the subject commercial building, and there is no evidence of any kind indicating what the source of the fluid beneath the commercial building was. However, the flow of fluid from beneath the building has been stopped, and monitoring wells have been installed which, to date, do not indicate that fresh and usable water is being impacted by whatever exists beneath the subject commercial building. Nevertheless, KCC Staff has steadfastly insisted that the commercial building be torn down in order to determine whether or not a well exists beneath such building.

GSI Engineering, LLC has been advising Daylight throughout this process and both myself and my superiors strongly disagree with the approach KCC Staff is taking with respect to this situation. First, there is absolutely no evidence an abandoned well exists beneath the commercial building, and if a well did exist where it might be located. Second, all available data indicates the release which was occurring as a result of the injection, has been stopped and adequate safeguards (stopping injection, installation and sampling of monitoring wells) have been put in place. These safeguards will identify if fresh and usable water is being impacted if such release were to resume in the future. KCC Staff has insisted from the outset of this situation that the commercial building will eventually need to be torn down. This is completely unreasonable, unnecessary and constitutes economic waste. Therefore, Daylight has filed the subject Petition with the Commission in order to have the Commission determine how this situation should be addressed. If the Commission were to conclude that the commercial building needs to be torn down in order to search for the source of the fluid flow, further investigation will be necessary by KCC Staff to determine if in fact the source of the

fluid is an abandoned well, and if so, who the responsible parties are for such a well.

Q. WHY DO YOU BELIEVE THE ACTIONS BEING DEMANDED BY THE KCC STAFF CONSTITUTE ECONOMIC WASTE?

A. Because the release has been stopped and adequate safeguards have been put into place in order to monitor and if necessary remediate the groundwater in the area surrounding the site where said release occurred. KCC Staff has from the outset been unwilling to consider any permanent approach to this situation which does not involve the destruction of the commercial building, even though groundwater monitoring is a common and an accepted best practice for protecting groundwater. Simply stated, spending several hundreds of thousands of dollars to destroy a commercial building when alternatives exist in which to fulfil the Commission's duty to protect fresh and usable water would constitute waste.

In my experience with regulatory agencies, when a unique situation such as this is encountered, both parties are willing to think "outside the box" and evaluate all possible solutions, namely the most cost-effective, safe, and efficient. While GSI and Daylight have brought options to the table during meetings, KCC Staff continues to demand that the building be torn down to address what they suspect may be an unplugged well.

Thus, in my opinion based on my education, training and experience in the field of geology and groundwater monitoring and remediation, the approach the KCC Staff is taking (i.e. the unwavering insistence that the commercial building be destroyed) is without scientific basis and would constitute economic waste.

III. FRESH AND USABLE WATER CAN BE ADEQUATELY PROTECTED WITHOUT DESTROYING THE LANDOWNER'S COMMERCIAL BUILDING

Q. IF THE COMMISSION WERE TO ORDER THAT THE LANDOWNER'S BUILDING BE TORN DOWN ANY ABANDONED WELL FOUND THEREUNDER TO BE PLUGGED, WOULD THAT PREVENT GROUNDWATER WITHIN THE TABLE 1 INTERVAL FROM BEING CONTAMINATED WITH CHLORIDES?

A. No it would not. The groundwater is already impacted with chlorides, likely from past operations conducted in the area, or naturally occurring. Concentrations may increase in the future as historical sources migrate vertically from the surface to the groundwater table. This situation will not be changed by plugging any abandoned well. In addition, the building will act as a "cap" preventing infiltration of chlorides beneath the building migrating down to groundwater; therefore tearing the building down may actually facilitate the infiltration of chlorides beneath the building into groundwater.

Q. WHAT MAKES YOU SO CONFIDENT THAT FRESH AND USABLE WATER CAN BE ADEQUATELY PROTECTED WITHOUT DESTROYING THE COMMERCIAL BUILDING?

A. Because groundwater monitoring and remediation through pumping and permitted injection is standard practice across the state and across the country for protecting groundwater. When a potential for groundwater contamination exists in virtually every other industry from underground tanks, landfills, surface or underground discharges, etc., the impact upon groundwater is monitored and addressed using remedial wells. Thus, this is not a new or novel approach to situations like this, it is simply different from what the KCC Staff is accustomed to.

The KCC Staff is accustomed to simply plugging wells as that is what the

Commission's regulations require. However, the value and location of the commercial building as well as the inability to determine whether a well even exists beneath such building makes this situation unique. If the subject commercial building did not exist it would certainly make sense to perform some exploratory digging in an attempt to identify the source of the discharge. However, since the commercial building does exist, this exploratory digging cannot be completed without enormous cost and business interruption to all parties involved. Thus, given the unique facts present in the form of the commercial building the Commission should consider alternative means of addressing this situation.

GSI Engineering, LLC is in the business of monitoring groundwater impacts, and performing necessary remediation typically in conjunction with and under the oversight of KDHE or the Environmental Protection Agency. Thus, the idea of addressing a situation like this one utilizing monitoring wells and if necessary pumping and permitted injection techniques is not new or novel, and is instead standard industry practice for addressing groundwater concerns.

Q. IF Groundwater WERE BEING MATERIALLY IMPACTED BY WHATEVER EXISTS BENEATH THE COMMERCIAL BUILDING WOULD YOU BE ABLE TO DETECT IT UTILIZING THE MONITORING WELL NETWORK?

A. Yes we would. While the design of the monitoring wells is not ideal for the reasons discussed below, they are sufficiently designed and constructed in order to ensure that we would be able to detect any material impacts to groundwater if that were occurring or were to occur in the future. However, at this time based on the data collected from the monitoring wells it does not appear that the release which occurred beneath the building is impacting groundwater within

the Table 1 interval. The building itself is acting as a barrier, minimizing any possible infiltration via precipitation.

Q. BASED UPON YOUR KNOWLEDGE AND EXPERIENCE WHAT WOULD BE AN APPROPRIATE MANNER IN WHICH THE COMMISSION COULD ADDRESS THIS SITUATION WHILE SIMULTANEOUSLY FULFILLING BOTH ITS DUTY TO PROTECT FRESH AND USABLE WATER AND ALSO ITS DUTY TO PREVENT WASTE?

A. Based upon the data gathered to date, it cannot be determined with absolute certainty if the chloride concentrations in groundwater are from naturally occurring concentrations within the subject formations, or from historic poor management practices in the area for oil production, or a more recent release. Thus, additional monitoring should be performed in order to develop a better understanding of what has transpired. Currently, there is not enough data to establish a trend or to decipher a source area. Groundwater samples should be collected utilizing Hydrasleeve No-Purge samplers at discrete depth intervals and left in place for an adequate amount of time before being retrieved for sample collection. Monitoring wells should not be purged, as this would introduce groundwater into the well from not a discrete interval, but the zone with the highest transmissivity, which is unknown for each well. While not the most accurate way to collect a vertical profile of contamination, hydrasleeves would collect a sample from a more defined zone as opposed to the current sampling procedures completed at the direction of KCC Staff.

In addition, injection into the Olnhausen Farms #6 should be permanently discontinued, thus eliminating the re-pressuring mechanism which ultimately channeled to the

anomaly beneath the commercial building. The Olnhausen Farms #6 could either be plugged or converted to a producing well in order to reduce reservoir pressure in the area of the reservoir which communicated with the anomaly beneath the commercial building thus further reducing the likelihood of future breakouts.

If the Commission wished to impose something beyond an order directing Daylight to either plug the Olnhausen Farms #6 or convert it to a producing well, Daylight could be directed to enter the site into the Voluntary Cleanup and Property Redevelopment Program ("VCPRP") administered by KDHE BER. This would allow an Environmental Use Control ("EUC") to be placed on the Site, where injecting activities could be limited, restricted, or banned completely, with the input of the KCC.

If in the future, data obtained from the existing monitoring wells indicates a need to do so, additional monitoring wells with shorter screened intervals could be drilled, and remediation measures utilizing recovery wells could be initiated.

In addition, it should be kept in mind that due to the majority of the Table 1 lithology consisting of shale and limestone as opposed to sands and gravels which would have a higher recharge rate the aquifer cannot recharge the water wells at a rate equal to or greater than the rate that the water would be extracted. Thus, the lack of groundwater in the area (within Table 1) potentially eliminates the use of the aquifer as a potable water source, which significantly decreases the risk of exposure due to minimal receptors in the area. While this water must still be protected, I am only pointing out the lack of sufficient quantities of groundwater in the area as a mitigating factor which significantly decreases the risk of exposure even if such water were impacted.

IV. BASED ON THE DATA COLLECTED FROM THE MONITORING WELLS IT DOES NOT APPEAR THAT THE RELEASE WHICH OCCURRED BENEATH THE BUILDING IS IMPACTING GROUNDWATER WITHIN THE TABLE 1 INTERVAL AT THIS TIME

Q. EARLIER YOU INDICATED THAT BASED ON THE DATA COLLECTED FROM THE MONITORING WELLS IT DOES NOT APPEAR THAT THE RELEASE WHICH OCCURRED BENEATH THE BUILDING IS IMPACTING GROUNDWATER WITHIN THE TABLE 1 INTERVAL AT THIS TIME. CAN YOU EXPLAIN WHAT ABOUT THE DATA LEADS YOU TO CONCLUDE THAT?

A. First, as discussed in detail below, the chloride levels in each of the monitoring wells is consistent with what I would expect based upon the manner in which each of them was constructed, the location of the wells within a known area of abundant oil production, and the geology encountered when drilling each well.

Second, given the very low volume of groundwater present in the Table 1 interval at this site, if produced water from Daylight's Olnhausen Farms lease with chloride concentrations between 41,000 ppm and 44,000 ppm were flowing into the Table 1 interval the chloride levels in the groundwater samples we have collected would be several times higher than what we are seeing. In addition, if a subsurface release into the freshwater bearing zones (less than 150' bgs Table 1) had occurred when the breakout was observed at the surface, the chloride concentrations in groundwater we are seeing would be significantly higher, as the amount of groundwater present within Table 1 is minimal. As of today, groundwater concentrations identified in the four monitoring wells are only slightly above concentrations documented in the 1960's by the Kansas Geological Survey.

Finally, fresh/usable groundwater becomes impacted from oil/gas industry activities in two ways:

1. From the top to the bottom, or
2. From the bottom to the top.

Shallow groundwater samples (< 30 feet bgs) collected from the temporary geoprobe locations and monitoring wells on Site identified chloride concentrations ranging from 71.9 mg/L to 523 mg/L. These concentrations are indicative of older more wide spread chloride contamination occurring at the surface, and could correlate with the multiple dark shadowed spots on the older aerial images. Groundwater flow in this area overall is predominantly to the southwest. However, upgradient wells PMW-3 and PMW-4 have both had detections of concentrations exceeding the SMCL for Chloride (250 mg/L). PMW-4, had consistent concentrations from all samples regardless of what depth they were collected. With the concentrations of chloride that we are seeing onsite now in all wells, it is likely that contamination has occurred from the top (surface) to the groundwater. From poor industry practices in the early years of drilling as previously mentioned, and slow infiltration of chlorides to the shallow aquifer(s). In addition, it takes time (years) for chlorides to infiltrate these shallow aquifers from the surface, thus this contamination likely occurred many years ago when poor industry practices were common such as evaporation pits, surface release of produced water, inadequate well completion techniques and poor drilling practices.

Q. WOULD THERE BE ANY CHLORIDE DETECTED IN THE TABLE 1 Groundwater EVEN IF THERE WERE NO RELEASE BENEATH THE SUBJECT BUILDING?

A. Yes, there certainly would. Chloride salts are very abundant in nature. Sea water and oil field

brines contain them in large quantities, and smaller amounts may be dissolved from rock materials by groundwater. Thus, some level of naturally occurring chlorides would be present in the Table 1 groundwater absent any impact from other sources.

In 1966 KGS collected groundwater samples from the same limestone members observed during drilling on this site, in the neighboring Neosho County. See, 1966 KGS Survey Bulletin 183. Chloride concentrations (naturally occurring) in these groundwater samples ranged from 40 parts per million to 1,250 parts per million (ppm One part per million is equivalent to one pound of substance per million pounds of water or 8.33 pounds per million gallons of water). Therefore, based on this study, we would expect to see chloride concentrations between 40 and 1,250 ppm in the subject monitoring wells as a baseline / static level. So chloride concentrations below this level would not be considered elevated at all.

In addition, due to the large number of oil and gas wells drilled before regulations were set and enforced, contamination is known to have occurred in several water bearing zones across the United States, including Kansas. Discovery of oil in the area at issue in this Docket was in the 1890's. (*See*, email from Julie Shaffer to Rolando Moreno 4.24.24; Exhibit TR-4, Page 2 of 6 AND KGS Bulletin 165, Part 1). Since, oil and gas production and development was not even regulated in Kansas until the 1930's, poor drilling and well completion practices introduced produced fluids to the fresh and usable water reservoirs. In addition, in the early years of oil drilling, evaporation ponds, pits, and/or trenches were dug to contain the produced water/brine (water with high chloride content) that is often found in the same geologic trap as the petroleum. Often times this water was released directly onto the ground surface or into rivers or streams as the impact to usable surface water and groundwater was not understood.

Thus, higher chloride concentrations in the Table 1 groundwater at this site does not come as a surprise and does not necessarily have anything to do with the recent release beneath the commercial building.

Q. WILL CHLORIDE LEVELS WITHIN Groundwater NATURALLY FLUCTUATE, EVEN IF THE EVENT WHICH INITIALLY IMPACTED THE Groundwater HAS COMPLETELY CEASED?

A. Absolutely. Rainfall, an increase or decrease in volume of groundwater, and also a shift in the lithology from which the groundwater is obtained will all cause predictable fluctuations in chloride levels. Essentially three things can happen, 1) rainfall or increased groundwater volumes can dissolve chlorides into the groundwater which previously existed in either the well bore or the formation in a solid state, thus increasing chloride levels; 2) rainfall can cause chlorides to sink deeper into the soils to groundwater; and 3) certain formation formations contain higher concentration of chlorides than others, thus if a sample is predominated by water from one formation or another, the chloride concentration will fluctuate widely (which is what we are seeing in this case).

These natural and expected fluctuations in the data collected from monitoring wells must be analyzed in a scientific manner as opposed to simply looking for a higher number or lower. Data must be analyzed in the context of rainfall events, comparing one quarter to the same quarter of another year, isolating lithology from which the sample is taken, etc. in order to determine whether an actual trend exists as opposed to predicable fluctuations from one quarter to the next.

Q. CAN YOU PROVIDE SOME CONTEXT OR PERSPECTIVE CONCERNING THE

CHLORIDE LEVELS WE ARE SEEING IN THE MONITORING WELLS AT THIS SITE. IN OTHER WORDS ARE THEY RELATIVELY HIGH, RELATIVELY LOW, ETC. COMPARED TO WHAT YOU WOULD EXPECT IF Groundwater WERE BEING IMPACTED BY THE ANOMALY BENEATH THE BUILDING?

A. The chloride levels we are seeing in the monitoring wells are relatively low. These levels are only slightly higher than background chloride levels found in the 1966 KGS survey, and the two wells that are exhibiting chloride concentrations above those levels are higher for predictable reasons as discussed below.

In addition, for a comparison of chloride concentrations, per the KGS bulletin for Neosho County water containing less than 250 ppm of chloride is acceptable for municipal supplies and is satisfactory for most purposes. Water containing around 500 ppm of chloride begins to develop a salty taste and water with chloride concentrations as high as 4,000 or 5,000 ppm can be used for livestock purposes.

If a subsurface release to the freshwater bearing zones (less than 150' bgs Table 1) had occurred, the chloride concentrations in groundwater we are seeing today would likely be significantly higher, as the amount of groundwater present within Table 1 is minimal. As of today, groundwater concentrations identified on Site in the four (4) monitoring wells have ranged from 34.9 ppm to 2,370 ppm, i.e. only slightly above concentrations documented in the 1960's groundwater samples. More than 60 years have passed since those samples were collected, during which time additional sources from oil field production processes have likely contributed to the chloride contamination in groundwater.

A. THE MANNER IN WHICH THE MONITORING WELLS WERE CONSTRUCTED

HAS PREDICTABLY CAUSED THE CHLORIDE READINGS TO BE WHAT THEY ARE

Q. DOES THE MANNER IN WHICH THE MONITORING WELLS WERE CONSTRUCTED HAVE ANY AFFECT UPON THE CHLORIDE CONCENTRATIONS DETECTED IN THE WELLS?

A. Yes it does. The monitoring wells at issue in this docket were not designed in accordance with industry best practices so the data obtained from the wells must be analyzed more carefully in order to obtain a clear picture of what the data is revealing to us.

KCC Staff requested these wells have very long screened intervals to extend across the entire Table 1 interval. Conceptually I am sure they felt doing so would reveal contamination coming from anywhere within the Table 1 interval. However, this design actually makes it nearly impossible to identify where within the Table 1 interval the groundwater is entering the screened interval of the monitoring well.

Studies have been completed to show the inaccuracy of samples collected from long screened wells. Included below is the abstract of the study completed by Peter E. Church and Gregory E. Granato.

Abstract

The results of a field experiment comparing water-quality constituents, specific conductance, geophysical measurements, and well-bore hydraulics in two long-screen wells and adjacent vertical clusters of short-screen wells show bias in ground-water data caused by well-bore flow in long-screen wells. The well screen acts as a conduit for vertical flow because it connects zones of different head and transmissivity, even in a relatively homogeneous, unconfined, sand and gravel aquifer where such zones are almost indistinguishable. Flow in the well bore redistributes water and solutes in the aquifer adjacent to the well, increasing the risk of bias in water-quality samples, failure of plume detection, and cross-contamination of the aquifer. At one site, downward flow from a contaminated zone redistributes solutes over the entire length of the long-screen well. At another site, upward flow from an uncontaminated zone masks the presence of a road salt plume.

Borehole induction logs, conducted in a fully penetrating short-screen well, can provide a profile of solutes in the aquifer that is not attainable in long-screen wells. In this study, the induction-log profiles show close correlation with data from analyses of water-quality samples from the short-screen wells; however, both of these data sets differ markedly from the biased water-quality samples from the long-screen wells. Therefore, use of induction logs in fully cased wells for plume detection and accurate placement of short-screen wells is a viable alternative to use of long screen wells for water-quality sampling.

Further, this study details that groundwater will enter the long screen well from layers

with higher transmissivity, regardless of that layer's concentration of contamination. The studies multi depth short screened wells were utilized to identify the discrete zones with the highest groundwater contamination present. Although this study was conducted in a single homogenous unconfined aquifer, both down flow and up flow was identified within the aquifer, meaning mixing of groundwater would occur in the long screened well, similar to what is occurring in the monitoring wells being discussed in this docket, resulting in potentially non representative groundwater sample results. Conclusions of the study state: Use of long screen wells will not provide representative water quality samples even in a relatively homogeneous, unconfined sand and gravel aquifer.

Q. GIVEN WHAT YOU HAVE STATED ABOUT THE LESS THAN IDEAL NATURE IN WHICH THE MONITORING WELLS WERE REQUESTED TO BE INSTALLED, DO YOU STILL BELIEVE THESE WELLS ARE ADEQUATE TO DETECT AND IF NECESSARY REMEDIATE ANY Groundwater IMPACT THAT MIGHT OCCUR?

A. Yes. I am only pointing out that the data obtained from these wells must be analyzed in light of the potential biases created by the manner in which the monitoring wells were constructed. The potential for these biases make it imperative that the data be compared in a manner that accounts for differences in rain fall events, changes in groundwater volume, etc. It is also critical that data be analyzed collectively to look for trends revealed by comparing samples from similar times of year, similar rain fall circumstances, similar depths and similar groundwater circumstances.

Q. ARE THERE DIFFERENCES AMONG THE FOUR MONITORING WELLS THAT NEED TO BE CONSIDERED IN INTERPRETING THE DATA OBTAINED FROM

EACH WELL?

A. Most definitely. The monitoring wells onsite, while all completed to a depth of 140' have differing screened intervals. The well logs for the two wells with the same screen length (PMW-1 and PMW-3) have differing lithology, with more sandy shale and sandstones present in PMW-1 (west of the building). Data collected at this site cannot definitively identify the source for the chloride concentrations in groundwater, as the very long screen intervals in these wells make it impossible to determine where groundwater is entering the wells. Additionally, chlorides will migrate vertically as they are denser than water. With the wells intersecting semi confined units, mixing of the water column within the wells is occurring from the bottom up, as well as from top to bottom.

The initial sampling event on December 18, 2023, consisted of multiple samples from multiple depth intervals. The purpose of this was to determine if there was a vertical profile within the wells to evaluate the potential for contamination to be migrating from the surface to the bottom of the aquifer. Results ranged from 34.9 mg/L to 848 mg/L, all well below the concentrations of the samples collected from both the pit, and the Olnhausen well #6 sample collected in July 2023. Due to the long screen interval of PMW-4 (east of the building) that was installed at the direction of the KCC Staff, three (3) depth intervals were sampled, while PMW-1 and PMW-3 were sampled at two intervals, and PMW-2 only at one depth interval, due to the lack of groundwater present in the well. The multi depth sampling event did show a range of results when samples were collected from the same well at different depths. For example, PMW-1 (well located west of the building) is completed at 140' deep with a screened interval of 90 feet (from 140' to 50' bgs). Samplers were set at 85' bgs and at 139' feet bgs. The

sample collected at 85' bgs identified chloride concentrations at 34.9 mg/L while the 139' sample had results of chloride at 848 mg/L. This demonstrates the range of chloride concentrations within the Table 1 interval.

As summarized in our Monitoring Well Installation and Sampling Report attached hereto as **Exhibit KW-1**, the monitoring wells were installed through various members including: The Drum limestone, Chanute Shale, and the Dennis Limestone and Cherryvale Shale. Per the KGS bulletin (Jungmann 1966) natural concentrations of chloride in the Chanute Shale formation range from 40 parts per million to 1,115 parts per million. The Dennis Limestone, in western Neosho County is known to have slightly salty to brackish water (1,250 ppm) reported within the shale.

Q. SPECIFICALLY WHAT ARE THE PRIMARY DIFFERENCES BETWEEN THE FOUR MONITORING WELLS AND HOW DO THOSE DIFFERENCES AFFECT THE DATA OBTAINED FROM EACH?

