BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS

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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

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I. 1 BACKGROUND INFORMATION AND QUALIFICATIONS 2 **Q**. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD. 3 A. Kelsee Wheeler, 2900 NW Button Road, Ste. A7, Topeka, Kansas 66618. 4 Q. HAVE YOU BEEN RETAINED IN THIS MATTER BY DAYLIGHT PETROLEUM, 5 LLC ("DAYLIGHT") AS AN EXPERT WITNESS? 6 A. Yes. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY? 7 О. I am employed by GSI Engineering, LLC a UES Company (UES) as the Director of 8 A. 9 Environmental Operations. I hold a Professional Geology license in the State of Kansas. 10 Q. WOULD YOU PLEASE BRIEFLY DESCRIBE YOUR BACKGROUND AND WORK 11 **EXPERIENCE?** 12 A. I earned a Bachelor's degree in Geology in 2005 from Kansas State University in Manhattan, 13 Kansas. After graduation I worked for the Kansas Department of Health and Environment 14 ("KDHE") Bureau of Environmental Remediation ("BER") as a Staff Geologist in the Site 15 Assessment Program for three years overseeing multiple Site Investigations. I then transferred 16 into the Voluntary Cleanup and Property Redevelopment Program with the KDHE where I 17 managed numerous sites in the State of Kansas from initial investigations to completion of 18 remediation. During my time with KDHE I drafted work plans, completed fieldwork activities, 19 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.

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| 1 | | I left the Kansas Water Office to take a job as a Project Geologist and Contract |
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| 2 | | Manager for GSI Engineering, LLC. My work involved the drafting of technical documents, |
| 3 | | overseeing of fieldwork, review of technical documents, managing employees, creating |
| 4 | | proposals, cost estimates, and working with clients. Daily tasks include data evaluation of |
| 5 | | laboratory analytical results attained from the collection of soil and groundwater samples and |
| 6 | | providing remediation recommendations as well as communicating with clients and |
| 7 | | subcontractors. In January 2024 I began a transition within GSI Engineering, LLC to the |
| 8 | | Director of Environmental Operations of GSI Engineering, LLC a UES Company. |
| 9 | Q. | DO YOU WISH TO BE RECOGNIZED AS AN EXPERT IN THIS DOCKET ON THE |
| 10 | | BASIS OF YOUR EDUCATION, LICENSOR AND EXPERIENCE IN THE FIELD OF |
| 11 | | GEOLOGY AND GROUNDWATER MONITORING AND REMEDIATION? |
| | | |
| 12 | A. | Yes. |
| 12 13 14 | А. II. | Yes. <u>NATURE OF THIS DOCKET AND EXPERT OPINION THAT THE ACTIONS</u> <u>BEING DEMANDED BY STAFF CONSTITUTE ECONOMIC WASTE</u> |
| 13 | | NATURE OF THIS DOCKET AND EXPERT OPINION THAT THE ACTIONS |
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| 13 14 15 16 | II. Q. | NATURE OF THIS DOCKET AND EXPERT OPINION THAT THE ACTIONS BEING DEMANDED BY STAFF CONSTITUTE ECONOMIC WASTE COULD YOU PLEASE GIVE A BRIEF SUMMARY OF THE FACTS GIVING RISE TO THIS DOCKET? |
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| 13 14 15 16 17 18 19 | II. Q. | NATURE OF THIS DOCKET AND EXPERT OPINION THAT THE ACTIONS BEING DEMANDED BY STAFF CONSTITUTE ECONOMIC WASTE COULD YOU PLEASE GIVE A BRIEF SUMMARY OF THE FACTS GIVING RISE TO THIS DOCKET? 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 |

Neither Daylight nor the KCC has been able to locate any records indicating an 1 2 abandoned well bore exists beneath the subject commercial building, and there is no evidence 3 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 4 5 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 6 Staff has steadfastly insisted that the commercial building be torn down in order to determine 7 8 whether or not a well exists beneath such building.

9 GSI Engineering, LLC has been advising Daylight throughout this process and both 10 myself and my superiors strongly disagree with the approach KCC Staff is taking with respect 11 to this situation. First, there is absolutely no evidence an abandoned well exists beneath the 12 commercial building, and if a well did exist where it might be located. Second, all available 13 data indicates the release which was occurring as a result of the injection, has been stopped 14 and adequate safeguards (stopping injection, installation and sampling of monitoring wells) 15 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 16 17 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 18 19 has filed the subject Petition with the Commission in order to have the Commission determine 20 how this situation should be addressed. If the Commission were to conclude that the 21 commercial building needs to be torn down in order to search for the source of the fluid flow, 22 further investigation will be necessary by KCC Staff to determine if in fact the source of the