A. Attached hereto as **Exhibit KW-2** is a cross section for the four monitoring wells that will be referred to as part of the specific discussions below. As shown on the cross sections, the majority of the Table 1 consists of the Chanute Shale. Displayed on the cross sections are the Verdigris River profile, geologic layers, monitoring well locations, depths, and screened intervals, as well as the different groundwater elevations for all sampling events to date. When viewing these cross sections, please consider that the elevation is at a 2x exaggeration, and measurements were taken from an elevation profile from Google Earth.

Concerning the specific differences between each of the four monitoring wells, the first thing to note is the difference in the screened intervals of the wells. While all wells are drilled

to 140' in depth, they are not screened consistently, meaning, the groundwater entering the screened intervals and flowing into the monitoring wells, is not coming from the same geologic units in each well. The table below is from the monitoring well installation report:

Monitoring Well	Total Depth	Top of Screen	Bottom of Screen	Screen Length
PMW-1	140	50	140	90
PMW-2	140	100	140	40
PMW-3	140	50	140	90
PMW-4	140	10	140	130

The second thing to note is the change in the depth to water, most notably the significant change in monitoring well PMW-2 (40 feet of screen), and the lack of fluctuation in PMW-4 (130 feet of screen). With the increase in the depth to groundwater, chloride concentrations should be expected to increase as well since chloride, having a higher density than water, will migrate vertically throughout the water column (i.e., will sink). Also, the samples from multiple depth intervals within the monitoring wells demonstrated the range of chloride concentrations within the Table 1 interval with higher chloride concentrations occurring at deeper depths. PMW-2 being predominantly screened in limestone as opposed to the Chanute Shale, could be representative of both naturally occurring chlorides, and historic contamination that has migrated from the surface, to the Chanute Shale, and into the screened interval, migrating vertically due to density. It is common practice in environmental consulting to sample at the bottom of the well for those contaminants that are more dense than water, and to sample at the top of the water table for those contaminants that have a density less that water. Therefore, sampling at the bottom of the on-site monitoring wells we should expect for chloride concentrations to be greater than in the shallow intervals.

Q. PLEASE EXPLAIN THE UNIQUE ASPECTS OF EACH OF THE FOUR

MONITORING WELLS AND HOW THE DATA FROM EACH WELL IS IMPACTED THEREBY.

i. CONSTRUCTION AND GEOLOGICAL CHARACTERISTICS OF THE PMW-1 WELL

A. PMW-1 has a screened interval of 90 feet, approximately 60 feet is within the Chanute shale. Groundwater levels in this well have ranged from 35.85 to 53.43 (range of 17.58'). For all events, with the exception of the December event, groundwater levels in this well have remained above the screened interval, indicating the well was installed in a semi confined water bearing zone. Similar to the other three monitoring wells, the deepest groundwater depth coincided with the highest chloride concentration. Specifically The sample collected at 85' bgs identified chloride concentrations at 34.9 mg/L while the sample collected at 139' bgs had results of chloride at 848 mg/L. Chloride levels from the 139' bgs interval were as follows: Dec. 848; Apr. 916; June 492; Sept 1630. There is no noticeable trend indicating chloride levels in this well are either systematically increasing or decreasing. Thus the samples taken from this well do not provide any indication that groundwater is being, or has been impacted by the breakout beneath the commercial building.

ii. CONSTRUCTION AND GEOLOGICAL CHARACTERISTICS OF THE PMW-2 WELL

During the installation of PMW-2 (the first well that was installed), groundwater was not encountered until a depth of 125' bgs, therefore, it was decided to install a 40' screen from 140' bgs to 100' bgs. During development, all wells continued to go dry, therefore the calculated development volume could not be removed from the wells. PMW-2 went dry multiple times, with only a volume of 3.5 gallons being removed. This information is

significant in that since PMW-2 is encountering groundwater from the deepest zone of all four monitoring wells, and also because it has such a low volume of total groundwater, the highest concentrations of chloride would be expected in PMW-2, which is exactly what the data shows. Chloride levels from the 139' bgs interval were as follows: Dec.416; Apr. 1720; June 2060; Sept. 2370.

These chloride levels correlate with changes in groundwater levels at the time each sample was taken. The December static water level in PMW-2 (129.34' bgs) is due to the development of the well, it was repeatedly purged dry, and after 24 hours, didn't recover to initial static water level. The next sampling event (April 2024) the depth to groundwater in PMW-2 decreased to 46.60' bgs (a difference of 82.74'). The following two sampling events, June and September, depth to groundwater increased to 63.73' bgs, then 72.35' bgs. With the increase in the depth to groundwater, chloride results predictably increased in concentration from 2,060 mg/L to 2,370 mg/L. Chloride. As indicated above groundwater levels significantly affect chloride concentrations. Thus, no discernable trend is shown by the PMW-2 well that would indicate groundwater is being, or has been impacted by the breakout beneath the commercial building.

iii. CONSTRUCTION AND GEOLOGICAL CHARACTERISTICS OF THE PMW-3 WELL

PMW-3 (north of the building) has a screened interval of 90 feet, with approximately 75 feet within the Chanute Shale. In review of the well log, this location was different from the others in that there was significantly more sandy shales, and more prevalent sandstone layers, most notably the Noxie Sandstone immediately atop the Drum Limestone. Depth to

groundwater levels have varied from 35.84' bgs to 53.43' bgs (53.43' bgs, immediately after development). Similar to the other wells, the greater the depth to groundwater, the higher the chloride concentrations. It is likely that the overall chloride concentrations are lower in this well due to the more prevalent sandy shale, and sandstones noted in the lithology. Also, this is the only well of the four that did not encounter the Dennis Limestone formation, known to have naturally occurring elevated chloride concentrations. This is also the only well that recharges quickly enough during purging at sampling events that we do not have to allow time for recharge. Chloride levels from the 139' bgs interval were as follows: Dec.262; Apr. 130; June 59.9; Sept. 61.9. Obviously, these readings do not indicate any impact to groundwater, and certainly do not indicate that the breakout beneath the commercial building is continuing to flow.

iv. CONSTRUCTION AND GEOLOGICAL CHARACTERISTICS OF THE PMW-4 WELL

PMW-4 (east of the well) has the largest screened interval (130') as shown on the Cross Sections (**Exhibit KW-2**), this well has demonstrated the least amount of difference in depth to groundwater varying only 3.38 feet. For all sampling events, the static groundwater level has been within the screened interval of the well. This well, also, as expected has had the least amount of variation in the chloride concentrations ranging from 523 mg/L to 745 mg/L. Concentrations in this well could be biased low, due to the higher frequency of sandy shale noted throughout the screened interval. These zones would have a higher transmissivity, and potentially lower contamination concentrations, therefore diluting chloride concentrations from zones that are impacted. This well is installed with 15' intersecting the Dennis Limestone

(known to hold slightly salty to brackish water i.e. 1,250 ppm chloride content), which is more than any of the other wells. Chloride levels from the 139' bgs interval were as follows: Dec.546; Apr. 615; June 745; Sept. 617. There is no noticeable trend which would indicate chloride levels in this well are either systematically increasing or decreasing. Thus, the samples taken from this well do not provide any indication that groundwater is being, or has been impacted by the breakout beneath the commercial building.

B. THE PROPER MANNER IN WHICH TO REVIEW AND INTERPRET DATA OBTAINED FROM THE FOUR MONITORING WELLS AT ISSUE

Q. WHAT IS THE PROPER MANNER IN WHICH TO REVIEW AND INTERPRET THE DATA OBTAINED FROM THE FOUR MONITORING WELLS?

A. Data points must be compared with data points that would be expected to yield similar results such as comparing samples taken from the same depth at the same time of year during periods of similar rainfall and similar depth to groundwater. In addition more data points are needed in order to even begin to look for a trend, as the fluctuations we are seeing in the samples we have now are normal and are what we would expect to see in light of the circumstances set forth above concerning each well. If I were to see chloride levels exponentially spike in a given sample without any other explanation, I would consider taking additional action after that result had been confirmed through verification sampling over a period of time, to rule out the potential of a "slug" moving through the aquifer. But short of that, review of groundwater monitoring is performed through trend analysis. The data must be interpreted in the manner set forth above in the context of geology, rainfall events, and other such variables in order to understand what it is actually showing us.

The above referenced fundamental principles and methods must be followed in groundwater monitoring well network design, sampling, data collection and data analysis. These principles and methods are reliable and commonly accepted in both the governmental and private sector, as evidenced by the following authorities, Driscoll, Fletcher G., 1989 Groundwater Wells; Fetter, C.W. 1999 Contaminant Hydrology; Freeze, R. Allan, and Cherry, John A., 1979 Groundwater; and Heath, Ralph C., 2004 Basic Ground-Water Hydrology. My conclusions are the product of the application of these fundamental principles and methods to the facts of this case.

Q. KCC STAFF HAS ANALYZED THE SAME DATA YOU HAVE AND THEY CONCLUDED GROUNDWATER IS CONTINUING TO BE IMPACTED BY THE BREAKOUT BENEATH THE COMMERCIAL BUILDING; CAN YOU EXPLAIN WHY THEIR CONCLUSION IS DIFFERENT THAN YOURS?

A. I don't know for sure because they do not provide any detail concerning how they interpreted the applicable data in order to reach their conclusion. Their pre-filed testimony summarily points toward the chloride numbers themselves and does not elaborate beyond that. KCC Staff's witnesses do not explain how they considered fundamental variables such as rainfall events, differing lithology with the screened infernal of each well, differing lengths of screened intervals in each well, past oil production of the area, fluctuations in groundwater levels, etc. Without, being told how the KCC Staff witnesses formed their opinions or considered these fundamental variables, I cannot determine whether they followed any reliable principles and methods in their analysis at all.

I do know that the KCC Staff has been unwilling to consider any method at all other

than plugging to address the breakout from the very beginning of this process. In the Notice of Violation issued on November 1, 2023, Troy Russell specifically stated,

> [t]he design and implementation of monitoring wells is to detect and determine any impacts to fresh and usable groundwater within Table I **while Daylight continues their efforts to locate the broke out abandoned well and successfully plug the well bore**. If sampling shows intrusion of produced fluids within the Table I interval further monitoring wells will need to be constructed to delineate the impact.

Despite its effectiveness and widespread use across the nation as a best practice for detecting and remediating groundwater impacts, KCC Staff has not been willing to consider groundwater monitoring as a long term response to this situation. This approach completely disregards the impact upon the landowner, upon Daylight and the Commission's competing statutory duty to prevent economic waste. GSI and Daylight believe there are other alternatives, both cost effective and efficient that could be put into place to ensure protection of both human health and the environment.

V. BASED ON THE DATA OBTAINED IT IS FAR MORE LIKELY THAT THE CHLORIDES CONCENTRATIONS PRESENT IN GROUNDWATER ARE DUE TO PAST USE OF THE PROPERTY FOR OIL PRODUCTION, AND NATURALLY OCCURRING, THAN FROM THE RECENT RELEASE

Q. BASED UPON THE DATA WHICH HAS BEEN GATHERED TO DATE, WHAT IS THE MOST LIKELY CAUSE OF THE CHLORIDE CONCENTRATIONS FOUND IN THE TABLE 1 Groundwater AT THIS SITE?

A. First, we must keep in mind that the chloride levels found in the four monitoring wells are relatively low, especially when compared to the concentrations of chloride in the water that was sampled from beneath the building, and only slightly above concentrations documented in the 1960's groundwater samples.

Second, I believe that the chloride concentrations in the area are related to the many decades of oil production activities; possibly from poor well completion, surface discharge of produced water or even a pit used to hold brine water which could correlate with the multiple dark shadowed spots on the older aerial images. Shallow groundwater samples (< 30 feet bgs) collected from the temporary geoprobe locations and monitoring wells on this site identified chloride concentrations ranging from 71.9 mg/L to 523 mg/L. This is indicative of the chloride contamination occurring at the surface over a widespread area most likely many years ago. In addition, groundwater flow in this area overall is predominantly to the southwest, and upgradient wells PMW-3 and PMW-4 both had concentrations exceeding the SMCL for Chloride (250 mg/L). PMW-4, had consistent concentrations from all samples regardless of what depth they were collected. With the concentrations of chloride that we are seeing onsite now in all wells, it is likely that contamination has occurred from the top (surface) to the groundwater, from poor industry practices in the early years of drilling as previously mentioned, and slow infiltration of chlorides to the shallow aquifer(s).

Third, if a subsurface release to the freshwater bearing zones (less than 150' bgs Table 1) had occurred, the chloride concentrations in groundwater we are seeing today would likely be significantly higher, as the amount of groundwater present within Table 1 is minimal.

VI. DESTROYING THE LANDOWNER'S BUILDING IS NOT NECESSARY AND WILL CAUSE ECONOMIC WASTE. THE COMMISSION CAN FULFILL ITS DUTY TO PROTECT FRESH AND USABLE WATER AND ALSO ITS DUTY TO PREVENT WASTE BY APPLYING A SCIENTIFICALLY SOUND AND LOGICAL APPROACH TO THE BREAKOUT BENEATH THE BUILDING

Q. IN TERMS OF THE LEVEL OF PROTECTION AFFORDED TO Groundwater, CAN YOU COMPARE, THE PLUGGING OF AN ABANDONED WELL, WITH ONGOING

GROUNDWATER MONITORING THOUGH THE MONITORING WELL NETWORK?

A. If an oil production well is properly plugged it shouldn't pose any threat to groundwater. However, the cement bond can fail, cement can bridge during plugging or other things can happen which could cause a plug to fail. Documentation has shown that plugs can fail in a way that causes fluid to come up the backside of the plugged well and breakout at the surface. Once a well is plugged there is no way of knowing what is happening within that well bore unless and until it becomes visible at the surface.

These monitoring wells on the other hand, are only installed within table 1 (140' bgs) and do not create a potential pathway for a breakout. They allow groundwater samples to be collected from within the Table 1 interval to evaluate if a source is impacting the fresh/usable water. Thus, if something where to happen which endangers fresh and usable water, it would be detected via the monitoring wells. In addition, the monitoring wells provide access through which remediation can be performed if it becomes necessary.

Thus, the use of the monitoring well network in order to monitor this situation does not provide an added level of danger to fresh and usable water. A monitoring well program such as the one being proposed by Daylight is far more expensive than the cost of plugging a well, and the ongoing burden of monitoring the groundwater and analyzing the data is more burdensome than plugging a well. However, in this instance, since we cannot determine whether a well even exists without destroying a commercial building at the cost of hundreds of thousands of dollars, the monitoring well program is the only feasible solution to the breakout which occurred. Additional solutions, as previously mentioned (KDHE-VCPRP

program with an EUC) could be completed in conjunction with groundwater monitoring.

Q. IN YOUR OPINION WOULD IT BE ECONOMICALLY WASTEFUL TO DESTROY THE COMMERCIAL BUILDING IN ORDER TO LOOK FOR AN ABANDONED WELL?

A. It would be extremely wasteful to do that and would serve no real purpose, beyond providing undue harm to Daylight and to the landowner.

Q. WHY DO YOU SAY THAT IT WOULD SERVE NO REAL PURPOSE TO TEAR DOWN THE COMMERCIAL BUILDING IN ORDER TO LOOK FOR AN ABANDONED WELL?

A. Because the breakout has already been stopped, with the injection being shut down and a monitoring well network is in place which will allow us to detect any increasing trend in groundwater contamination now or in the future. This coupled with, the plugging or conversion of the Olnhausen Farms #6 to a producer will adequately protect fresh and usable water without causing unnecessary economic waste to occur through the destruction of the landowner's building. In addition, the building itself is acting as a barrier, preventing infiltration through precipitation of the chloride impacted water that surfaced.

VII. RELIEF REQUESTED

Q. TO SUMMARIZE WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?

A. There are no records of a well located beneath the building and there is no possible way to determine what the cause of the breakout was, i.e. a well, core hole, exploratory bore hole, natural fault, seep or other unknown anomaly. Moreover, even if there is a well, core hole, or exploratory bore hole beneath the building, there is no cost effective way of finding it and

plugging it. The flow of fluid from beneath the building stopped at the surface when injection into the Olnhausen Farms #6 well ceased, and groundwater samples indicate that there is no subsurface contamination of fresh and usable water in response to this release. In addition, the building itself and its large concrete pad is acting as a cap, preventing infiltration from surface to groundwater.

Thus, my recommendation to the Commission would be as follows:

1. Injection into the Olnhausen Farms #6 should be permanently discontinued, thus eliminating the re-pressurization which ultimately channeled to the anomaly beneath the commercial building. The Olnhausen Farms #6 could either be plugged or converted to a producing well in order to reduce reservoir pressure in the area of the reservoir which communicated with the anomaly beneath the commercial building thus further reducing the likelihood of future breakouts;

2. Groundwater monitoring from all four monitoring wells should continue into the foreseeable future on a quarterly basis. Groundwater samples should be collected utilizing hydrasleeve samplers at discrete depth intervals and left in place for an adequate amount of time before being retrieved for sample collection. Monitoring wells should not be purged, as this introduces groundwater into the well from a non-discrete interval, but the zone with the highest transmissivity, which is unknown for each well. While not the most accurate way to collect a vertical profile of contamination, hydrasleeves would collect a sample from a more defined zone as opposed to the current sampling procedures completed at the site at the direction of KCC Staff;

3. If the Commission wished to impose something beyond an order directing Daylight to either plug the Olnhausen Farms #6 or convert it to a producer. Daylight could be directed to enter the site into the Voluntary Cleanup and Property Redevelopment Program ("VCPRP") program administered by KDHE BER. This would allow an Environmental Use Control ("EUC") to be placed on the Site, where injecting activities could be limited, restricted, or banned completely, with the input of the KCC.

If in the future, data obtained from the existing monitoring wells indicated a need to do so, additional monitoring wells with shorter screened intervals could be drilled, and

remediation measures utilizing the monitoring wells could be initiated. However, these steps are unnecessary at this time.

In addition, the Commission must keep in mind that the quantities of groundwater present in this area (within Table 1) are minimal and thus are unlikely to be produced.

Q. DOES THIS COMPLETE YOUR TESTIMONY TO THE COMMISSION?

A. Yes.

VERIFICATION OF KELSEE WHEELER

STATE OF KANSAS)
) ss:
COUNTY OF Shawnee)

Kelsee Wheeler, being duly sworn, upon her oath states that she has read the document title "Pre-filed Direct Testimony of Kelsee Wheeler" to which this Verification is attached, that she is aware of its contents, and declares that the statements contained in said document are true and correct.

Kelsee Wheeler

SUBSCRIBED AND SWORN to before me on this 12th day of December, 2024.

NOTARY PUBLIC - State of Kansas
Bryanna V Payne
My Appt. Expires 12-27-27

NOTARY PUBLIC

My Commission expires: 12-27-27

CERTIFICATE OF SERVICE

I hereby certify that a copy of the above and foregoing was sent via electronic mail, this 13th day of December, 2024, addressed to:

KELCEY MARSH
Kelcey.Marsh@ks.gov

JONATHAN R. MYERS
Jon.Myers@ks.gov

TROY RUSSELL
troy.russell@ks.gov

Keith A. Brock

GSI Engineering, LLC
4503 East 47th Street South
Wichita, Kansas 67210
www.gsinetwork.com
888.767.8854

GSI Engineering
A Universal Engineering Sciences Company

December 29, 2023

EXHIBIT A

Daylight Petroleum
Attn: Rolando Moreno
HSER Manager
rmoreno@daylightpetroleum.com

Re: Summary of Field Activities
Monitoring Well Installation and Sampling
SITE: Daylight Petroleum – Olnhausen Injection Well 6
One mile East of Neodesha, Kansas
Neodesha, KS
GSI Project No. 23T2177.01

Dear Mr. Moreno:

GSI Engineering, LLC (GSI) has prepared this letter report to summarize field activities that took place in response to the Notice Of Violation(s) letter sent to Daylight Petroleum by the Kansas Corporation Commission (KCC) on August 3, 2023 in reference to the Olnhausen Lease, located in Neodesha, Wilson County, Kansas.

GSI appreciates the opportunity to provide environmental services to Daylight Petroleum. If you have any questions regarding this report of need any additional information, please call.

Respectfully submitted,
GSI Engineering, LLC

Kelsee Wheeler

Kelsee Wheeler, P.G.
Senior Geologist, Assistant Director of Environmental Operations

Alexandra Richards

Alex Richards, P.G.
Senior Geologist

Enclosures: MWI and Sampling Report, Map, Table, Field Documentation, Photographs, Laboratory Analytical Reports, Boring Logs and WWC5 Forms

1.0 BORING AND MONITORING WELL INSTALLATION PROCEDURES

1.1 Monitoring Well Drilling and Installation Methods

GSI contracted with Flint Hills Drilling, LLC (FHD), a Kansas-licensed water well driller to install four (4) permanent monitoring wells. FHD used a GEFCO 30K Speedstar truck-mounted air rotary drilling rig equipped with a 6.0-inch rotary drill bit to advance four (4) borings and complete the new monitoring wells. Monitoring well locations (see the Site Map) were designated by the KCC. The general scope of monitoring well drilling and installation included:

- Installation of four (4) borings to approximately 140 feet in depth and completed in accordance with the KCC-approved Work Plan.
- Using well casing consisting of 2-inch diameter Schedule 80 ThermalPlastic casing with threaded joint couplings.
- Using well screen consisting of several 10-foot lengths with 0.010-inch slot size equipped with a 0.25 or 0.5-foot PVC end cap for total screen lengths as follows:

Monitoring Well	Total Depth	Top of Screen	Bottom of Screen	Screen Length
PMW-1	140	50	140	90
PMW-2	140	100	140	40
PMW-3	140	50	140	90
PMW-4	140	10	140	130

- Completing all wells as flush mount with a protective well vault installed around the well casing set into concrete and flush with the existing surface.
- Installing concrete pads (2.0 feet by 2.0 feet by 0.5 feet thick).
- Installing filter packs consisting of clean, well-rounded silica sand that extends to the base of the well borehole and 2 to 4 feet above the well screen.
- Placing a minimum 3-foot thick bentonite seal above the well screen/filter pack.
- Using hydrated bentonite chips.

- Providing traffic control devices (cones, barricades, etc.) as appropriate to promote safety for both the field team and public.
- Measuring static groundwater levels in each monitoring well with a cleaned, electronic water level indicator and the data recorded.
- Logging borings according to soil type, color, moisture content, and other relevant physical properties immediately following retrieval and recording the latitude and longitude for the site, source, and monitor wells using a hand-held GPS Unit.
- Completing and submitting Well Registration forms as required by Kansas regulations.
- Developing newly installed monitoring wells no sooner than 24 hours after installation.
- Properly disposing of investigative derived waste (IDW) generated from well installation activities.

Well installation activities began on December 4, 2023, and were completed by December 7, 2023. All wells were completed according to the table above, with 0.25 PVC end caps. The borehole was filled with one-foot of 16/30 silica sand with the well end cap placed on top of this one-foot backfill sand interval. The silica sand was then backfilled into the borehole to two feet above the top of the screened interval to create the gravel pack zone. A well seal was installed using 3/8" bentonite chips to the base of the well pad. A 2-foot by 2-foot by 0.5-foot thick well pad was constructed with concrete and wells were completed as flush mount with a vault. Field notes documenting well drilling and construction activities are attached.

PMW-1 was installed to an approximate total depth of 140 feet bgs with static water level measured at 52.0 feet bgs. The lithology of this well borehole generally consists of sandy clay in the first fifteen (15) feet, sandstone and sandy shale to an approximate depth of 35 feet bgs, unweathered gray shale to an approximate depth of 70 feet bgs, and thinly bedded gray to black shale to an approximate depth of 105 feet bgs. Limestone was encountered from 105 feet bgs to 115 feet bgs, and again at 135 bgs to 140 bgs, with thinly bedded gray to black shale between the limestones. Groundwater was not encountered while drilling PMW-1.

PMW-2 was installed to an approximate total depth of 140 feet bgs with static water level measured at 127.47 feet bgs. The lithology of this well borehole generally consists of clay in the first five (5) feet, clayey and sandy shale to an approximate depth of 25 feet bgs, and gray to black thinly bedded shale with minor interbedded thicker sandy shale layers to an approximate depth of 110 feet bgs, Limestone was encountered from 110 feet bgs to 120 feet bgs, and again at 125 bgs

to 140 bgs, with unweathered gray shale between the limestones. Groundwater was encountered during drilling at a depth of approximately 125 feet bgs.

PMW-3 was installed to an approximate total depth of 140 feet bgs with static water level measured at 115.20 feet bgs. The lithology of this well borehole generally consists of sandy shale in the first four (4) feet, thinly bedded gray to black shales interbedded with thicker reddish brown sandy shales to an approximate depth of 125 bgs, with gray limestone encountered from 125 feet bgs to 130 feet bgs, and shale again from 130 to 140 feet bgs. Groundwater was not encountered during drilling of PMW-3.

PMW-4 was installed to an approximate total depth of 140 feet bgs with static water level measured at 19.13 feet bgs. The lithology of this well borehole generally consists of clay and sandy clay in the first ten (10) feet, reddish brown sandy shale to an approximate depth of 30 feet bgs, gray to black thinly bedded shale with minor interbedded thicker sandy shale layers to an approximate depth of 55 feet bgs, and thinly bedded gray to black shale to an approximate depth of 105 feet bgs. Light gray limestone was encountered from 105 feet bgs to 120 feet bgs, and dark gray, flaggy limestone was encountered at 130 bgs to 140 bgs, with gray thinly bedded shale between the limestones. Groundwater was not encountered during drilling of PMW-4.

Details regarding borehole lithology and well construction are included in borehole/monitor well schematic logs Appendix D. Table 2 summarizes well completion information. Well cuttings were thin spread onsite with the landowner's permission.

Monitoring well development was conducted at least 24 hours after the well installation. PMW-2 was considered developed after being bailed dry twice due to the low water volume and slow recharge. PMW-3 was developed by air lifting using an air compressor; the well went dry after the removal of approximately 35 gallons. PMW-1 and PMW-4 were developed using a Waterra Hydrolift pump with PEX tubing and a foot valve. PMW-1 was pumped dry after removing approximately 200 gallons, while PMW-4 was pumped dry after removing approximately 554 gallons. Details about development are summarized in Table 1 and notes are included in the attachment. The state required WWC5 forms were submitted to the Kansas Geological Survey, and the draft forms are attached.

Investigative derived wastes (IDW) generated from well installation activities included auger cuttings, spent equipment wash/rinse water, purge water from well development, disposable sampling materials and personal protective equipment (PPE). Prior to development, a sample of groundwater was collected from each monitoring well using a disposable bailer and was field

screened using test strips capable of detecting sodium chloride down to 400 parts per million. In an abundance of caution based on the field screening results, well development purge water from PMW-1 was containerized in a tanker truck and transported offsite for disposal. Purge water from PMW-2, PMW-3, and PMW-4 was discharged to the ground away from the wellhead. Soil drilling cuttings were transported by skid loader to the vegetated area on the west side of the property and thin spread with approval by the property owner. Disposable sampling materials and PPE were collected into trash bags and disposed in the onsite dumpster.

1.2 Temporary Piezometer Installation Methods

GSI mobilized to the Site on December 4, 2023, with a track mounted Geoprobe 6660® direct push rig equipped with a retractable screened rod (Geoprobe Screen Point 15® Groundwater Sampler) attached to the lead rod and a stainless-steel expendable tapered drive point placed on the rod end. The rod/screen was advanced to refusal in four (4) locations, which varied from 10.0 to 11.0 feet bgs. A temporary piezometer was placed in each probe hole with a bentonite pellet seal placed at ground surface around the probe hole to allow adequate time to allow for groundwater to enter (if present) through the temporary casing/screen. Each temporary well (PMW-1GP through PMW-4GP) was located near the permanent monitoring well with the corresponding name; the temporary well location at PMW-2GP was moved approximately 20 feet to the southeast of PMW-2 due to being in the middle of the driveway. The temporary wells were gauged at least once each day from December 4 through December 7, 2023, and were dry each time.

1.3 Deviations from the Work Plan

The work plan initially indicated that all four (4) wells would be drilled to 140 feet bgs and completed with 90-foot screens. On December 4, 2023, KCC indicated that one (1) of the wells should be screened up to 10 feet bgs, for a total of 130 feet of screen. After approval from Daylight Petroleum, PMW-4 was screened from 140 feet bgs to 10 feet bgs. While drilling PMW-2, it was noted that no groundwater was encountered until approximately 135 feet bgs; subsequently, the well was screened from 140 to 100 feet bgs.

2.0 Monitoring Well Sampling

2.1 Groundwater Sampling Procedures

GSI collected groundwater levels and samples from PMW-1, PMW-2, and PMW-3 on December 7, 2023. PMW-4 was not finished developing until the afternoon of December 7; therefore, to allow sufficient time for recharge, it was not sampled that day. PMW-4, PMW-1GP, and PMW-2GP were sampled on December 18, 2023.

Groundwater levels were collected in all the monitoring wells using a decontaminated, battery-operated water level indicator. All fluid levels were measured to the north side of casing prior to collecting samples.

Samples were collected from the permanent monitoring wells using HydraSleeve™ No-Purge Samplers (Hydrasleeve) on December 7 (PMW-1, PMW-2, PMW-3) and December 18, 2023 (PMW-4). Following the collection of water level and depth measurements the Hydrasleeves was lowered using a weight and tether to the target depth(s). The Hydrasleeves were retrieved from the monitoring well by pulling the tether in a quick and careful manner so as to fill up the sampler completely. When activated, the Hydrasleeve collects a representative groundwater sample from a very defined interval in the monitoring well with minimal agitation and no displacement. When full, it seals itself, isolating the sample from fluid from other zones. The sampler was then brought to the surface, pierced with a straw provided by the supplier near the bottom of the sleeve, and groundwater was carefully collected into the laboratory provided unpreserved 250-mL plastic sample containers. Static water levels and target Hydrasleeve depths for each well are shown in the table below:

Monitoring Well	Total Depth (ft bgs)	Static Water Level (ft bgs)	Hydrasleeve Interval and Formation Lithology (ft bgs)
PMW-1	140	53.43	85 (Shale), 139 (Lime)
PMW-2	140	129.34	139 (Lime)
PMW-3	140	35.45	85 (Shale), 139 (Shale)
PMW-4	140	19.35	25 (Sandy Shale), 85 (Shale), 139 (Lime)

Groundwater samples were collected from the temporary wells PMW-1GP and PMW-2GP on December 18, 2023, using a length of polyethylene tubing and a stainless-steel check valve. The tubing was lowered into the casing to approximately 1-foot above the total depth and agitated until the groundwater samples were collected. Due to the low water volume the temporary wells were not purged. PMW-3GP and PMW-4GP were dry. After sampling the temporary casing was pulled and the boreholes were plugged in accordance with State regulations.

Each container was labeled with the sample identity and time and date of collection, in addition to the pre-printed project name, project number, and requested analysis included on the label. Samples were immediately placed within an iced cooler. The samples were accompanied by a

chain of custody/sample transmittal form. Chain-of-custody procedures were followed in accordance with industry practice. Signed chain-of-custody documentation accompanied the project sample coolers.

2.2 General Summary of Sampling Documentation

The GSI Field Manager maintained a project field log (or equivalent records) which remained on-site throughout the duration of field activities. The field records included documentation relative to contacting residents, observed site conditions, a Groundwater Sampling Form and other relevant information. Field personnel were responsible for the accurate identification of samples collected during each monitoring event. All sample labeling was done in indelible/waterproof ink on appropriate laboratory-supplied containers. Signed chain-of-custody documentation accompanied project sample coolers. The custody forms recorded all personnel responsible for sample storage and transport through laboratory submission (with the exception of commercial courier personnel). All field notes are included, and laboratory chain-of-custody forms are included in the laboratory analytical packages.

2.3 Decontamination Procedures of Sampling Equipment

Clean nitrile gloves were worn during sample collection activities, then replaced between sampling locations to minimize potential for cross contamination between sampling points. All reusable sampling equipment was decontaminated between each sample collection using non-phosphate detergent solution (Alconox), potable water rinse, and air drying.

3.0 Summary of Analytical Results

The groundwater samples were analyzed by Pace Analytical Services (Pace), in Lenexa, Kansas, for chloride via EPA Method 300.0. Results are summarized in Table 1.0 and contained in the laboratory analytical reports. Chloride concentrations collected from the two (2) shallow temporary wells had concentrations of 260 milligrams per Liter (mg/L) (PMW-2GP) and 71.9 mg/L (PMW-1GP). The shallow sample collected from PMW-4 from approximately 25 feet bgs had a chloride concentration of 523 mg/L. The chloride concentrations identified in the 85-foot samples from the three (3) wells PMW-1, PMW-3, and PMW-4 ranged from 34.9 mg/L to 680 mg/L. The chloride concentrations identified in the 139-foot samples from all four (4) permanent wells ranged from 262 mg/L to 848 mg/L.

4.0 Conclusions

GSI performed a literature review regarding the Table 1 groundwater resources in Wilson County (Pennsylvanian Kansas City Group). No Kansas Geological Survey (KGS) bulletins specific to

Wilson County were available; however, the neighboring Neosho County did have information regarding groundwater resources, including those of the Kansas City Group, as well as bulletins regarding the members of the Kansas City Group in general throughout Kansas.

Groundwater generally occurs in alluvium down to a depth of 35 feet, and in the Pennsylvanian age limestones, shales, and sandstones down to 300 feet bgs. The formations identified by the KCC and targeted for sampling at the Site included the Iola limestone, Drum limestone and Chanute shale, and Dennis limestone and Cherryvale shale. The Cherryvale shale and Iola limestone are characterized as formations that do not yield water in sufficient quantities for other than domestic and stock supplies (Jungmann, 1966).

The Chanute shale is the most productive bedrock aquifer in the county, and the quality of water from the Chanute is generally good, but very hard water is common. Chloride content in the water of the Chanute shale is generally acceptable (typically 40 ppm or less), but natural concentrations of chloride up to 1,115 ppm have been identified (Jungmann, 1966).

The Dennis limestone, which contains the Stark shale member and Winterset limestone member, has variable yields in the area. Near the western edges of the extent of the Dennis limestone in western Neosho County, slightly salty (1,250 ppm chloride) to brackish water is reported in the shale (Jungmann, 1966).

According to the KGS Bulletin, water containing more than 250 ppm is usually objectionable for municipal supplies, while water containing more than 350 ppm can be unfit for irrigation; however, cattle will often tolerate concentrations as high as 4,000 or 5,000 ppm.

Comparing the geologic descriptions to field observations, the reddish-brown sandy shales and sandstones identified down to approximately 60 feet bgs are indicative of the Chanute shale, while the characteristic dark gray to black, thinly bedded shales are likely representative of the Stark shale member of the Dennis limestone formation. Minor coal was observed at around 50 feet bgs in all wells. The brownish gray limestone that was encountered first in PMW-1, PMW-2, and PMW-4 is coarser grained with some fossil fragments observed (Drum limestone), while the deeper limestone that is encountered at the base of the borings is dark gray, flaggy, and unfossiliferous (Dennis limestone) (Moore, 1949).

Analytical results from all wells at all depths identified chloride concentrations within the range of naturally occurring chloride concentrations documented from geological formations in the area. Due to the relatively low levels of chloride concentrations identified during this investigation, it is unlikely that the known release at the blow out well is impacting groundwater from within the Table 1 interval. A sample collected from water within the excavated pit outside the building had similar chloride concentrations to the injection water at the Olnhausen Farms #6 (~40,000 ppm.), therefore, at this time it does not appear that the release occurring beneath the building is impacting groundwater within the Table 1 interval.

5.0 References

Jungmann, W.I., 1966, Geology and Ground-Water Resources of Neosho County, Kansas, Kansas Geological Survey Bulletin 183, originally published in December 1966, accessed at: https://www.kgs.ku.edu/General/Geology/Neosho/index.html.

Moore, R.C.,1949, Divisions of the Pennsylvanian System in Kansas, Kansas Geological Survey Bulletin 83, originally published November 1949, accessed at: https://www.kgs.ku.edu/Publications/Bulletins/83/index.html.

Attachment 1: Map

GSI Engineering A Universal Engineering Sciences Company	FIGURE: **1.0**	FIGURE NAME: **Chloride Concentrations in Wells**	**Daylight Petroleum** **17400 410 Road** **Neodesha, Kansas**
	DATE: **12/29/2023**	PROJECT NUMBER: **23T2177.01**	
	DRAWN BY: **HS**	PROJECT MANAGER: **K. Wheeler**	

Feet
0 50
1 in = 50 feet

N

Legend

- Monitoring Well
- Temporary Piezometer

NS = Not Sampled
1.0 = Concentration (mg/L)

Sampled 12/18/2023

ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE

Attachment 2: Table

GSI Engineering
A Universal Engineering Sciences Company

Table 1 - Groundwater - Chloride Analytical Results Daylight Petroleum - Neodesha, KS		
Well	**Depth (ft. bgs)**	**Chloride Concentration (mg/L)**
PMW2	139	416
PMW3	85	60
PMW3	139	262
PMW1	85	34.9
PMW1	139	848
PMW-2GP	10	260
PMW-1GP	10	71.9
PMW-4D	139	546
PMW-4I	85	680
PMW4S	25	523

Attachment 3: Field Notes

GSI Engineering
A Universal Engineering Sciences Company

Page 1

Field Notes

Project Name:	Project Location: Address City State	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd, Neodesha, KS	22T2177.01	KW

Arrival Time: 9:45 | Departure Time: | Non- GSI Personel Onsite: Wess Daryle, Daniel Flint Hills Drilling

Weather: sunny 50's

Times:	Notes:
7:00	Leave GSI office in Topeka ODO 244683
9:45	Arrive onsite. Marking out well locations
	PMW-02 (South) 37.42910 -95.66233
	PMW-04 (East) 37.42974 -95.66170
	PMW03 (North) 37.43001 -95.66241
10:15	Josh arrives onsite with Probe
1030	Flint Hills Drillers arrive onsite
1035	Probe begin at PMW-2, hit refusal at 10' going to try a little more, set piezo
1050	Probe began at PMW-4, hit refusal at 10'
11:00	Wess arrives, set piezo PWM-4, 11:20 PMW-1 refusal at 11' set piezo
11:05	set up on PMW-2 for air rotary, start drilling
	Hit Drum LS @ 109, limestone until 113
	Hit second LS @ 119, setting well, Go deeper per KW
	Hit water in Bround 125', sample for Cl, no response in strip. TD = 139.5', 40' screen 4 bu wells #2
12:15	Set well casing, Josh leaves w/ probe, grout well
1:00	move to PMW-01, start drilling
1:50	TD 140', checked w/ landowners rep - want soil then spread on grass to the west
1:54	starting to put in casing - doing 90' screen per KW
2:05	Begin sand/gravel pack

Field Lead: AR

Signature:

Date: 12/4/2022

GSI Engineering
A Universal Engineering Sciences Company

Page 2

Field Notes

Project Name:	Project Location: Address City State	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd, Neodesha, KS	22T2177.01	KW

Arrival Time:	Departure Time:	Non- GSI Personel Onsite:
Weather:		

Times:	Notes:
2:15	Begin grouting PMW-1 5 buckets H2O
235	Done drilling for day- FHD needs to go pick up more screen & sand, will meet back at site tomorrow
2:50	Cleaning up, checked piezos- all dry Pick up trash around mws
3:15	Leave site, drive to hotel in Indy
3:45	Arrive at hotel
	AR 12/4/23

Field Lead:	AR	
Signature:		Date: 12/4/23

Rev. 2022

GSI Engineering
A Universal Engineering Sciences Company

Field Notes

Project Name:	Project Location: Address City State	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd, Neodesha, KS	22T2177.01	KW

Arrival Time: 9:00 | Departure Time: 4:30

Weather: Sunny 40s

Non- GSI Personel Onsite: Julie Shaffer, KCC; Danny - DLP vactruck; Wess, Daryle, Daniel - FHD

Times:	Notes:
830	Leave Hotel
9:00	Arrive onsite, updated Kelsee regarding plan for day.
9:10	Julie Shaffer w/ KCC arrive
9:45	Flint Hills arrives 10:00 Tailgate H&S, set up on PMW3 10:05 start drilling
10:45	Finish drilling TD 140' screen 140-50'
11:00	casing well, 11:10 installing sand & gravel pack 11:15 Grout 12 bags, 3 buckets
1130	Set up on last well PMW4
12:08	TD @ 140', 12:20 casing well
1235	sand & gravel pack install, to 8'
12:45	start grouting 2 bags, 1 bucket
	measured SWL in PMW-2: 127.47' btoc
	Drop bailer down to get Cl field sample
	<400 ppm, calculated purge vol = 92 gallons
2:00	Bailed dry 2 gallons, decon probe of SWL
2:08	PMW-1 SWL = 52.00' btoc, calculated pv = 437 gal
	Cl test strip 1,250 ppm - call Kelsie
2:40	PMW-3 115.20 SWL Chloride field strip: nondetect <400
3:30	Vac Truck arrives, hook up Waterra.
4:15	Lost tubing down well. Send vac truck guy away.
4:30	Leave site to go buy supplies. 6:15 Get to hotel.

Field Lead: AR — AR 12/5/23

Signature: [signature] Date: 12/5/2025

GSI Engineering
A Universal Engineering Sciences Company

Field Notes

Project Name:	Project Location: Address City State	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd, Neodesha, KS	22T2177.01	KW

Arrival Time:	Departure Time:	Non- GSI Personel Onsite:
7:30	545p	Danny - Bailey Oil Co for DLP
Weather: sunny, 40s		Kerry - DLP Wess, Daryle, Daniel - FHD

Times:	Notes:
6:45	leave hotel, stop for fuel in Independence
7:30	Arrive onsite, start on trying to fish tubing out of PMW-1.
8:00	Kerry arrives and is able to get tubing out, vac truck arrives 8:45
8:45	Set up on PMW-1 w/ Waterra, Wess arrives at 9:00
9:15	PMW-1 GP hole is dry - ~~12:23~~ 2 min = 5 gals, start pumping 9:15
9:45	PMW-4 SWL 19.13' btoc, pull sample for field Cl: test <400 9:50 Complete PMW-2
9:50	measure PMW-4 probe - dry 10:00 measure PMW-2 probe - dry measure PMW-1 probe - dry 10:22 measure PMW-3 probe - dry 10:15 complete PMW-1
11:00	Begin developing PMW-3 using surlifting methods full volume came, about 2 gal/min for about 4 min, shut off for 5 min to let recharge, slowly coming. 11:00 PMW-1 pumped dry, letting sit.
12:00	PMW-1 pumped dry after ~200 gallons. SWL not recovering. Sent tanker off, will check SWL later w/ bailer
1223	measured SWL in PMW-2 again, 128.71', almost 24 hours to recharge still 1' below original SWL
1:15	bailed dry again (PMW-2)
1:20	PMW-3 - very little water came out after 1 hr - total vol pumped = 1.5 well volum

Field Lead: AR

Signature:

Date: 12/6/23

Driller says can't air lift out of PMW-04, started bubbling up through the grout after 1 well volume. May need to use Waterra to get rest of it out?

1:25 Measured SWL in PMW-1 again, 110.20, 2.5 hours to recharge to that

1:45 Drove to Indy to return cable puller 2:50 arrive back onsite

3:00 FHD leaves Set up Waterra on PMW-4

3:30 start dev. PMW-4 Pump on well until 5:45 - dark, leave site

6:15 Arrive at hotel

AR 12/6/23

Dec 7

Leave hotel 7:30 | 8:00 Arrive onsite set up on PMW-4 to finish development

8:15 resume development, got water pumping at 1 gpm

8:50 measure SWL PMW-2 129.34' btoc, set HS at 138'

9:05 pull sleeve, collect sample PMW-2 Chloride

9:35 PMW-3 SWL 30.45'

9:40 call KW w/ update. 9:43 PMW-4 pumped dry after 269 gallons going to let it sit while sample other wells

9:54 PMW-3 deploy deep HS at 9:56, sample 10:00 139'

10:07 PMW-3 deploy 85' HS at 10:07, collect sample at 10:10

10:35 Restart pump at PMW-4, getting water again

Measure SWL PMW-1 53.43', deploy HS at 139' 10:53

10:57 sample PMW-1 139' 11:03 deploy HS at 85' sample at 11:07

11:15 Waiting for well to develop. Clean up trash, take GPS of all probes/wells. Continue to check on pump.