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

2 Q. WHY DO YOU BELIEVE THE ACTIONS BEING DEMANDED BY THE KCC 3 STAFF CONSTITUTE ECONOMIC WASTE?

- 4 A. Because the release has been stopped and adequate safeguards have been put into place in 5 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 6 permanent approach to this situation which does not involve the destruction of the commercial 7 8 building, even though groundwater monitoring is a common and an accepted best practice for 9 protecting groundwater. Simply stated, spending several hundreds of thousands of dollars to 10 destroy a commercial building when alternatives exist in which to fulfil the Commission's duty 11 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.
- 17Thus, in my opinion based on my education, training and experience in the field of18geology and groundwater monitoring and remediation, the approach the KCC Staff is taking19(i.e. the unwavering insistence that the commercial building be destroyed) is without scientific20basis and would constitute economic waste.

21 III. FRESH AND USABLE WATER CAN BE ADEQUATELY PROTECTED WITHOUT 22 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

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Commission's regulations require. However, the value and location of the commercial building 1 2 as well as the inability to determine whether a well even exists beneath such building makes 3 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 4 5 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, 6 given the unique facts present in the form of the commercial building the Commission should 7 8 consider alternative means of addressing this situation.

9 GSI Engineering, LLC is in the business of monitoring groundwater impacts, and 10 performing necessary remediation typically in conjunction with and under the oversight of 11 KDHE or the Environmental Protection Agency. Thus, the idea of addressing a situation like 12 this one utilizing monitoring wells and if necessary pumping and permitted injection 13 techniques is not new or novel, and is instead standard industry practice for addressing 14 groundwater concerns.

15 Q. IF Groundwater WERE BEING MATERIALLY IMPACTED BY WHATEVER 16 EXISTS BENEATH THE COMMERCIAL BUILDING WOULD YOU BE ABLE TO 17 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.

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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?

8 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 9 10 subject formations, or from historic poor management practices in the area for oil production, 11 or a more recent release. Thus, additional monitoring should be performed in order to develop 12 a better understanding of what has transpired. Currently, there is not enough data to establish 13 a trend or to decipher a source area. Groundwater samples should be collected utilizing 14 Hydrasleeve No-Purge samplers at discrete depth intervals and left in place for an adequate 15 amount of time before being retrieved for sample collection. Monitoring wells should not be 16 purged, as this would introduce groundwater into the well from not a discrete interval, but the 17 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 18 19 sample from a more defined zone as opposed to the current sampling procedures completed 20 at the direction of KCC Staff.

21 In addition, injection into the Olnhausen Farms #6 should be permanently 22 discontinued, thus eliminating the re-pressuring mechanism which ultimately channeled to the

| 1 | anomaly beneath the commercial building. The Olnhausen Farms #6 could either be plugged |
|----|---|
| 2 | or converted to a producing well in order to reduce reservoir pressure in the area of the |
| 3 | reservoir which communicated with the anomaly beneath the commercial building thus further |
| 4 | reducing the likelihood of future breakouts. |
| 5 | If the Commission wished to impose something beyond an order directing Daylight to |
| 6 | either plug the Olnhausen Farms #6 or convert it to a producing well, Daylight could be |
| 7 | directed to enter the site into the Voluntary Cleanup and Property Redevelopment Program |
| 8 | ("VCPRP") administered by KDHE BER. This would allow an Environmental Use Control |
| 9 | ("EUC") to be placed on the Site, where injecting activities could be limited, restricted, or |
| 10 | banned completely, with the input of the KCC. |
| 11 | If in the future, data obtained from the existing monitoring wells indicates a need to |
| 12 | do so, additional monitoring wells with shorter screened intervals could be drilled, and |
| 13 | remediation measures utilizing recovery wells could be initiated. |
| 14 | In addition, it should be kept in mind that due to the majority of the Table 1 lithology |
| 15 | consisting of shale and limestone as opposed to sands and gravels which would have a higher |
| 16 | recharge rate the aquifer cannot recharge the water wells at a rate equal to or greater than the |
| 17 | rate that the water would be extracted. Thus, the lack of groundwater in the area (within Table |
| 18 | 1) potentially eliminates the use of the aquifer as a potable water source, which significantly |
| 19 | decreases the risk of exposure due to minimal receptors in the area. While this water must still |
| 20 | be protected, I am only pointing out the lack of sufficient quantities of groundwater in the area |
| 21 | as a mitigating factor which significantly decreases the risk of exposure even if such water |
| 22 | were impacted. |

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1 IV. BASED ON THE DATA COLLECTED FROM THE MONITORING WELLS IT DOES 2 NOT APPEAR THAT THE RELEASE WHICH OCCURRED BENEATH THE 3 BUILDING IS IMPACTING GROUNDWATER WITHIN THE TABLE 1 INTERVAL 4 AT THIS TIME

5 Q. EARLIER YOU INDICATED THAT BASED ON THE DATA COLLECTED FROM 6 THE MONITORING WELLS IT DOES NOT APPEAR THAT THE RELEASE 7 WHICH OCCURRED BENEATH THE BUILDING IS IMPACTING 8 GROUNDWATER WITHIN THE TABLE 1 INTERVAL AT THIS TIME. CAN YOU 9 EXPLAIN WHAT ABOUT THE DATA LEADS YOU TO CONCLUDE THAT?