11:45 update KW, continue to develop PMW-4

4:00pm pumped dry 4:15 leave site

6:15 Arrive at GSI Topeka office, start unloading

6:45 done unloading

12/7/23
AR

12/7/23

GSI Engineering
A Universal Engineering Sciences Company

Probe Summary Log

Project Name:	NA	Project Location: Address City		GSI Project No:	GSI PM:
Daylight Petroleum		17400 410 Rd, Neodesha, KS		22T2177.01	KW
Borings	**GPS Coordinates**	**Pushed (ft)**	**Plugged (ft)**	**Temp Casing (✓)**	**Date**
PMW-2GP	37.42911 -95.662232	10		✓	12/4/23
PMW-4GP	37.42974 -95.662167	10		✓	12/4/23
PMW-3GP	37.43000 -95.662244	10		✓	12/4/23
PMW-1GP	37.42974 -95.662289	11		✓	12/4/23
Signature: AR Field Lead:				Date: 12/4/23	

GSI Engineering
A Universal Engineering Sciences Company

Subcontractor Log

Project Name:	Project Location:	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd, Neodesh	22T2177.01	KW

Subcontractor: Flint Hills Drilling

Equipment:	Date(s):	Completed Work
30k Speedstar	Dec 4th, 5th, 6th	Drilling
Pete water truck	Dec 4th 6th 6th	Support Drilling Rig
44' Trailer	Dec 4th	Bring in supplies - Equipment
2006 F-350	Dec 4th, 5th, 6th	Pulling trailer / support truck
Titan Dump trailer	Dec 5th, 6th	Haul gravel Pack (Xtra gravel)
259 d3 skid loader	Dec 5th 6th, 4th	Cuttings support Drilling
Air Compressor	Dec 6th	Development

Personnel Onsite	Date(s):					
Wess Presley	On-site? (✓)	4th 5th 6th				
Daniel Hall	On-site? (✓)	4th 5th 6th				
Donnie Schwerdt	On-site? (✓)	4th 5th 6th				
	On-site? (✓)					
	On-site? (✓)					
	On-site? (✓)					

Subcontractor Signature:	Date:
	Dec-6-2023
GSI Signature:	**Date:**

GSI Engineering
A Universal Engineering Sciences Company

Drilling Summary Log

Project Name:	NA	Project Location: Address City State		GSI Project No:	GSI PM:
Daylight Petroleum		17400 410 Rd, Neodesha, KS		22T2177.01	KW

Wells	Well Finish	Drilled (ft)	Plugged (ft)	Developed (✓)	Date
MW-01	Paved, Flushmount	29.2'	n/a		01.01.19
PMW-1	concrete flushmount	140.0'	NA	✓	12/5/2023
PMW-2	concrete flushmount	140.0'	NA	✓	12/4/2023
PMW-3	concrete flushmount	140.0'	NA	✓	12/5/2023
PMW-4	concrete flushmount	140.0'	NA	✓	12/4/2023

Signature:

Field Lead: AR

Date: 12/7/2023

GSI Engineering

Development by Volume

Project Name:	Project Location: Address City State	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd. Neodesha, KS	22T2177.01	KW

Well Name	Inside Diameter	Total Depth	Static	Calculated Purge	Actual Purge
PMW-2	2"	140	127.47	A = ([Total Depth] - [Water Level]) × 2.78 X = ([Total Depth] - [Water Level]) × 0.163 Y = ([A] - [X]) V = ([Y] × 0.30) + [X] Minimum Development = 5 × [V] gallons	
				A = 140 - 127.47 x 2.78 = 34.8334 | V = 37.7910 * 0.3 + 2.04239 X = 140 - 127.47 x 0.163 = 2.04239 Y = 34.8334 - 2.04239 = 32.79101 13.38 · 5 = 64.92 + 25 = 92 gallons Bailed dry twice	1.75 gal 1.75 gal 3.5 gal
PMW-1	2"	140	5200	A = 140 - 52 = 88 · 2.78 = 244.64 | V = 230.296 · 0.3 + 7 = X = 140 - 52 · 0.163 = 14.344 | 83.4328 · 5 = Y = 244.64 - 14.344 = 230.296 | 417.164 + 20 = 437 437 gallons	200 gal pumped dry w/ Waterra
PMW-3	2"	140	115.20	A = 140 - 115.20 · 2.78 = 68.944 X = 140 - 115.2 · 0.163 = 4.0424 Y = 68.944 - 4.0424 = 64.9016 | V = 64.9016 · 0.3 + X = 23.5142 · 5 = 117.5711 133 gallons	~35 gallons Air Lifted Dry
PMW-4	2"	140	19.13	A = 140 - 19.13 · 2.78 = 336.02 X = 140 - 19.13 · 0.163 = 19.702 Y = 336.02 - 19.702 = 316.318 | 316.318 · 0.3 + 19.702 = 112.59 · 5 = 568 gal.	554 gallons went dry

Signature: Alex Rea

Field Lead: AR

Date: 12/4 - 12/7/23

2 inch Wells															
calc feet of water	5.00	7.50	10.00	12.50	15.00	17.50	20.00	22.50	25.00	27.50	30.00	32.50	35.00	37.50	40.00
annulus GPF mod	13.90	20.85	27.80	34.75	41.70	48.65	55.60	62.55	69.50	76.45	83.40	90.35	97.30	104.25	111.20
annulus minus casing	13.09	19.63	26.17	32.71	39.26	45.80	52.34	58.88	65.43	71.97	78.51	85.05	91.60	98.14	104.68
30% of annulus "donut"	3.93	5.89	7.85	9.81	11.78	13.74	15.70	17.66	19.63	21.59	23.55	25.52	27.48	29.44	31.40
GPF (diameter)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
total dev in gallons (x5)	23.70	35.55	47.41	59.26	71.11	82.96	94.81	106.66	118.51	130.36	142.22	154.07	165.92	177.77	189.62
total dev volume (rounded)	23.75	35.75	47.50	59.50	71.25	83.00	95.00	106.75	118.75	130.50	142.25	154.25	166.00	178.00	189.75

Casing Diameter	x Gallons per Foot	Annulus GPF
1"	0.041	
2"	0.163	2.78
3"	0.367	
4"	0.653	4.29
6"	1.469	
8"	2.611	
Use Correct Diameter for Calculations		

Development calculations	
A= Total Annulus Volume 100%	A= (TD-SWL) x Annulus GPF
X= Casing Volume	X = (TD- SWL) x Casing GPF
Y=Annulus Volume minus Casing	A - X
One Well Volume of Casing plus 30% of Annulus	(Y x 0.30) + X
Purge Volumes (one volume equals casing plus 30% annulus)	
Sample	3 volumes
Develop	5 volumes

Table is for reference only. Calcuate volumes for each well.

Kansas One Call

Ticket No: 23649909
STANDARD
Original Call Date: 11/29/23 08:23 am
Op: webusr55
Work to Begin Date: 12/04/23 12:01 am
Op: webusr55

Caller Information
Company Name: GSI ENGINEERING, A UES COMPANY
Fax Phone:
Contact Name: ALEXANDRA RICHARDS
Phone: 661-364-3962
Alt. Contact: ALEXANDRA RICHARDS
Alt. Phone: 661-364-3962
Caller Address: 2900 BUTTON RD SUITE A-7 TOPEKA, KS 66618
Contact Email: arichards@gsinetwork.com

DIG SITE INFORMATION
Type of Work: SOIL BORINGS
Explosives: N
Duration: 4 DAY(S)
Trenchless Excav: Y
Work Being Done For: DAYLIGHT PETROLEUM

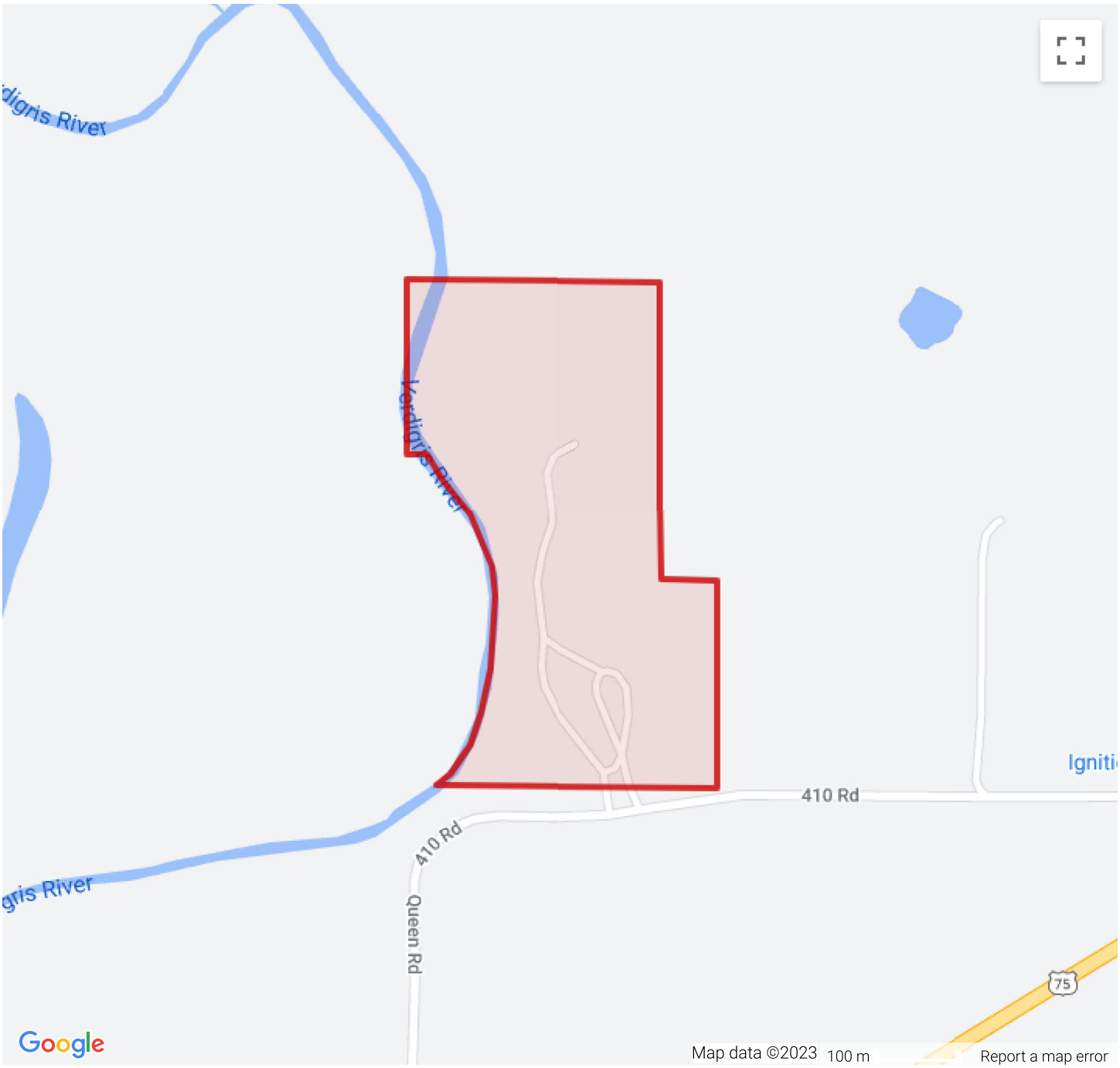
DIG SITE LOCATION
County: WILSON
Place: NEODESHA
Address: 17400
Street: 410 RD
Intersecting Street: QUEEN RD
Location of Work: MARK ENTIRE PROPERTY.
Remarks:
Map Twp: 30S
Rng: 16E
Sect-Qtr: 21-NW-NE,16-SW-SE
Map Coord NW Lat: 37.4337882
Lon: -95.6655612
SE Lat: 37.4281767
Lon: -95.6612369

MEMBERS NOTIFIED

District	Company Name	Business Hrs	WebStatus
ATMIND01	ATMOS ENERGY	866-322-8667	Not yet responded
ATT301	ATT DISTRIBUTION	800-778-9140	Not yet responded
DARTCB01	REP KANSAS GATHERING LLC	620-205-7226	Not yet responded
EVSKS1	EVERGY	785-249-1948	Not yet responded
WILNAT50	SOUTHERN STAR CEN GAS	800-324-9696	Not yet responded
WLSNRW04	WILSON CO RWD #4	620-305-9014	Does not participate in Ticket Check

Legend: Locate Polygon

Lat/Lon


410 Rd
410 Rd
Queen Rd
75
Google
Map data ©2023
100 m
Report a map error

GSI Engineering
A Universal Engineering Sciences Company

Hydrasleeve Sampling Form

Project Name:		Project Location:		GSI Project No:	Field Lead:	GSI PM:
Daylight Petroleum		17400 410 Rd, Neodesha, KS		22T2177.01	AR	KW
Well ID	Initial SWL	Total Depth	Old Tag / New Tag	Date/Time Installed	Date/Time Sampled	Notes/Repairs Needed
PMW-2	129.34	140.0		8:57 12/7/23	9:05 12/7/23	139.00
PMW-3	35.45	140.0		139.00 9:54 85.00 10:07 12/7/23	139.00 10:00 85.00 10:10	139.00 85.00
PMW-1	53.43	140.0		139.00 10:53 85.00 11:03 12/7/23	139.00 10:57 85.00 11:07 12/7/23	139.00 85.00
PMW-4	NS	NS				

Signature:	Date:
	12/7/2023

QA/QC Procedures: Decon SWL meter w/ Alconox/DI runse, use dedicated HS & twine, gloves, new lab supplied bottles

GSI Engineering
A Universal Engineering Sciences Company

Field Notes

Project Name:	Project Location:	GSI Project No:	GSI PM:
Daylight Petroleum	17400 410 Rd, Neodesha, KS	23T2177.01	KW

Arrival Time:	Departure Time:	Non- GSI Personel Onsite:
Weather:		

Times:	Notes:
	08:00 Loaded truck, Cooler received only had 3 250ml unpreserved bottles, grabbed 4 extras, ice in cooler. 09:30 To site, 11:00 On site, PMW-2GP had water but not enough to completely fill bottle, let it sit for a while and was able to fill it. PMW-4GP was DRY, no sample. PMW-4D from ~139', PMW-4I from ~85', PMW-4S from ~22', PMW-3GP was DRY, no sample. 12:50 PMW-1GP had water & sampled. All wells were plugged with bentonite, pics taken, Note cam did not save pictures of plugged PMW-1GP & 4GP. 13:10 off site. 15:40 Back at office, Cooler packed on ice and shipped off

Field Lead:	MB	
Signature:	Matthew Bagwell	Date: 12.18.23

GSI Engineering

A Universal Engineering Sciences Company

Bailer Sampling Form

Project Name: Daylight Petroleum	Project Location: 17400 410 Rd, Neodesha, KS		Page 1 of 1	GSI Project No: 23T2177.01	GSI Technician: MB		GSI PM: KW
Project Code:	Leave Office:	On Site:	Leave Site:	Arrive Office:	Gear Up/Down:	Starting mileage:	
Current Business:						Ending mileage:	

Well ID	PMW-1GP	PMW-2GP	PMW-3GP	PMW-4GP				
Well Diameter			—	—				
KDHE Old Tag Number	—	—	—	—				
KDHE New Tag Number	—	—	—	—				
Depth to Product	—	—	—	—				
Depth to Ground Water (prior to purge)	8.55	5.10	DRY	DRY				
Total Well Depth	12.25	12.25		—				
Calculated Purge			—	—				
Actual Purge			—	—				
Depth to Ground Water (prior to sample)	—	—	—	—				
Recharge rate (2 hours for slow recharge)	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry	Fast / Slow / Purged Dry
Sample Time	12:50	11:30	—	—				
Sample Observations								
Appearance	Clear / Cloudy	Clear / Cloudy	Clear / Cloudy	Clear / Cloudy	Clear / Cloudy	Clear / Cloudy	Clear / Cloudy	Clear / Cloudy
Pungency	None / Slight / Strong	None / Slight / Strong	None / Slight / Strong	None / Slight / Strong	None / Slight / Strong	None / Slight / Strong	None / Slight / Strong	None / Slight / Strong
Sedimentation	Clear / Slightly / Heavy	Clear / Slightly / Heavy	Clear / Slightly / Heavy	Clear / Slightly / Heavy	Clear / Slightly / Heavy	Clear / Slightly / Heavy	Clear / Slightly / Heavy	Clear / Slightly / Heavy
Well in Good Condition?	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Repairs, checked if necessary.								
Pad Damaged	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes
Vault Damaged	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes
Lid Damaged or Missing	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes
Bolts Damaged or Missing	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes
J Plug Damaged or Missing	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes
Bailer Damaged or Missing	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes	☐ - See Notes

Decontamination Procedures: Alconox Detergent & DI Water

Equipment Used: e-line, metal detector, toolkit

Non-GSI Personnel:

Technician Signature: [signature]

Bailers / Line Replaced: Y / N

Number of Bailers Replaced: —

Weather: Clear 40's

Date: 12.18.23

QA/QC Procedures:

Duplicate ...

Duplicate ... 5%)

Rinsate from water ...

GSI Engineering
A Universal Engineering Sciences Company

Hydrasleeve Sampling Form

Project Name:		Project Location:		GSI Project No:	Field Lead:	GSI PM:
Daylight Petroleum		17400 410 Rd, Neodesha, KS		23T2177.01	MB	KW
Well ID	Initial SWL	Total Depth	Old Tag / New Tag	Date/Time Installed	Date/Time Sampled	Notes/Repairs Needed
PMW-4	19.35		NA / 060491	MB	~~S: 12:00~~ ~~I: 12:15~~ ~~D: 12:30~~	Shallow: 12:30 Intermediate: 12:15 Deep: 12:00
Signature: [signature]					Date: 12.18.23	

QA/QC Procedures: Duplicate from MW-8

GSI Engineering
a Universal Engineering Sciences Company

Probe Summary Log

Project Name:	NA	Project Location: Address City		GSI Project No:	GSI PM:
Daylight Petroleum		17400 410 Rd, Neodesha, KS		22T2177.01	KW
Borings	**GPS Coordinates**	**Pushed (ft)**	**Plugged (ft)**	**Temp Casing (✓)**	**Date**
PMW-2GP	37.42911 -95.662232	10		✓	12/4/23
PMW-4GP	37.42974 -95.66167	10		✓	12/4/23
PMW-3GP	37.43000 -95.662244	10		✓	12/4/23
PMW-1GP	37.42974 -95.662289	11		✓	12/4/23
Signature:				Date:	
Field Lead: AR				12/4/23	

Attachment 4: Photographs

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Location of PMW-2GP, looking north at shop.

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Location of PMW-2GP, looking west.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Location of PMW-4GP looking north.

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Location of PMW-4GP looking west.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Location of PMW-3GP looking north.

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Location of PMW-3GP looking south.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-2GP temporary well

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-4GP temporary well.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Probing PMW-3GP

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-1GP temporary well next to location of PMW-1 being drilled.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Typical reddish brown sand and sandy shale in shallower depths

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Darker gray sandy shale at intermediate depths.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Coal seam encountered at 55' in PMW-2

GENERAL LOCATION

Site: Daylight Petroleum
Neodesha, KS

Notes

Light gray and dark gray limestones in PMW-1

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-3 being drilled next to PMW-3GP

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-4

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Developing PMW-1

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-2 completion.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-3 completion.

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-1 completion.

© GSI ENGINEERING, LLC

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

Soil thin spread onsite.

© GSI ENGINEERING, LLC

Attachment 5: Laboratory Analytical Reports

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 21, 2023

Alexandra (Alex) Richards
GSI
2900 NW Button Rd
Suite A-7
Topeka, KS 66618

RE: Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Dear Alexandra (Alex) Richards:

Enclosed are the analytical results for sample(s) received by the laboratory on December 08, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-5
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212023-1
Oklahoma Certification #: 2022-057
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-12
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60443738001	**PMW-2 139'**	Water	12/07/23 09:05	12/08/23 16:00
60443738002	**PMW-3 85'**	Water	12/07/23 10:10	12/08/23 16:00
60443738003	**PMW-3 139'**	Water	12/07/23 10:00	12/08/23 16:00
60443738004	**PMW-1 85'**	Water	12/07/23 11:07	12/08/23 16:00
60443738005	**PMW-1 139'**	Water	12/07/23 10:57	12/08/23 16:00

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60443738001	**PMW-2 139'**	EPA 300.0	RKA	1	PASI-K
60443738002	**PMW-3 85'**	EPA 300.0	RKA	1	PASI-K
60443738003	**PMW-3 139'**	EPA 300.0	RKA	1	PASI-K
60443738004	**PMW-1 85'**	EPA 300.0	RKA	1	PASI-K
60443738005	**PMW-1 139'**	EPA 300.0	RKA	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-2 139' **Lab ID: 60443738001** Collected: 12/07/23 09:05 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**416**	mg/L	50.0	50		12/21/23 00:30	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-3 85' **Lab ID: 60443738002** Collected: 12/07/23 10:10 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**60.0**	mg/L	20.0	20		12/19/23 16:11	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-3 139' **Lab ID: 60443738003** Collected: 12/07/23 10:00 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**262**	mg/L	20.0	20		12/19/23 16:23	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-1 85' **Lab ID: 60443738004** Collected: 12/07/23 11:07 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**34.9**	mg/L	5.0	5		12/21/23 00:42	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-1 139' **Lab ID: 60443738005** Collected: 12/07/23 10:57 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**848**	mg/L	100	100		12/21/23 00:54	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

QC Batch: 877650
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60443738001, 60443738002, 60443738003, 60443738004, 60443738005

METHOD BLANK: 3476253 Matrix: Water
Associated Lab Samples: 60443738001, 60443738002, 60443738003, 60443738004, 60443738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/19/23 15:25	

METHOD BLANK: 3477927 Matrix: Water
Associated Lab Samples: 60443738001, 60443738002, 60443738003, 60443738004, 60443738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/20/23 23:28	

LABORATORY CONTROL SAMPLE: 3476254

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 3477928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3476255 3476256

Parameter	Units	60443252002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.1	25	25	47.7	47.4	102	101	80-120	1	15	

SAMPLE DUPLICATE: 3476257

Parameter	Units	60443252002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	22.1	21.9	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60443738001	**PMW-2 139'**	EPA 300.0	877650		
60443738002	**PMW-3 85'**	EPA 300.0	877650		
60443738003	**PMW-3 139'**	EPA 300.0	877650		
60443738004	**PMW-1 85'**	EPA 300.0	877650		
60443738005	**PMW-1 139'**	EPA 300.0	877650		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 60443738

60443738

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: UES_GSI Topeka

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☑ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.7 **Corr. Factor** -0.3 **Corrected** 1.4

Date and initials of person examining contents: AF 12/12

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:**	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd.
Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	UES_GSI Topeka	Contact/Report To:	Alexandra Richards
Street Address:	2900 NW Button Rd, Ste. A-7, Topeka, KS 66618	Phone #:	785-409-1320
		E-Mail:	arichards@teamues.com
		Cc E-Mail:	kwheeler@teamues.com
Customer Project #:	23T2177.01	Invoice To:	Accounts Payable
Project Name:	Daylight Petroleum	Invoice E-Mail:	ap@gsinetwork.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	UES Rates
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET

County / State origin of sample(s):

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other_____

Regulatory Program (DW, RCRA, etc.) as applicable:

Rush (Pre-approval required):
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other_____
Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

Specify Container Size **
Identify Container Preservative Type***
Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr:
AcctNum / Client ID:
Table #:
Profile / Template: 15928, 6
Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res. Cl2	Number & Type of Containers Plastic	Number & Type of Containers Glass	300.0 Chloride	Sample Comment
PMW-2 139'	W	G	12/7/2023	9:05				1		✓	60443736
PMW-3 85'	W	G	12/7/2023	10:10				1		✓	
PMW-3 139'	W	G	12/7/2023	10:00				1		✓	
PMW-1 85'	W	G	12/7/2023	11:07				1		✓	
PMW-1 139'	W	G	12/7/2023	10:57				1		✓	

Customer Remarks / Special Conditions / Possible Hazards:

Collected By:
Printed Name: Alexandria Richards
Signature:

Additional Instructions from Pace®:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)
				1.4

Relinquished by/Company: (Signature) GSI/UES	Date/Time: 12/8/23 13:00	Received by/Company: (Signature)	Date/Time: ~~12/12~~ 12/14 1600	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORQ-0019_v01_082123 ©

Client: UES_GSL Topeka

Profile # 15928-6

Site: Daylight Petroleum

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																				1											
2																					1											
3																					1											
4																					1											
5																					1											
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60413738

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 26, 2023

Alexandra (Alex) Richards
GSI
2900 NW Button Rd
Suite A-7
Topeka, KS 66618

RE: Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Dear Alexandra (Alex) Richards:

Enclosed are the analytical results for sample(s) received by the laboratory on December 19, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-5
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212023-1
Oklahoma Certification #: 2022-057
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-12
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60444220001	**PMW-2GP**	Water	12/18/23 11:30	12/19/23 08:45
60444220002	**PMW-1GP**	Water	12/18/23 12:50	12/19/23 08:45
60444220003	**PMW-4D**	Water	12/18/23 12:00	12/19/23 08:45
60444220004	**PMW-4I**	Water	12/18/23 12:15	12/19/23 08:45
60444220005	**PMW-4S**	Water	12/18/23 12:30	12/19/23 08:45

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60444220001	**PMW-2GP**	EPA 300.0	RKA	1	PASI-K
60444220002	**PMW-1GP**	EPA 300.0	RKA	1	PASI-K
60444220003	**PMW-4D**	EPA 300.0	RKA	1	PASI-K
60444220004	**PMW-4I**	EPA 300.0	RKA	1	PASI-K
60444220005	**PMW-4S**	EPA 300.0	RKA	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-2GP **Lab ID: 60444220001** Collected: 12/18/23 11:30 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**260**	mg/L	20.0	20		12/21/23 20:04	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-1GP **Lab ID: 60444220002** Collected: 12/18/23 12:50 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**71.9**	mg/L	20.0	20		12/21/23 20:16	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-4D **Lab ID: 60444220003** Collected: 12/18/23 12:00 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**546**	mg/L	100	100		12/22/23 14:21	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-4I **Lab ID: 60444220004** Collected: 12/18/23 12:15 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**680**	mg/L	100	100		12/22/23 14:33	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-4S **Lab ID: 60444220005** Collected: 12/18/23 12:30 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**523**	mg/L	100	100		12/22/23 14:44	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

QC Batch: 878003 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60444220001, 60444220002, 60444220003, 60444220004, 60444220005

METHOD BLANK: 3477872 Matrix: Water
Associated Lab Samples: 60444220001, 60444220002, 60444220003, 60444220004, 60444220005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/21/23 17:36	

METHOD BLANK: 3478716 Matrix: Water
Associated Lab Samples: 60444220001, 60444220002, 60444220003, 60444220004, 60444220005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/22/23 13:11	

LABORATORY CONTROL SAMPLE: 3477873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3478717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3477874 3477875

Parameter	Units	60444191001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	213	100	100	359	391	146	178	80-120	9	15	M1

MATRIX SPIKE SAMPLE: 3477876

Parameter	Units	60443752002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	179	250	403	89	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60444220001	**PMW-2GP**	EPA 300.0	878003		
60444220002	**PMW-1GP**	EPA 300.0	878003		
60444220003	**PMW-4D**	EPA 300.0	878003		
60444220004	**PMW-4I**	EPA 300.0	878003		
60444220005	**PMW-4S**	EPA 300.0	878003		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 60444220

60444220

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Universal Eng.. - GSI

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 777527925 2599 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T218 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0.8 **Corr. Factor** -0.3 **Corrected** 0.5

Date and initials of person examining contents: HF 12/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:**	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Universal Engineering - dba GSI_Topeka	Contact/Report To:	Alexandra (Alex) Richards
Street Address:	2900 NW Button Rd, Topeka, KS 66618	Phone #:	(785)409-1320
		E-Mail:	arichards@gsinetwork.com
		Cc E-Mail:	
Customer Project #:		Invoice To:	Alexandra (Alex) Richards
Project Name:	23T2177.01 Daylight Petroleum	Invoice E-Mail:	arichards@gsinetwork.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Kansas

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other_____

Regulatory Program (DW, RCRA, etc.) as applicable:

Rush (Pre-approval required):
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other_____
Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Heather Wilson
AcctNum / Client ID:
Table #:
Profile / Template: 15928
Prelog / Bottle Ord. ID: EZ 3032416

Preservation non-conformance identified for sample.

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res. Cl2	Number & Type of Containers Plastic	Number & Type of Containers Glass	300.0 Chloride	Sample Comment
PMW-2GP	GW	G	12.14.23	11:30				1		X	60441120
PMW-1GP	GW	G	12.18.23	12:50				1		X	
PMW-4D	GW	G	12.18.23	12:00				1		X	
PMW-4I	GW	G	12.18.23	12:15				1		X	
PMW-4S	GW	G	12.18.23	12:30				1		X	

Customer Remarks / Special Conditions / Possible Hazards:

Collected By:
Printed Name: Monte Bacon
Signature:

Additional Instructions from Pace®:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)
	T98	-0.3	0.8	0.5

	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Relinquished by/Company: (Signature) / GSI	12.18.23 15:30		12.19.23 0845	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Client: Universal Eng... GST

Profile # 19028

Site: 23T2177.01 Daylight Petroleum

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																				1											
2																					1											
3																					1											
4																					1											
5																					1											
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60444220

Attachment 6: Boring Logs and WWC-5 Forms

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
MW-1			FHD	Richards

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:	37.42971	Asphalt - Concrete - Grass - Gravel	
				Drilling Method / Sampling Method	Total Depth
End of Drilling		Long:	-95.66291	Air Rotary	140

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (Include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
5					sandy dry clay somewhat stiff reddish brn	5		Elevation Casing: Pad: Protective Cover Type: Size: Pad Size: Well Seal Type: Amount: Water: (5g/30ba) Well Pack Type: Amount:
10					dry soft sandy clay yellowish brn	10		
15					dry reddish brown fine sand w/ a little shale at bottom	15		
20					dry light brown/yellow sandstone not very competent	20		Riser Type: Schedule: Inside Diam.: Length: Screen Type: Schedule: Slot: Inside Diam.: Length:
25					dry reddish brown SS	25		
30					dry lt yellow SS	30		End Cap Type: PVC Length: 2"
35					dry lt yliw SS	35		Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd,
Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date: 12/18/23

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW-1				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	
				Drilling Method / Sampling Method	Total Depth
End of Drilling		Long:			

Dpth Ft.	Sample Data: Sample No. & Type	% Rcvr.	PID	Soil Description: USCS	Geological Description & Remarks (Include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Well Construction: Schematic	Details
40					Med gray shale	40		Elevation Casing: Pad: Protective Cover
45					med gray shale	45		Type: Size: Pad Size: Well Seal
50					lt gray shale	50		Type: Amount: Water: (5g/50lbs) Well Pack Type: Amount:
55					dk gray shale coal seam	55		Riser Type: Schedule: Inside Diam.: Length:
60					lt gray competent shale	60		Screen Type: Schedule: Slot: Inside Diam.: Length:
65					lt to dk gray dry shale	65		End Cap Type: PVC Length: 2"
70					lt gray shale dry	70		Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW-1				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:	37.42971	Asphalt - Concrete - Grass - Gravel	
End of Drilling		Long:	-95.66291	Drilling Method / Sampling Method	Total Depth

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
75					dk gray to black thin bedded shale dry	75		Elevation Casing: Pad: Protective Cover
80					thinly bedded dk gray to blk shale dry	80		Type: Size: Pad Size: Well Seal
85					lt gray to blk thinly bedded shale dry	85		Type: Amount: Water: (5g/50lbs) Well Pack
90					dry gray to blk shale	90		Type: Amount: Riser
95					dry gray to blk shale	95		Type: Schedule: Inside Diam.: Length: Screen
100					dry dark gray to black shale	100		Type: Schedule: Slot: Inside Diam.: Length: End Cap
105					lt gray shale	105		Type: PVC Length: 2" Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

Screen 140 - 50

110 lt gray dny limestone

115 lt gray ls dns

120 lt gray shale

125 lt gray-black shale

130 lt gray/black shale

135 dk gray black shale

140 ~~dark~~ lt gray ls

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW-2			Flint Hills	Richards

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:	37.42911	Asphalt - Concrete - Grass - Gravel	~~GeoProbe~~
End of Drilling		Long:	-95.68232	Drilling Method / Sampling Method: Air Rotary ~~Dual Tubes - MacroCore~~	Total Depth: 140.0

Dpth Ft	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft
5					plastic slightly moist lt yellow brn clay (0-4')	5
					slightly moist clayey sandy shale reddish brn (4-8')	
10					dry sandy shale lt yellowbrn (8-12')	10
15					(12-16')	15
20					dry v. sandy coarse grained shale lt brn w/ grey & reddish brn (16-20')	20
25					dry v. sandy shale med yellow brn (20-24')	25
30					dry sandy shale more bedded med gray (24-28') (28-32')	30
35					dry med/dk shale gray thinly bedded (32-36')	35

Well Construction

Schematic	Details
	Elevation
	Casing:
	Pad:
	Protective Cover
	Type:
	Size:
	Pad Size:
	Well Seal
	Type: Bentonite Grout Chips
	Amount: 24 bags
	Water: 25 gal
	Well Pack
	Type:
	Amount: 42'
	Riser
	Type: PVC
	Schedule: 80
	Inside Diam.: 2"
	Length: 140'
	Screen
	Type:
	Schedule:
	Slot:
	Inside Diam.:
	Length: 40'
	End Cap
	Type:
	Length:
	Date Drilled: 12/4/2023
	Date Completed: 12/6/2023

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name: ~~Rode Cleaners - KCK~~ Daylight

Project Location: ~~4024 Rainbow Blvd, Kansas City~~

Signature:

GSI Job. No: ~~217457.01~~ Date: 12/4/23

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW2				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	GeoProbe
End of Drilling		Long:		Drilling Method / Sampling Method: Dual Tubes - MacroCore	Total Depth

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (Include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
40 5					dry med-dk gray thin bedded shale (0-4') (4-8')	5		Elevation Casing: Pad: Protective Cover Type: Size: Pad Size: Well Seal
45 10					dry lt-med gray thinly bedded shale slightly sandy (8-12')	10		Type: Amount: Water: Well Pack
50 15					dry dk. gray to black v. thinly bedded fg shale (12-16')	15		Type: Amount: Riser
55 20					dry dk gray to black thinly bedded shale (16-20')	20		Type: Schedule: Inside Diam.: Length: Screen
60 25					dry med gray thinly bedded shale (20-24') (24-28')	25		Type: Schedule: Slot: Inside Diam.: Length: End Cap
65 30					dry dk gray to blk thinly bedded shale (28-32')	30		Type: Length: Date Drilled:
70 35					dry med gray thin bed shale (32-36')	35		Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Rode Cleaners - KCK
Project Location:	4024 Rainbow Blvd, Kansas City
Signature:	
GSI Job. No: 2174167.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW2				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	
				Drilling Method / Sampling Method	Total Depth
End of Drilling		Long:			

Dpth Ft.	Sample Data: Sample No. & Type	% Rcvr.	PID	Soil Description: USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Well Construction: Schematic	Details
75					dry med. gray shale	75		Elevation Casing: Pad: Protective Cover
80					dry med gray shale	80		Type: Size: Pad Size: Well Seal
85					dry lt gray shale	85		Type: Amount: Water: (5g/50lbs) Well Pack
90					dry lt gray shale	90		Type: Amount: Riser Type: Schedule: Inside Diam.: Length:
95					dry lt gray shale sandy	95		Screen Type: Schedule: Slot: Inside Diam.: Length:
100					dry lt gray shale sandy	100		End Cap Type: PVC Length: 2"
105					dry lt gray shale	105		Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
MW-2				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	GeoProbe
End of Drilling		Long:		Drilling Method / Sampling Method: Dual Tubes - MacroCore	Total Depth:

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (Include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
0					med-lt gray shale (0-4')			Elevation
5					(4-8') lt gray limestone	5		Casing: Pad: Protective Cover Type: Size: Pad Size: Well Seal
10					(8-12') dk gray limestone	10		Type: Amount: Water: Well Pack
15					(12-16') med gray shale	15		Type: Amount: Riser
20					(16-20') med gray limestone	20		Type: Schedule: Inside Diam.: Length: Screen
25					(20-24') med gray limestone	25		Type: Schedule: Slot: Inside Diam.: Length: End Cap
30					(24-28') dark gray shale	30		Type: Length: Date Drilled:
35					(28-32') TD 140'	35		Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Rode Cleaners - KCK
Project Location:	4024 Rainbow Blvd, Kansas City
Signature:	
GSI Job. No: 2174167.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW3			FHD	Richards

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:	37.47021	Asphalt - Concrete - Grass - Gravel	
End of Drilling		Long:	-95.66240	Drilling Method / Sampling Method: Air Rotary	Total Depth: 140

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (Include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
5					dry lt gray sandy shale	5		Elevation Casing: Pad: Protective Cover Type: Size: Pad Size: Well Seal Type: Amount: Water: (5g/50lbs) Well Pack Type: Amount: Riser Type: Schedule: Inside Diam.: Length: Screen Type: Schedule: Slot: Inside Diam.: Length: End Cap Type: PVC Length: 2" Date Drilled: Date Completed:
10					dry med gray-blue shale thinly bedded	10		
15					dry sandstone : sandy shale reddish brn : brn	15		
20					dry v. sandy shale reddish brn : gray	20		
25					lt gray, red, brn ss : dry sandy shale	25		
30					dry gray ss : sandy shale v. competent/massive	30		
35					dry med gray very sandy shale layered	35		

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd,
Suite A-7
Topeka, KS 66618
785-409-1320

Project Name: Daylight Petroleum

Project Location: 17400 410 Rd, Neodesha, KS

Signature:

GSI Job. No: 22T2177.01 Date: 12/5/23

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
pmw3				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	
End of Drilling		Long:		Drilling Method / Sampling Method	Total Depth

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
40					dry dk gray to blk v. fg. shale, thinly bedded	40		Elevation Casing: Pad: Protective Cover
45					dry lt gray sandy shale	45		Type: Size: Pad Size: Well Seal
50					dk gray to black sandy shale then beds	50		Type: Amount: Water: (5g/50lbs) Well Pack
55					dk gray to black shale, coal fragments	55		Type: Amount: Riser
60					lt gray dry sandy shale massive gray to blk shale	60		Type: Schedule: Inside Diam.: Length: Screen
65						65		Type: Schedule: Slot: Inside Diam.: Length: End Cap
70					dk gray to blk v. thinly bedded shale	70		Type: PVC Length: 2" Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW3				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	
				Drilling Method / Sampling Method	Total Depth
End of Drilling		Long:			

Dpth Ft.	Sample Data: Sample No. & Type	% Rcvr.	PID	Soil Description: USCS	Geological Description & Remarks (Include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Well Construction: Schematic	Details
75					dry dk gray to black thinly bedded shale	75		Elevation Casing: Pad: Protective Cover
80					dry dk gray to black thinly bedded shale	80		Type: Size: Pad Size: Well Seal
85					dry dk gray to black thinly bedded shale	85		Type: Amount: Water: (5g/50lbs) Well Pack
90					dk gray to black thinly bedded shale	90		Type: Amount: Riser
95					dk gray to black thinly bedded shale	95		Type: Schedule: Inside Diam.: Length: Screen
100					dk gray to black thinly bedded shale	100		Type: Schedule: Slot: Inside Diam: Length: End Cap
105					dk gray to black thinly bedded shale	105		Type: PVC Length: 2" Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
DMW3				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:		Asphalt - Concrete - Grass - Gravel	GeoProbe
				Drilling Method / Sampling Method	Total Depth
End of Drilling		Long:		Dual Tubes - MacroCore	

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
100 5					dk grey to black thinly bedded shale (0-4') (4-8')	5		Elevation Casing: Pad: Protective Cover
115 10					med-dk grey sandy shale (8-12')	10		Type: Size: Pad Size: Well Seal
120 15					lt grey sandstone / sandy shale (12-16')	15		Type: Amount: Water: Well Pack
125 20					med/dk grey v. sandy shale w/ some thin bedded pieces (16-20')	20		Type: Amount: Riser
130 25					med-dk grey limestone (20-24') (24-28')	25		Type: Schedule: Inside Diam.: Length: Screen
135 30					dk grey to black shale thin bedded (28-32')	30		Type: Schedule: Slot: Inside Diam.: Length: End Cap
140 35					dk grey to black thinly bedded shale (32-36')	35		Type: Length: Date Drilled: Date Completed:

GSI Engineering
Geotechnical Engineering Sciences Company
2900 NW Button Rd,
Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
PMW-3			FHD	Richards

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:	37.42969	Asphalt - Concrete - Grass - Gravel	SPEEDSTAR 30K
End of Drilling		Long:	-95.606167	Drilling Method / Sampling Method: Air Rotary	Total Depth: 140

Dpth Ft.	Sample Data: Sample No. & Type	% Rcvr.	PID	Soil Description: USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Well Construction: Schematic	Details
5					dry clay & lt reddish brn shale	5		Elevation
10					dry sandy clay & thin shale lt reddish brn	10		Casing: Pad: Protective Cover Type: Size: Pad Size: Well Seal
15					dry sandy shale lt red/brn to gray, thinly bedded	15		Type: Amount: Water: (5g/50lbs) Well Pack
20					dry lt brn to yellow & red very sandy shale	20		Type: Amount: Riser
25					dry lt gray to pale brn v. sandy shale, massive	25		Type: Schedule: Inside Diam.: Length: Screen
30					dry lt gray to pale brn/yellow v. sandy shale	30		Type: Schedule: Slot: Inside Diam.: Length: End Cap
35					dk gry to black thinly bedded shale sandy	35		Type: PVC Length: 2" Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd,
Suite A-7
Topeka, KS 66618
785-409-1320

Project Name: Daylight Petroleum

Project Location: 17400 410 Rd, Neodesha, KS

Signature:

GSI Job. No: 22T2177.01 **Date:** 12/5/23

BORING LOG / MONITORING WELL SCHEMATIC

BH/MW No.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist
pmw4				

Water Level Depths		GPS Coordinates		Type of Surface	Drill Rig
During Drilling		Lat:	37.42969	Asphalt - Concrete - Grass - Gravel	
End of Drilling		Long:	-95.66167	Drilling Method / Sampling Method	Total Depth

Sample Data				Soil Description			Well Construction	
Dpth Ft.	Sample No. & Type	% Rcvr.	PID	USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
40					lt gray to black thinly bedded shale/coal fragments	40		Elevation Casing: Pad: Protective Cover
45					lt gray sandy shale, massive / thick layers	45		Type: Size: Pad Size: Well Seal
50					med. gray sandy shale massive/thicker bedding	50		Type: Amount: Water: (5g/50lbs) Well Pack
55					dk gray to black thinly bedded shale, minor small coal fragments	55		Type: Amount: Riser
60					med gray to black shale	60		Type: Schedule: Inside Diam.: Length: Screen
65					dk gray to black thinly bedded shale	65		Type: Schedule: Slot: Inside Diam.: Length: End Cap
70					dk gray to black v. thin bedded shale	70		Type: PVC Length: 2" Date Drilled: Date Completed:

GSI Engineering
A Universal Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

BORING LOG / MONITORING WELL SCHEMATIC

o.	Location of Drill Hole	Well ID Tag No.	Driller	Geologist

Level Depths	GPS Coordinates		Type of Surface	Drill Rig
		Lat:	Asphalt - Concrete - Grass - Gravel	
			Drilling Method / Sampling Method	Total Depth
		Long:		

Sample Data			Soil Description			Well Construction	
ple & e	% Rcvr.	PID	USCS	Geological Description & Remarks (include USCS classification) Moisture - Plasticity - Consistency - Color - Odor - Particulates	Dpth Ft.	Schematic	Details
				V. dk grey to blk v. thinly bedded shale	75		Elevation Casing: Pad: Protective Cover
				med grey to blk v. thinly bedded shale	80		Type: Size: Pad Size: Well Seal
				dk grey to blk v. thinly bedded shale	85		Type: Amount: Water: (5g/50lbs) Well Pack
				dk grey to blk thinly bedded shale	90		Type: Amount: Riser
				dk grey to blk thinly bedded shale	95		Type: Schedule: Inside Diam.: Length: Screen
				dk grey to blk thinly bedded shale	100		Type: Schedule: Slot: Inside Diam.: Length: End Cap
				dk grey to blk thinly bedded shale	105		Type: PVC Length: 2" Date Drilled: Date Completed:

GSI Engineering
Engineering Sciences Company
2900 NW Button Rd, Suite A-7
Topeka, KS 66618
785-409-1320

Project Name:	Daylight Petroleum
Project Location:	17400 410 Rd, Neodesha, KS
Signature:	
GSI Job. No: 22T2177.01	Date:

110 med to dk gray limestone

115 ~~med~~ light to dk gray limestone

120 light gray limestone

125 med to dk gray/black shale thinly bedded

130 med. gray to black shale thinly bedded

135 med gray ls

140 dk gray to black limestone

WATER WELL RECORD (WWC-5)

DRAFT

Constructed

KOLAR DOC ID 1742182 WELL ID PMW-1

☑ Original Record ☐ Correction ☐ Change in Well Use

LOCATION OF WATER WELL

Latitude	37.42971	Longitude	-95.66291	Section	16	Township	30	Range	16 ✓E ☐W	Fraction	SE ¼ SE ¼ SW ¼
Datum	WGS84	Elevation	829	County	Wilson						

WATER WELL OWNER

Name	
Business	Daylight Petroleum
Address	1221 McKinney Street Houston TX 77010
Well location ☐ at owner's address	17400 410 Rd, Neodesha, KS

CONSTRUCTION

Borehole interval: from 0 to 140 ft. / from ____ to ____ ft.

Borehole diameter: 6 in. / ____ in.

Casing height above land surface: 0 in.

If casing height is less than 12 in. has a variance been approved?* ✓ Yes ☐ No

*variance not required for monitoring or environmental remediation wells

Casing type: ThermalPlastic

Blank casing interval: 0 ft. to 50 ft.

Blank casing diameter: 2 in.

Casing joints: Threaded

Weight: ____ lbs/ft.

Wall thickness or gauge no.: SCH80

Blank casing interval: ____ ft. to ____ ft.

Blank casing diameter: ____ in.

Casing joints: ____

Weight: ____ lbs/ft.

Wall thickness or gauge no.: ____

Grout interval: 0 ft. to 48 ft.

Grout material: Bentonite

Grout interval: ____ ft. to ____ ft.

Grout material: ____

Screen / perforation material: PVC

Screen / perforation openings: Mill slot

Screen / perforation intervals:

From 50 ft. to 140 ft.

Slot size ____ unit ____

From ____ ft. to ____ ft.

Slot size ____ unit ____

Gravel pack intervals:

Gravel pack not used: ☐ Gravel size ____ in

From 48 ft. to 140 ft.

Gravel pack not used: ☐ Gravel size ____ in

From ____ ft. to ____ ft.

WELL WATER USE

Environmental Remediation / Monitoring Mc

COMPLETION

Depth of completed well: 140 ft.

Depth(s) groundwater encountered:

(1) ____ ft.; (2) ____ ft.;

(3) ____ ft.; (4) ☐ dry well

Static water level in well: 52 ft.

✓ measured below land surface on (mm/dd/yy): 12/04/2023

☐ measured above land surface on (mm/dd/yy): ____

Estimated yield: 0.5 gpm

Water level was: ____ ft. after ____ hours pumping ____ gpm

Pump installed? ☐ Yes ☑ No

Water well disinfected? ☐ Yes ☐ No

Date disinfected (mm/dd/yy): ____

Aquifer, if known:

NEAREST SOURCE OF POTENTIAL CONTAMINATION

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

☐ No potential source of contamination within 100 feet.

PERMIT & ID NUMBERS (AS REQUIRED)

DWR Application No.: ____

KDHE / EPA Project Code: KCC Complaint Res

Site Name: Daylight Petroleum

KDHE UIC Class V Form Completed: ☐ Yes ☐ No

County Permit: ☐ Yes ☐ No Permit ID: ____

Lease Name & Well #: ____

# of boreholes: ____ # of dewatering wells: ____

LITHOLOGIC LOG

FROM	TO	LITHOLOGY INTERVALS
Attache	Attache	Attached

COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

This water well was constructed ✓ reconstructed ☐ pursuant to the stated water well contractor's license and was completed on 12/04/2023. I certify that this record is true to the best of my knowledge and belief. This water well record was completed on ____ under the business name of Flint Hills Drilling #914, Kansas Water Well Contractor's License No. 914 under the authority of the designated person as defined in K.A.R. 28-30-2(j) and signed and certified by the electronic signature of the designated person at its submittal: Wess Presley.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka KS 66612-1367
(785) 296-3565 | K.S.A. 82a-1212 | v2022c

DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742182
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
0	5	clay,sandy,reddish,brown,dry, stiff
5	10	clay,sandy,yellowish,brown,dry,soft
10	15	sand,fine,reddish,brown,dry,with a little shale at bottom
15	20	sandstone,unweathered,light, yellowish,brown
20	25	sandstone,unweathered,reddish,brown
25	30	sandstone,unweathered,light, other,yellow
30	35	sandstone,unweathered,light, other,yellow
35	45	shale,unweathered,gray
45	50	shale,unweathered,light,gray
50	55	shale,unweathered,dark,gray, coal seam
55	60	shale,unweathered,light,gray
60	65	shale,unweathered,gray,light to dark
65	70	shale,unweathered,light,gray
70	75	shale,unweathered,dark,gray,to black thin bedded shale
75	80	shale,unweathered,dark,gray,thinly bedded to black
80	85	shale,unweathered,light,gray,to black thinly bedded

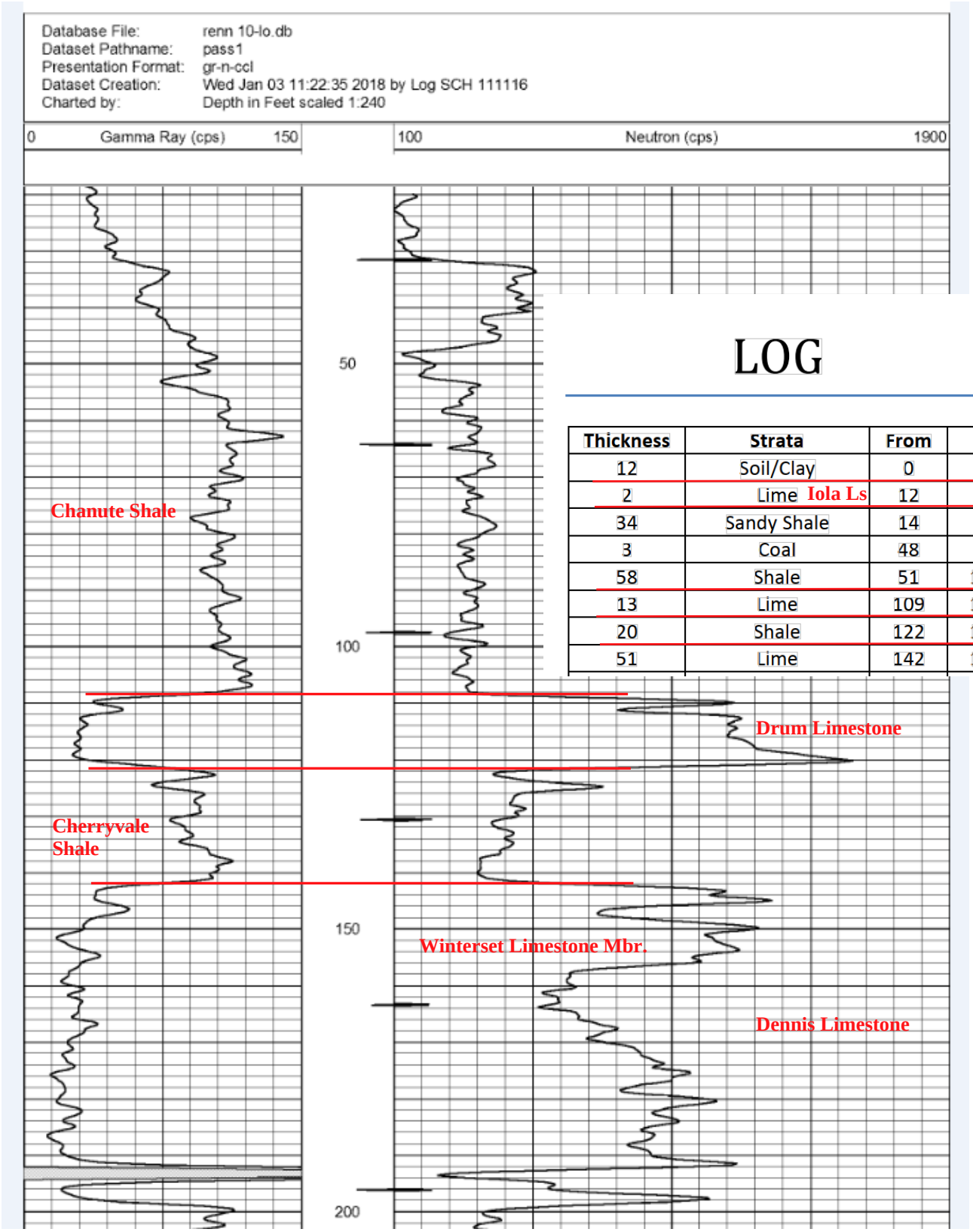
DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742182
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
85	95	shale,unweathered,gray,to black
95	100	shale,unweathered,dark,gray,to black
100	105	shale,unweathered,light,gray
105	115	limestone,unweathered,light,gray
115	120	shale,unweathered,light,gray
120	130	shale,unweathered,light,gray,to black
130	135	shale,unweathered,dark,gray,to black
135	140	limestone,unweathered,light,gray

-Daylight Petroleum, Renn #LO-10 Oil Well, 15-205-28407, Sec. 21-T30S-R16E, Approximately 950 feet SE of the Johnson BOW. Gamma Ray Neutron Log and Drillers' Log provided through Table I. (source: KGS Data Records)



LOG

Thickness	Strata	From	To
12	Soil/Clay	0	12
2	Lime Iola Ls	12	14
34	Sandy Shale	14	48
3	Coal	48	51
58	Shale	51	109
13	Lime	109	122
20	Shale	122	142
51	Lime	142	193


Daylight Petroleum
Johnson Lease
Breakout Well Under Commercial Building
Sec. 16-T30S-R16E
Wilson Co.
Legend
Proposed Monitoring Wells
Johnson #103
Olnhausen Farms #6
Johnson # 6
PMW-03
Johnson #101
PMW-04
BOW-Anomoly
Verdigris River
PMW-01
Johnson #106
PMW-02
Johnson #7
410 Rd
410 Rd
Renn #LO-10 (Strat Log Reference Well)
N
700 ft
Google Earth

WATER WELL RECORD (WWC-5)

DRAFT

Constructed

KOLAR DOC ID 1742182 WELL ID PMW-1

☑ Original Record ☐ Correction ☐ Change in Well Use

LOCATION OF WATER WELL

Latitude	37.42971	Longitude	-95.66291	Section	16	Township	30	Range	16 ☑E ☐W	Fraction	SE ¼ SE ¼ SW ¼
Datum	WGS84	Elevation	829	County	Wilson						

WATER WELL OWNER

Name	
Business	Daylight Petroleum
Address	1221 McKinney Street Houston TX 77010
Well location ☐ at owner's address	17400 410 Rd, Neodesha, KS

CONSTRUCTION

Borehole interval: from 0 to 140 ft. / from ____ to ____ ft.

Borehole diameter: 6 in. / ____ in.

Casing height above land surface: 0 in.

If casing height is less than 12 in. has a variance been approved?* ☑ Yes ☐ No

*variance not required for monitoring or environmental remediation wells

Casing type: ThermalPlastic

Blank casing interval: 0 ft. to 50 ft.

Blank casing diameter: 2 in.

Casing joints: Threaded

Weight: ____ lbs/ft.

Wall thickness or gauge no.: SCH80

Blank casing interval: ____ ft. to ____ ft.

Blank casing diameter: ____ in.

Casing joints: ____

Weight: ____ lbs/ft.

Wall thickness or gauge no.: ____

Grout interval: 0 ft. to 48 ft.

Grout material: Bentonite

Grout interval: ____ ft. to ____ ft.

Grout material: ____

Screen / perforation material: PVC

Screen / perforation openings: Mill slot

Screen / perforation intervals:

From 50 ft. to 140 ft.

Slot size ____ unit ____

From ____ ft. to ____ ft.

Slot size ____ unit ____

Gravel pack intervals:

Gravel pack not used: ☐ Gravel size ____ in

From 48 ft. to 140 ft.

Gravel pack not used: ☐ Gravel size ____ in

From ____ ft. to ____ ft.

WELL WATER USE

Environmental Remediation / Monitoring Mc

COMPLETION

Depth of completed well: 140 ft.

Depth(s) groundwater encountered:

(1) ____ ft.; (2) ____ ft.;

(3) ____ ft.; (4) ☐ dry well

Static water level in well: 52 ft.

☑ measured below land surface on (mm/dd/yy): 12/04/2023

☐ measured above land surface on (mm/dd/yy): ____

Estimated yield: 0.5 gpm

Water level was: ____ ft. after ____ hours pumping ____ gpm

Pump installed? ☐ Yes ☑ No

Water well disinfected? ☐ Yes ☐ No

Date disinfected (mm/dd/yy): ____

Aquifer, if known:

NEAREST SOURCE OF POTENTIAL CONTAMINATION

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

☐ No potential source of contamination within 100 feet.

PERMIT & ID NUMBERS (AS REQUIRED)

DWR Application No.: ____

KDHE / EPA Project Code: KCC Complaint Res

Site Name: Daylight Petroleum

KDHE UIC Class V Form Completed: ☐ Yes ☐ No

County Permit: ☐ Yes ☐ No Permit ID: ____

Lease Name & Well #: ____

# of boreholes: ____ # of dewatering wells: ____

LITHOLOGIC LOG

FROM	TO	LITHOLOGY INTERVALS
Attache	Attache	Attached

COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

This water well was constructed ☑ reconstructed ☐ pursuant to the stated water well contractor's license and was completed on 12/04/2023. I certify that this record is true to the best of my knowledge and belief. This water well record was completed on ____ under the business name of Flint Hills Drilling #914, Kansas Water Well Contractor's License No. 914 under the authority of the designated person as defined in K.A.R. 28-30-2(j) and signed and certified by the electronic signature of the designated person at its submittal: Wess Presley.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742187
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
0	5	clay,light,yellowish,brown,slightly moist
5	10	shale,unweathered,clayey,reddish,brown
10	15	shale,unweathered,sandy,light,yellowish,brown
15	20	shale,unweathered,sandy,light,grayish,brown
20	25	shale,unweathered,sandy,yellowish,brown
25	32	shale,unweathered,sandy,gray,more bedded
32	40	shale,unweathered,dark,gray,thinly bedded
40	45	shale,unweathered,sandy,light,gray,thinly bedded
45	50	shale,unweathered,dark,gray,to black, thinly bedded fine grained
50	55	shale,unweathered,dark,black,to black thinly bedded shale
55	60	shale,unweathered,gray,thinly bedded shale
60	65	shale,unweathered,dark,gray,to black thinly bedded shale
65	70	shale,unweathered,gray,thinly bedded shale
70	80	shale,unweathered,gray
80	90	shale,unweathered,light,gray

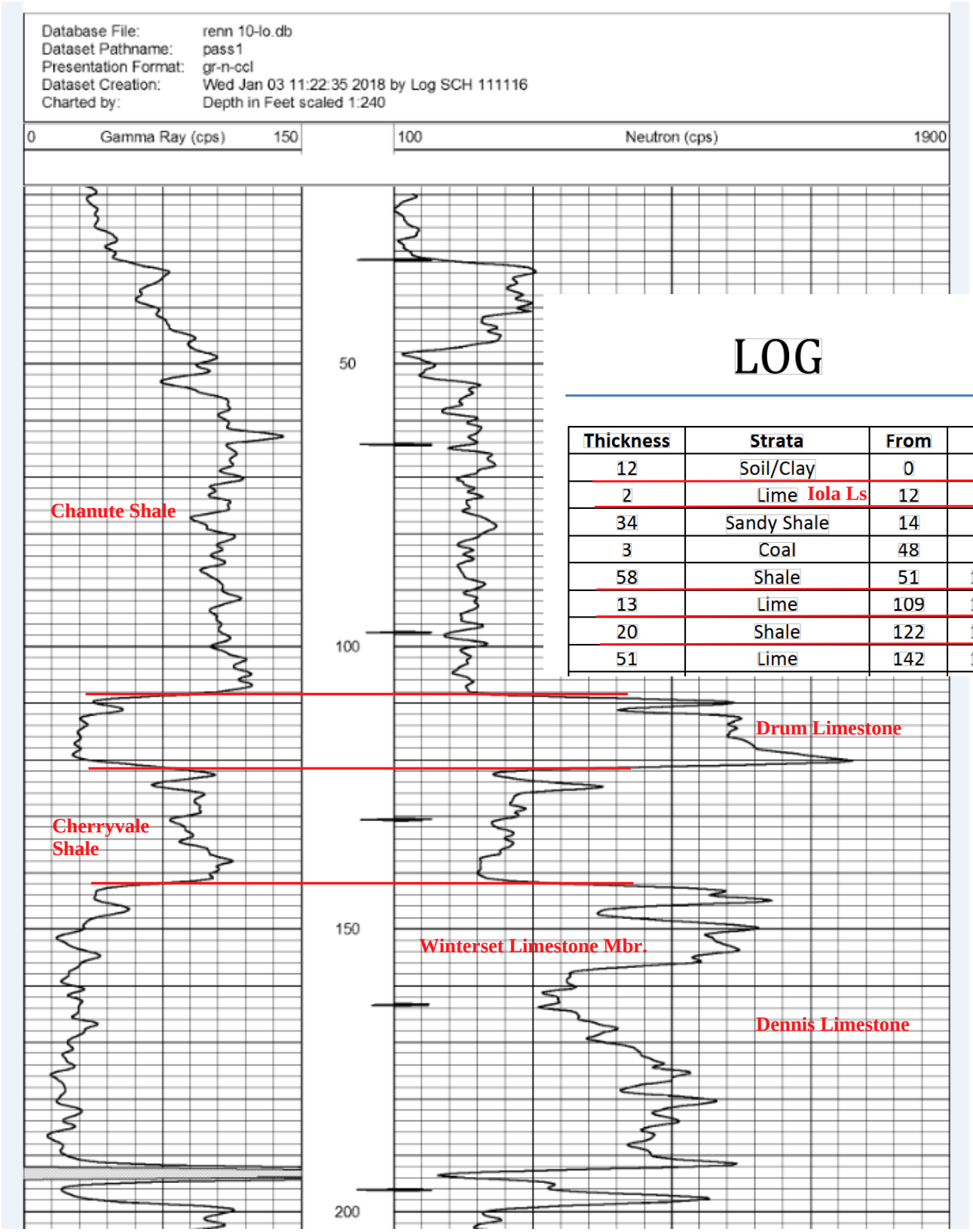
DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742187
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
90	100	shale,unweathered,sandy,light,gray
100	105	shale,unweathered,light,gray
105	110	shale,unweathered,gray
110	115	limestone,unweathered,light,gray
115	120	limestone,unweathered,dark,gray
120	125	shale,unweathered,gray
125	135	limestone,unweathered,gray
135	140	limestone,unweathered,dark,gray

-Daylight Petroleum, Renn #LO-10 Oil Well, 15-205-28407, Sec. 21-T30S-R16E, Approximately 950 feet SE of the Johnson BOW. Gamma Ray Neutron Log and Drillers' Log provided through Table I. (source: KGS Data Records)



LOG

Thickness	Strata	From	To
12	Soil/Clay	0	12
2	Lime Iola Ls	12	14
34	Sandy Shale	14	48
3	Coal	48	51
58	Shale	51	109
13	Lime	109	122
20	Shale	122	142
51	Lime	142	193


Daylight Petroleum
Johnson Lease
Breakout Well Under Commercial Building
Sec. 16-T30S-R16E
Wilson Co.
Legend
Proposed Monitoring Wells
Johnson #103
Olnhausen Farms #6
Johnson # 6
PMW-03
Johnson #101
PMW-04
BOW-Anomoly
Verdigris River
PMW-01
Johnson #106
PMW-02
Johnson #7
410 Rd
410 Rd
Renn #LO-10 (Strat Log Reference Well)
N
700 ft
Google Earth

WATER WELL RECORD (WWC-5)

DRAFT

Constructed

KOLAR DOC ID 1742182 WELL ID PMW-1

☑ Original Record ☐ Correction ☐ Change in Well Use

LOCATION OF WATER WELL

Latitude	37.42971	Longitude	-95.66291	Section	16	Township	30	Range	16 ☑E ☐W	Fraction	SE ¼ SE ¼ SW ¼
Datum	WGS84	Elevation	829	County	Wilson						

WATER WELL OWNER

Name	
Business	Daylight Petroleum
Address	1221 McKinney Street Houston TX 77010
Well location ☐ at owner's address	17400 410 Rd, Neodesha, KS

CONSTRUCTION

Borehole interval: from 0 to 140 ft. / from ____ to ____ ft.

Borehole diameter: 6 in. / ____ in.

Casing height above land surface: 0 in.

If casing height is less than 12 in. has a variance been approved?* ☑ Yes ☐ No

*variance not required for monitoring or environmental remediation wells

Casing type: ThermalPlastic

Blank casing interval: 0 ft. to 50 ft.

Blank casing diameter: 2 in.

Casing joints: Threaded

Weight: ____ lbs/ft.

Wall thickness or gauge no.: SCH80

Blank casing interval: ____ ft. to ____ ft.

Blank casing diameter: ____ in.

Casing joints: ____

Weight: ____ lbs/ft.

Wall thickness or gauge no.: ____

Grout interval: 0 ft. to 48 ft.

Grout material: Bentonite

Grout interval: ____ ft. to ____ ft.

Grout material: ____

Screen / perforation material: PVC

Screen / perforation openings: Mill slot

Screen / perforation intervals:

From 50 ft. to 140 ft.

Slot size ____ unit ____

From ____ ft. to ____ ft.

Slot size ____ unit ____

Gravel pack intervals:

Gravel pack not used: ☐ Gravel size ____ in

From 48 ft. to 140 ft.

Gravel pack not used: ☐ Gravel size ____ in

From ____ ft. to ____ ft.

WELL WATER USE

Environmental Remediation / Monitoring Mc

COMPLETION

Depth of completed well: 140 ft.

Depth(s) groundwater encountered:

(1) ____ ft.; (2) ____ ft.;

(3) ____ ft.; (4) ☐ dry well

Static water level in well: 52 ft.

☑ measured below land surface on (mm/dd/yy): 12/04/2023

☐ measured above land surface on (mm/dd/yy): ____

Estimated yield: 0.5 gpm

Water level was: ____ ft. after ____ hours pumping ____ gpm

Pump installed? ☐ Yes ☑ No

Water well disinfected? ☐ Yes ☐ No

Date disinfected (mm/dd/yy): ____

Aquifer, if known:

NEAREST SOURCE OF POTENTIAL CONTAMINATION

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

☐ No potential source of contamination within 100 feet.

PERMIT & ID NUMBERS (AS REQUIRED)

DWR Application No.: ____

KDHE / EPA Project Code: KCC Complaint Res

Site Name: Daylight Petroleum

KDHE UIC Class V Form Completed: ☐ Yes ☐ No

County Permit: ☐ Yes ☐ No Permit ID: ____

Lease Name & Well #: ____

# of boreholes: ____ # of dewatering wells: ____

LITHOLOGIC LOG

FROM	TO	LITHOLOGY INTERVALS
Attache	Attache	Attached

COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

This water well was constructed ☑ reconstructed ☐ pursuant to the stated water well contractor's license and was completed on 12/04/2023. I certify that this record is true to the best of my knowledge and belief. This water well record was completed on ____ under the business name of Flint Hills Drilling #914, Kansas Water Well Contractor's License No. 914 under the authority of the designated person as defined in K.A.R. 28-30-2(j) and signed and certified by the electronic signature of the designated person at its submittal: Wess Presley.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742198
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
0	.25	gravel,fine to coarse,shale fragments
0.25	4	shale,unweathered,sandy,light,gray
4	10	shale,unweathered,gray,thinly bedded,with black
10	15	sandstone,unweathered,reddish,brown,and sandy shale
15	20	shale,unweathered,sandy,reddish,brown,with gray
20	25	shale,unweathered,sandy,gray,with red and brown
25	30	sandstone,unweathered,light,gray,very competent/massive
30	35	shale,unweathered,sandy,gray,layered
35	40	shale,unweathered,dark,gray,thinly bedded,to black
40	45	shale,unweathered,sandy,light,gray
45	50	shale,unweathered,sandy,dark,gray,thinly bedded,to black
50	55	shale,unweathered,dark,gray,with coal fragments
55	60	shale,unweathered,sandy,light,gray,massive
60	65	shale,unweathered,gray,to black
65	70	shale,unweathered,dark,gray,very thinly bedded,to black

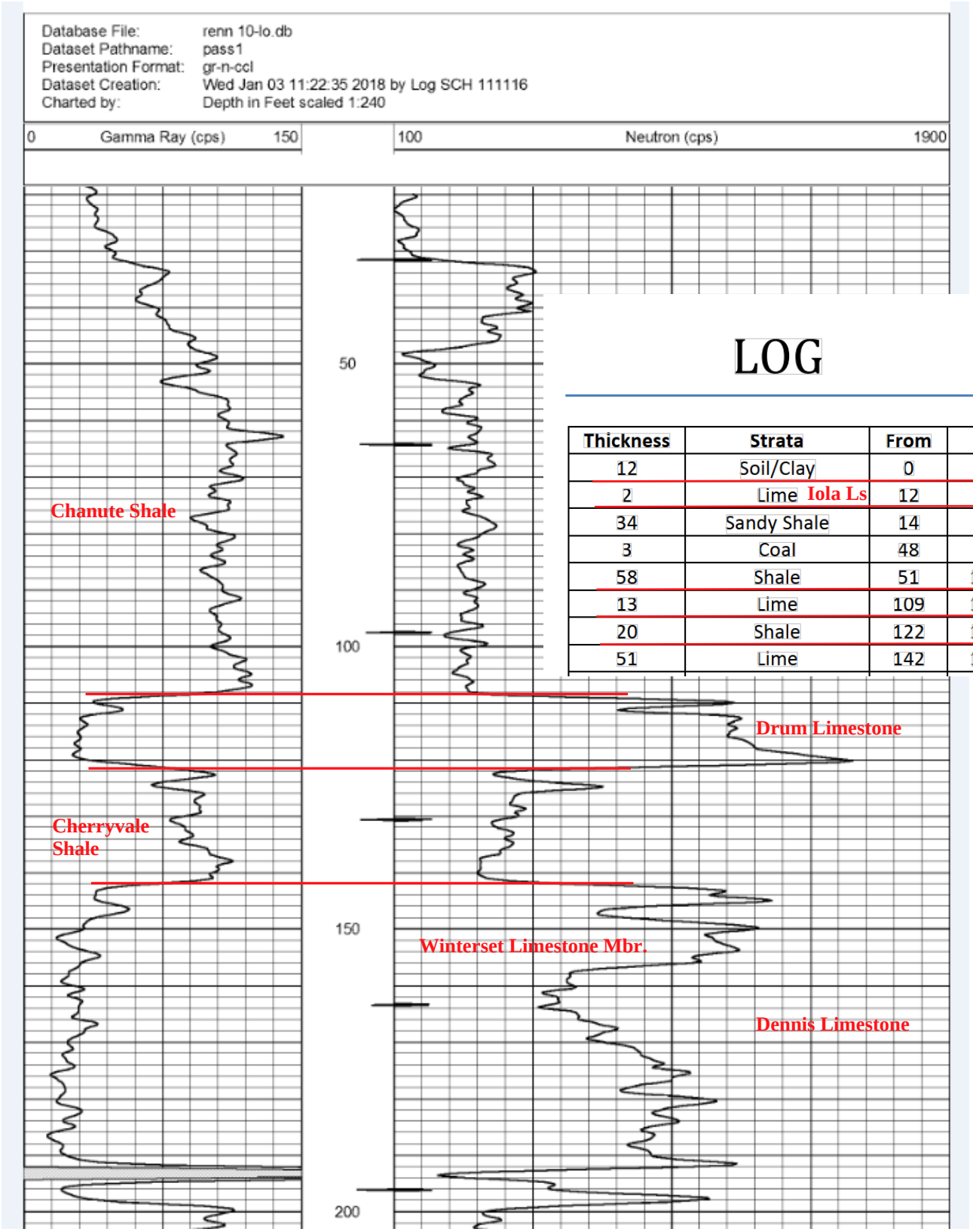
DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742198
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
70	110	shale,unweathered,dark,gray,thinly bedded,to black
110	115	shale,unweathered,sandy,dark,gray
115	120	sandstone,unweathered,light,gray
120	125	shale,unweathered,sandy,dark,gray,with some thin bedded pieces
125	130	limestone,unweathered,dark,gray
130	140	shale,unweathered,dark,gray,thinly bedded,to black

-Daylight Petroleum, Renn #LO-10 Oil Well, 15-205-28407, Sec. 21-T30S-R16E, Approximately 950 feet SE of the Johnson BOW. Gamma Ray Neutron Log and Drillers' Log provided through Table I. (source: KGS Data Records)



LOG

Thickness	Strata	From	To
12	Soil/Clay	0	12
2	Lime Iola Ls	12	14
34	Sandy Shale	14	48
3	Coal	48	51
58	Shale	51	109
13	Lime	109	122
20	Shale	122	142
51	Lime	142	193


Daylight Petroleum
Johnson Lease
Breakout Well Under Commercial Building
Sec. 16-T30S-R16E
Wilson Co.
Legend
Proposed Monitoring Wells
Johnson #103
Olnhausen Farms #6
Johnson # 6
PMW-03
Johnson #101
PMW-04
BOW-Anomoly
Verdigris River
PMW-01
Johnson #106
PMW-02
Johnson #7
410 Rd
410 Rd
Renn #LO-10 (Strat Log Reference Well)
N
700 ft
Google Earth

WATER WELL RECORD (WWC-5)

DRAFT

Constructed

KOLAR DOC ID 1742182 WELL ID PMW-1

☑ Original Record ☐ Correction ☐ Change in Well Use

LOCATION OF WATER WELL

Latitude	37.42971	Longitude	-95.66291	Section	16	Township	30	Range	16 ☑E ☐W	Fraction	SE ¼ SE ¼ SW ¼
Datum	WGS84	Elevation	829	County	Wilson						

WATER WELL OWNER

Name	
Business	Daylight Petroleum
Address	1221 McKinney Street Houston TX 77010
Well location ☐ at owner's address	17400 410 Rd, Neodesha, KS

CONSTRUCTION

Borehole interval: from 0 to 140 ft. / from ____ to ____ ft.

Borehole diameter: 6 in. / ____ in.

Casing height above land surface: 0 in.

If casing height is less than 12 in. has a variance been approved?* ☑ Yes ☐ No

*variance not required for monitoring or environmental remediation wells

Casing type: ThermalPlastic

Blank casing interval: 0 ft. to 50 ft.

Blank casing diameter: 2 in.

Casing joints: Threaded

Weight: ____ lbs/ft.

Wall thickness or gauge no.: SCH80

Blank casing interval: ____ ft. to ____ ft.

Blank casing diameter: ____ in.

Casing joints: ____

Weight: ____ lbs/ft.

Wall thickness or gauge no.: ____

Grout interval: 0 ft. to 48 ft.

Grout material: Bentonite

Grout interval: ____ ft. to ____ ft.

Grout material: ____

Screen / perforation material: PVC

Screen / perforation openings: Mill slot

Screen / perforation intervals:

From 50 ft. to 140 ft.

Slot size ____ unit ____

From ____ ft. to ____ ft.

Slot size ____ unit ____

Gravel pack intervals:

Gravel pack not used: ☐ Gravel size ____ in

From 48 ft. to 140 ft.

Gravel pack not used: ☐ Gravel size ____ in

From ____ ft. to ____ ft.

WELL WATER USE

Environmental Remediation / Monitoring Mc

COMPLETION

Depth of completed well: 140 ft.

Depth(s) groundwater encountered:

(1) ____ ft.; (2) ____ ft.;

(3) ____ ft.; (4) ☐ dry well

Static water level in well: 52 ft.

☑ measured below land surface on (mm/dd/yy): 12/04/2023

☐ measured above land surface on (mm/dd/yy): ____

Estimated yield: 0.5 gpm

Water level was: ____ ft. after ____ hours pumping ____ gpm

Pump installed? ☐ Yes ☑ No

Water well disinfected? ☐ Yes ☐ No

Date disinfected (mm/dd/yy): ____

Aquifer, if known:

NEAREST SOURCE OF POTENTIAL CONTAMINATION

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

Source: ____

Distance from well: ____ Direction from well: ____

Source description: ____

☐ No potential source of contamination within 100 feet.

PERMIT & ID NUMBERS (AS REQUIRED)

DWR Application No.: ____

KDHE / EPA Project Code: KCC Complaint Res

Site Name: Daylight Petroleum

KDHE UIC Class V Form Completed: ☐ Yes ☐ No

County Permit: ☐ Yes ☐ No Permit ID: ____

Lease Name & Well #: ____

# of boreholes: ____ # of dewatering wells: ____

LITHOLOGIC LOG

FROM	TO	LITHOLOGY INTERVALS
Attache	Attache	Attached

COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

This water well was constructed ☑ reconstructed ☐ pursuant to the stated water well contractor's license and was completed on 12/04/2023. I certify that this record is true to the best of my knowledge and belief. This water well record was completed on ____ under the business name of Flint Hills Drilling #914, Kansas Water Well Contractor's License No. 914 under the authority of the designated person as defined in K.A.R. 28-30-2(j) and signed and certified by the electronic signature of the designated person at its submittal: Wess Presley.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742203
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
0	5	clay,dry,with light reddish brown shale
5	10	clay,sandy,light,reddish,brown,dry,with thin shale
10	15	shale,unweathered,sandy,light,reddish,brown,thinly bedded,with gray
15	20	shale,unweathered,sandy,light,brown,with yellow and red
20	25	shale,unweathered,sandy,light,gray,with pale brown, massive
25	30	shale,unweathered,sandy,light,gray,with pale brown and yellow
30	35	shale,unweathered,sandy,dark,gray,thinly bedded,with black
35	40	shale,unweathered,light,gray,thinly bedded,to black, with coal fragments
40	45	shale,unweathered,sandy,light,gray,with massive, thick layers
45	50	shale,unweathered,sandy,gray,massive/thicker bedding
50	55	shale,unweathered,dark,gray,to black, with minor small coal fragments
55	60	shale,unweathered,gray

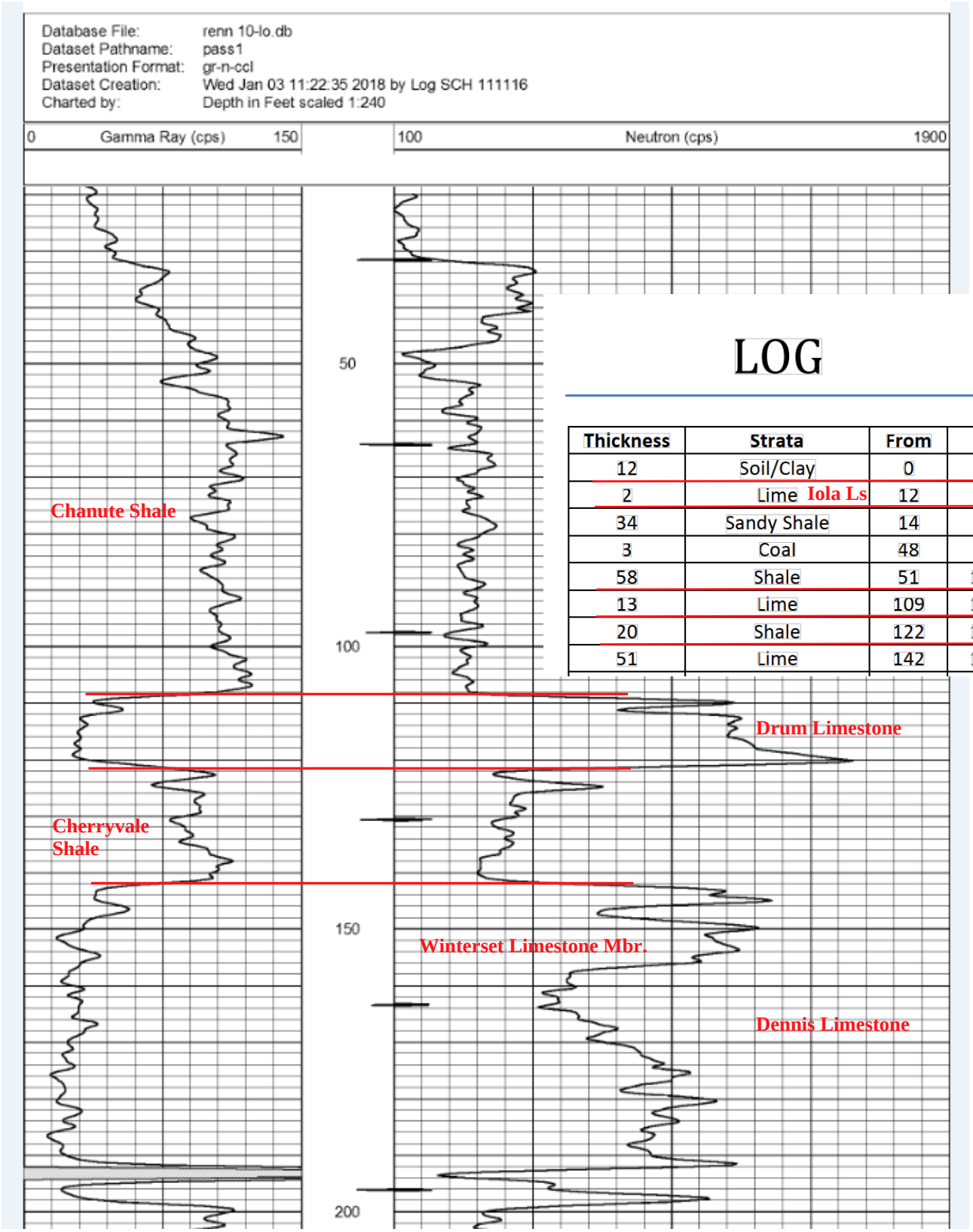
DRAFT

Form	WWC5.2 - Water Well Record
Doc ID	1742203
Well Owner	Daylight Petroleum
Contractor	Flint Hills Drilling #914

Lithology

From	To	Lithology Intervals
60	65	shale,unweathered,dark,gray,thinly bedded
65	70	shale,unweathered,dark,gray,very thinly bedded
70	75	shale,unweathered,very dark,gray,very thinly bedded
75	80	shale,unweathered,gray,very thinly bedded
80	85	shale,unweathered,dark,gray,very thinly bedded
85	90	shale,unweathered,dark,gray,thinly bedded
90	105	shale,unweathered,dark,gray,thinly bedded
105	110	limestone,unweathered,gray
110	115	limestone,unweathered,light,gray
115	120	limestone,unweathered,light,gray
120	125	shale,unweathered,dark,gray,thinly bedded
125	130	shale,unweathered,gray,thinly bedded
130	135	limestone,unweathered,gray
135	140	limestone,unweathered,very dark,gray

-Daylight Petroleum, Renn #LO-10 Oil Well, 15-205-28407, Sec. 21-T30S-R16E, Approximately 950 feet SE of the Johnson BOW. Gamma Ray Neutron Log and Drillers' Log provided through Table I. (source: KGS Data Records)



LOG

Thickness	Strata	From	To
12	Soil/Clay	0	12
2	Lime Iola Ls	12	14
34	Sandy Shale	14	48
3	Coal	48	51
58	Shale	51	109
13	Lime	109	122
20	Shale	122	142
51	Lime	142	193


Daylight Petroleum
Johnson Lease
Breakout Well Under Commercial Building
Sec. 16-T30S-R16E
Wilson Co.
Legend
Proposed Monitoring Wells
Johnson #103
Olnhausen Farms #6
Johnson # 6
PMW-03
Johnson #101
PMW-04
BOW-Anomoly
Verdigris River
PMW-01
Johnson #106
PMW-02
Johnson #7
410 Rd
410 Rd
Renn #LO-10 (Strat Log Reference Well)
N
700 ft
Google Earth

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-3 85' **Lab ID: 60443738002** Collected: 12/07/23 10:10 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**60.0**	mg/L	20.0	20		12/19/23 16:11	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-3 139' **Lab ID: 60443738003** Collected: 12/07/23 10:00 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**262**	mg/L	20.0	20		12/19/23 16:23	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-1 85' **Lab ID: 60443738004** Collected: 12/07/23 11:07 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**34.9**	mg/L	5.0	5		12/21/23 00:42	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Sample: PMW-1 139' **Lab ID: 60443738005** Collected: 12/07/23 10:57 Received: 12/08/23 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**848**	mg/L	100	100		12/21/23 00:54	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

QC Batch: 877650
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60443738001, 60443738002, 60443738003, 60443738004, 60443738005

METHOD BLANK: 3476253 Matrix: Water
Associated Lab Samples: 60443738001, 60443738002, 60443738003, 60443738004, 60443738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/19/23 15:25	

METHOD BLANK: 3477927 Matrix: Water
Associated Lab Samples: 60443738001, 60443738002, 60443738003, 60443738004, 60443738005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/20/23 23:28	

LABORATORY CONTROL SAMPLE: 3476254

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 3477928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3476255 3476256

Parameter	Units	60443252002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.1	25	25	47.7	47.4	102	101	80-120	1	15	

SAMPLE DUPLICATE: 3476257

Parameter	Units	60443252002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	22.1	21.9	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60443738

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60443738001	**PMW-2 139'**	EPA 300.0	877650		
60443738002	**PMW-3 85'**	EPA 300.0	877650		
60443738003	**PMW-3 139'**	EPA 300.0	877650		
60443738004	**PMW-1 85'**	EPA 300.0	877650		
60443738005	**PMW-1 139'**	EPA 300.0	877650		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 60443738

60443738

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: UES_GSI Topeka

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☑ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.7 **Corr. Factor** -0.3 **Corrected** 1.4

Date and initials of person examining contents: AF 12/12

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:**	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd.
Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	UES_GSI Topeka	Contact/Report To:	Alexandra Richards
Street Address:	2900 NW Button Rd, Ste. A-7, Topeka, KS 66618	Phone #:	785-409-1320
		E-Mail:	arichards@teamues.com
		Cc E-Mail:	kwheeler@teamues.com
Customer Project #:	23T2177.01	Invoice To:	Accounts Payable
Project Name:	Daylight Petroleum	Invoice E-Mail:	ap@gsinetwork.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	UES Rates
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET

County / State origin of sample(s):

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other_____

Regulatory Program (DW, RCRA, etc.) as applicable:

Rush (Pre-approval required):
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other_____
Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

Specify Container Size **
Identify Container Preservative Type***
Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr:
AcctNum / Client ID:
Table #:
Profile / Template: 15928, 6
Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res. Cl2	Number & Type of Containers Plastic	Number & Type of Containers Glass	300.0 Chloride	Sample Comment
PMW-2 139'	W	G	12/7/2023	9:05				1		✓	60443736
PMW-3 85'	W	G	12/7/2023	10:10				1		✓	
PMW-3 139'	W	G	12/7/2023	10:00				1		✓	
PMW-1 85'	W	G	12/7/2023	11:07				1		✓	
PMW-1 139'	W	G	12/7/2023	10:57				1		✓	

Customer Remarks / Special Conditions / Possible Hazards:

Collected By:
Printed Name: Alexandria Richards
Signature:

Additional Instructions from Pace®:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)
				1.4

Relinquished by/Company: (Signature) GSI/UES	Date/Time: 12/8/23 13:00	Received by/Company: (Signature)	Date/Time: ~~12/12~~ 12/14 1600	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORQ-0019_v01_082123 ©

Client: UES_GSL Topeka

Profile # 15928-6

Site: Daylight Petroleum

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																				1											
2																					1											
3																					1											
4																					1											
5																					1											
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60413738

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 26, 2023

Alexandra (Alex) Richards
GSI
2900 NW Button Rd
Suite A-7
Topeka, KS 66618

RE: Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Dear Alexandra (Alex) Richards:

Enclosed are the analytical results for sample(s) received by the laboratory on December 19, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-5
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212023-1
Oklahoma Certification #: 2022-057
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-12
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60444220001	**PMW-2GP**	Water	12/18/23 11:30	12/19/23 08:45
60444220002	**PMW-1GP**	Water	12/18/23 12:50	12/19/23 08:45
60444220003	**PMW-4D**	Water	12/18/23 12:00	12/19/23 08:45
60444220004	**PMW-4I**	Water	12/18/23 12:15	12/19/23 08:45
60444220005	**PMW-4S**	Water	12/18/23 12:30	12/19/23 08:45

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60444220001	**PMW-2GP**	EPA 300.0	RKA	1	PASI-K
60444220002	**PMW-1GP**	EPA 300.0	RKA	1	PASI-K
60444220003	**PMW-4D**	EPA 300.0	RKA	1	PASI-K
60444220004	**PMW-4I**	EPA 300.0	RKA	1	PASI-K
60444220005	**PMW-4S**	EPA 300.0	RKA	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-2GP **Lab ID: 60444220001** Collected: 12/18/23 11:30 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**260**	mg/L	20.0	20		12/21/23 20:04	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-1GP **Lab ID: 60444220002** Collected: 12/18/23 12:50 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**71.9**	mg/L	20.0	20		12/21/23 20:16	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-4D **Lab ID: 60444220003** Collected: 12/18/23 12:00 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**546**	mg/L	100	100		12/22/23 14:21	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-4I **Lab ID: 60444220004** Collected: 12/18/23 12:15 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**680**	mg/L	100	100		12/22/23 14:33	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Sample: PMW-4S **Lab ID: 60444220005** Collected: 12/18/23 12:30 Received: 12/19/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**523**	mg/L	100	100		12/22/23 14:44	16887-00-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

QC Batch: 878003 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60444220001, 60444220002, 60444220003, 60444220004, 60444220005

METHOD BLANK: 3477872 Matrix: Water
Associated Lab Samples: 60444220001, 60444220002, 60444220003, 60444220004, 60444220005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/21/23 17:36	

METHOD BLANK: 3478716 Matrix: Water
Associated Lab Samples: 60444220001, 60444220002, 60444220003, 60444220004, 60444220005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/22/23 13:11	

LABORATORY CONTROL SAMPLE: 3477873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3478717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3477874 3477875

Parameter	Units	60444191001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	213	100	100	359	391	146	178	80-120	9	15	M1

MATRIX SPIKE SAMPLE: 3477876

Parameter	Units	60443752002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	179	250	403	89	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23T2177.01 DAYLIGHT PETROLEUM
Pace Project No.: 60444220

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60444220001	**PMW-2GP**	EPA 300.0	878003		
60444220002	**PMW-1GP**	EPA 300.0	878003		
60444220003	**PMW-4D**	EPA 300.0	878003		
60444220004	**PMW-4I**	EPA 300.0	878003		
60444220005	**PMW-4S**	EPA 300.0	878003		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 60444220

60444220

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Universal Eng.. - GSI

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 777527925 2599 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T218 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0.8 **Corr. Factor** -0.3 **Corrected** 0.5

Date and initials of person examining contents: HF 12/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:**	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Universal Engineering - dba GSI_Topeka	Contact/Report To:	Alexandra (Alex) Richards
Street Address:	2900 NW Button Rd, Topeka, KS 66618	Phone #:	(785)409-1320
		E-Mail:	arichards@gsinetwork.com
		Cc E-Mail:	
Customer Project #:		Invoice To:	Alexandra (Alex) Richards
Project Name:	23T2177.01 Daylight Petroleum	Invoice E-Mail:	arichards@gsinetwork.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Kansas

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other_____

Regulatory Program (DW, RCRA, etc.) as applicable:

Rush (Pre-approval required):
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other_____
Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Heather Wilson
AcctNum / Client ID:
Table #:
Profile / Template: 15928
Prelog / Bottle Ord. ID: EZ 3032416

Preservation non-conformance identified for sample.

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res. Cl2	Number & Type of Containers Plastic	Number & Type of Containers Glass	300.0 Chloride	Sample Comment
PMW-2GP	GW	G	12.14.23	11:30				1		X	60441120
PMW-1GP	GW	G	12.18.23	12:50				1		X	
PMW-4D	GW	G	12.18.23	12:00				1		X	
PMW-4I	GW	G	12.18.23	12:15				1		X	
PMW-4S	GW	G	12.18.23	12:30				1		X	

Customer Remarks / Special Conditions / Possible Hazards:

Collected By:
Printed Name: Monte Bacon
Signature:

Additional Instructions from Pace®:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)
	T98	-0.3	0.8	0.5

	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Relinquished by/Company: (Signature) / GSI	12.18.23 15:30		12.19.23 0845	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Client: Universal Eng... GST

Profile # 19028

Site: 23T2177.01 Daylight Petroleum

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																				1											
2																					1											
3																					1											
4																					1											
5																					1											
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

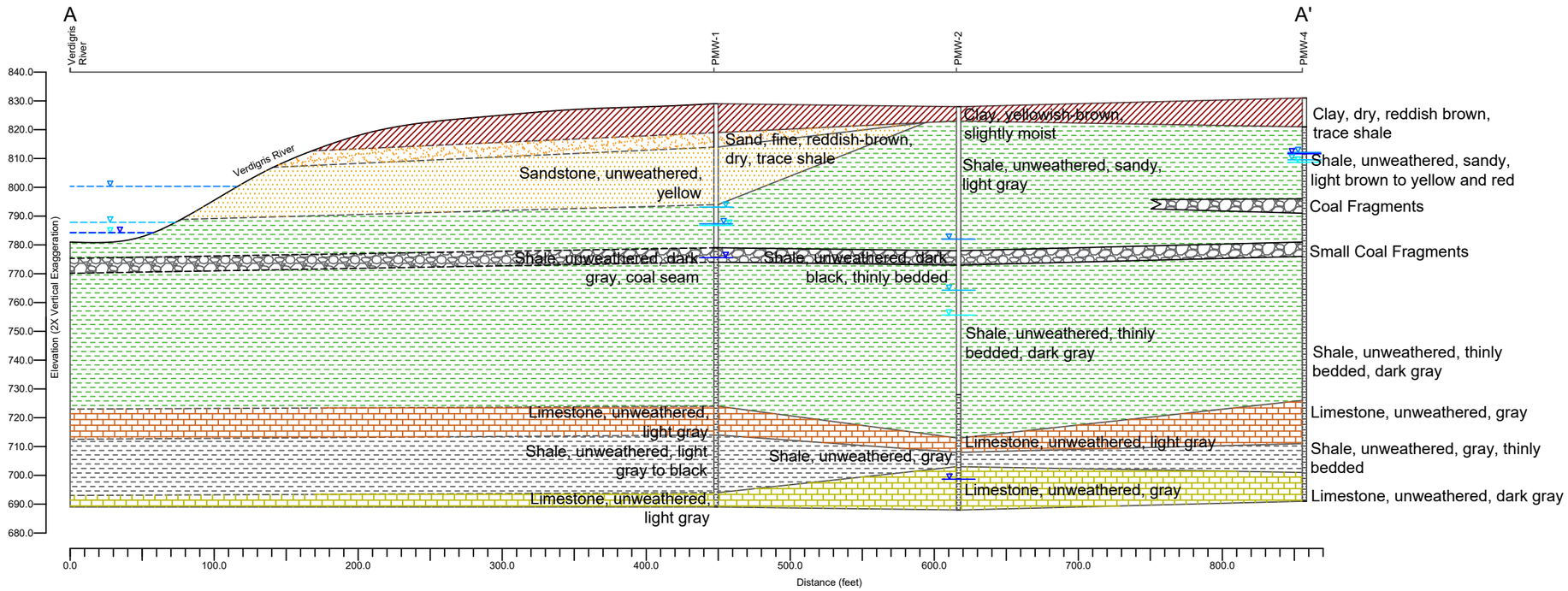
Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

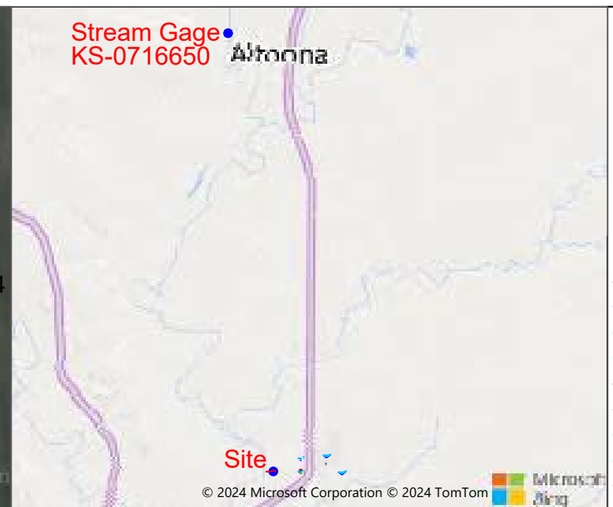
Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60444220

Cross-Section A-A'

EXHIBIT B





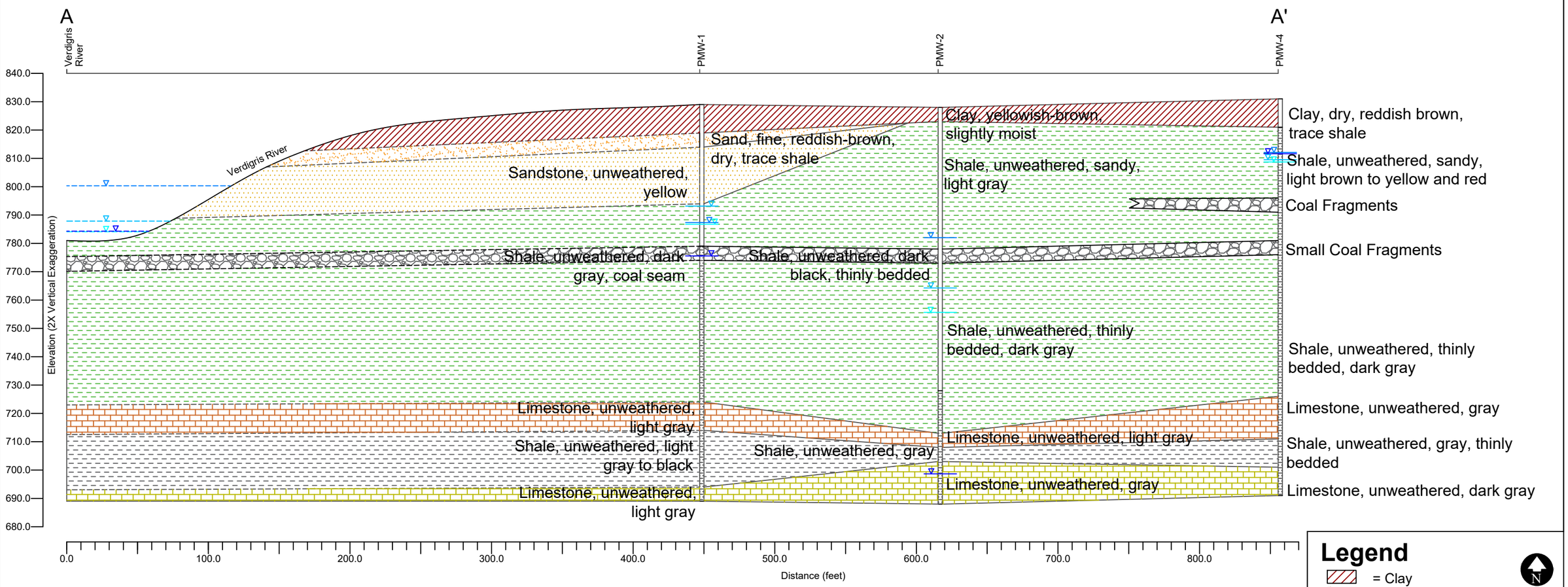
Legend

- = Clay
- = Sand
- = Cottage Grove Sandstone
- = Chanute Shale
- = Coal Seam
- = Drum Limestone
- = Cherryvale Shale
- = Winterset Limestone
- = GW Elevation 12/07/2023*
- = GW Elevation 04/29/2024
- = GW Elevation 06/17/2024
- = GW Elevation 09/12/2024
- = River Height 12/06/2023
- = River Height 04/28/2024
- = River Height 06/16/2024
- = River Height 09/11/2024
- = Transect Line
- = Monitoring Well

*Measured shortly after well development

UES	FIGURE: 1	FIGURE NAME: Cross-Section A-A'	Daylight Petroleum 17400 410 Road Neodesha, Kansas	90' 0 90' SCALE: 1" = 90'
	DATE: 11/22/2024	PROJECT NUMBER: A23124.0141.001		
	DRAWN BY: HS	PROJECT MANAGER: K. Wheeler		

Cross-Section A-A'



Legend

- = Clay
- = Sand
- = Cottage Grove Sandstone
- = Chanute Shale
- = Coal Seam
- = Drum Limestone
- = Cherryvale Shale
- = Winterset Limestone
- = GW Elevation 12/07/2023*
- = GW Elevation 04/29/2024
- = GW Elevation 06/17/2024
- = GW Elevation 09/12/2024
- = River Height 12/06/2023
- = River Height 04/28/2024
- = River Height 06/16/2024
- = River Height 09/11/2024

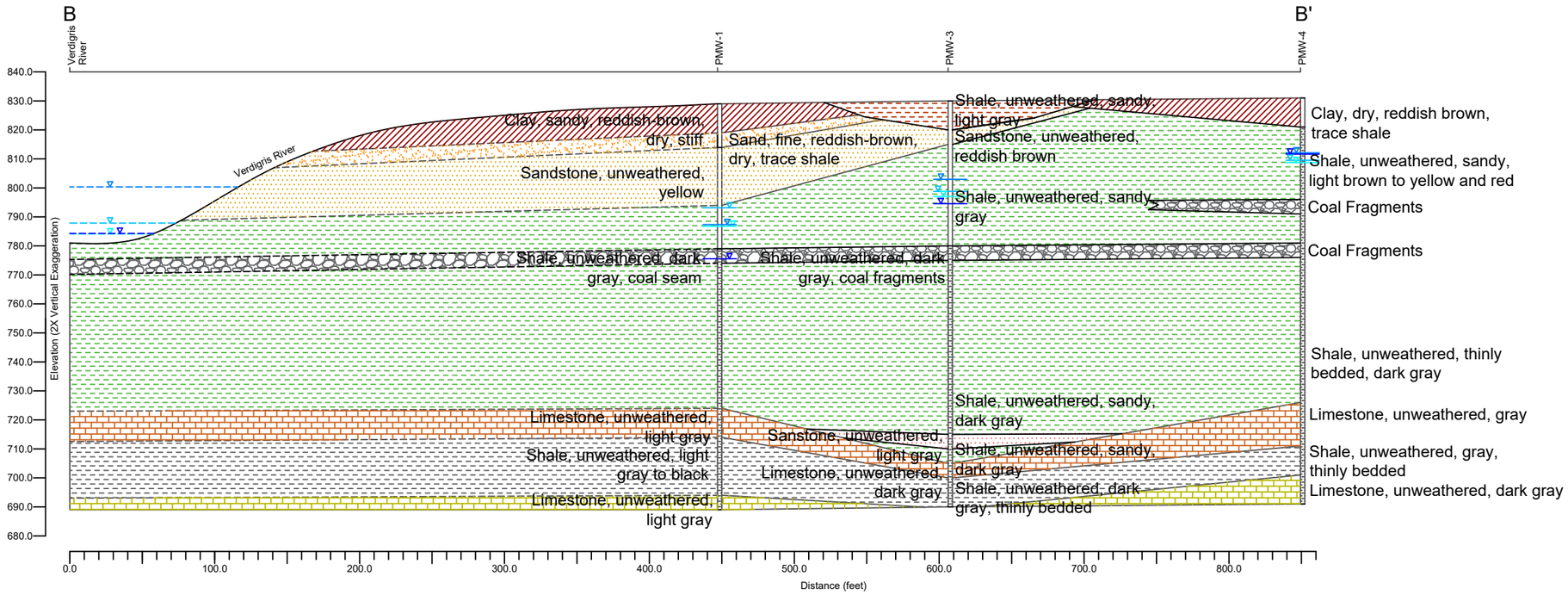
*Measured shortly after well development

UES	FIGURE: 2	FIGURE NAME: Cross-Section A-A'
	DATE: 11/22/2024	PROJECT NUMBER: A23124.0141.001
	DRAWN BY: HS	PROJECT MANAGER: K. Wheeler

Daylight Petroleum
17400 410 Road
Neodesha, Kansas

70' 0 70'
SCALE: 1" = 70'

Cross-Section B-B'



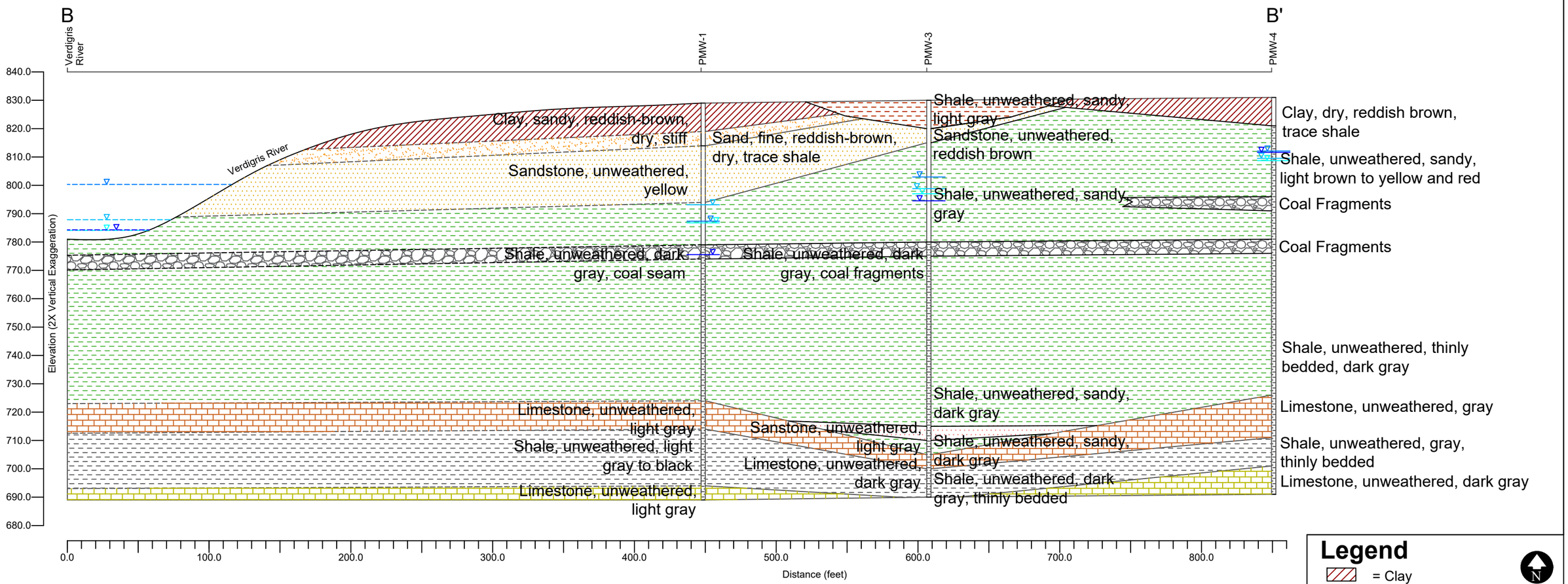
Legend

- = Clay
- = Muncie Creek Shale
- = Sand
- = Cottage Grove Sandstone
- = Chanute Shale
- = Coal Seam
- = Noxie Sandstone
- = Drum Limestone
- = Cherryvale Shale
- = Winterset Limestone
- = GW Elevation 12/07/2023*
- = GW Elevation 04/29/2024
- = GW Elevation 06/17/2024
- = GW Elevation 09/12/2024
- = River Height 12/06/2023
- = River Height 04/28/2024
- = River Height 06/16/2024
- = River Height 09/11/2024
- = Transect Line
- = Monitoring Well

*Measured shortly after well development

UES	FIGURE: 3	FIGURE NAME: Cross-Section B-B'	Daylight Petroleum 17400 410 Road Neodesha, Kansas
	DATE: 11/22/2024	PROJECT NUMBER: A23124.0141.001	90' 0 90' SCALE: 1" = 90'
	DRAWN BY: HS	PROJECT MANAGER: K. Wheeler	

Cross-Section B-B'



Legend

- = Clay
- = Muncie Creek Shale
- = Sand
- = Cottage Grove Sandstone
- = Chanute Shale
- = Coal Seam
- = Noxie Sandstone
- = Drum Limestone
- = Cherryvale Shale
- = Winterset Limestone
- = GW Elevation 12/07/2023*
- = GW Elevation 04/29/2024
- = GW Elevation 06/17/2024
- = GW Elevation 09/12/2024
- = River Height 12/06/2023
- = River Height 04/28/2024
- = River Height 06/16/2024
- = River Height 09/11/2024

*Measured shortly after well development

UES	FIGURE: 4	FIGURE NAME: Cross-Section B-B'
	DATE: 11/22/2024	PROJECT NUMBER: A23124.0141.001
	DRAWN BY: HS	PROJECT MANAGER: K. Wheeler

Daylight Petroleum
17400 410 Road
Neodesha, Kansas

70' 0 70'
SCALE: 1" = 70'