10 A. First, as discussed in detail below, the chloride levels in each of the monitoring wells is 11 consistent with what I would expect based upon the manner in which each of them was 12 constructed, the location of the wells within a known area of abundant oil production, and the 13 geology encountered when drilling each well.

14 Second, given the very low volume of groundwater present in the Table 1 interval at 15 this site, if produced water from Daylight's Olnhausen Farms lease with chloride 16 concentrations between 41,000 ppm and 44,000 ppm were flowing into the Table 1 interval 17 the chloride levels in the groundwater samples we have collected would be several times 18 higher than what we are seeing. In addition, if a subsurface release into the freshwater bearing 19 zones (less than 150' bgs Table 1) had occurred when the breakout was observed at the 20 surface, the chloride concentrations in groundwater we are seeing would be significantly 21 higher, as the amount of groundwater present within Table 1 is minimal. As of today, 22 groundwater concentrations identified in the four monitoring wells are only slightly above 23 concentrations documented in the 1960's by the Kansas Geological Survey.

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

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1. From the top to the bottom, or

2. From the bottom to the top.

5 Shallow groundwater samples (< 30 feet bgs) collected from the temporary geoprobe locations 6 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 7 8 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. 9 10 However, upgradient wells PMW-3 and PMW-4 have both had detections of concentrations 11 exceeding the SMCL for Chloride (250 mg/L). PMW-4, had consistent concentrations from 12 all samples regardless of what depth they were collected. With the concentrations of chloride 13 that we are seeing onsite now in all wells, it is likely that contamination has occurred from the 14 top (surface) to the groundwater. From poor industry practices in the early years of drilling as 15 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 16 17 contamination likely occurred many years ago when poor industry practices were common such as evaporation pits, surface release of produced water, inadequate well completion 18 19 techniques and poor drilling practices.

Q.

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EVEN IF THERE WERE NO RELEASE BENEATH THE SUBJECT BUILDING?

WOULD THERE BE ANY CHLORIDE DETECTED IN THE TABLE 1 Groundwater

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.

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In 1966 KGS collected groundwater samples from the same limestone members 4 5 observed during drilling on this site, in the neighboring Neosho County. See, 1966 KGS 6 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 7 8 million is equivalent to one pound of substance per million pounds of water or 8.33 pounds 9 per million gallons of water). Therefore, based on this study, we would expect to see chloride 10 concentrations between 40 and 1,250 ppm in the subject monitoring wells as a baseline / static 11 level. So chloride concentrations below this level would not be considered elevated at all.

12 In addition, due to the large number of oil and gas wells drilled before regulations were 13 set and enforced, contamination is known to have occurred in several water bearing zones 14 across the United States, including Kansas. Discovery of oil in the area at issue in this Docket 15 was in the 1890's. (See, email from Julie Shaffer to Rolando Moreno 4.24.24; Exhibit TR-4, 16 Page 2 of 6 AND KGS Bulletin 165, Part 1). Since, oil and gas production and development 17 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 18 19 years of oil drilling, evaporation ponds, pits, and/or trenches were dug to contain the produced 20 water/brine (water with high chloride content) that is often found in the same geologic trap as 21 the petroleum. Often times this water was released directly onto the ground surface or into 22 rivers or streams as the impact to usable surface water and groundwater was not understood.

1 Thus, higher chloride concentrations in the Table 1 groundwater at this site does not come as 2 a surprise and does not necessarily have anything to do with the recent release beneath the 3 commercial building.

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

Absolutely. Rainfall, an increase or decrease in volume of groundwater, and also a shift in the 7 A. 8 lithology from which the groundwater is obtained will all cause predictable fluctuations in 9 chloride levels. Essentially three things can happen, 1) rainfall or increased groundwater 10 volumes can dissolve chlorides into the groundwater which previously existed in either the 11 well bore or the formation in a solid state, thus increasing chloride levels; 2) rainfall can cause 12 chlorides to sink deeper into the soils to groundwater; and 3) certain formation formations 13 contain higher concentration of chlorides than others, thus if a sample is predominated by 14 water from one formation or another, the chloride concentration will fluctuate widely (which 15 is what we are seeing in this case).

16 These natural and expected fluctuations in the data collected from monitoring wells 17 must be analyzed in a scientific manner as opposed to simply looking for a higher number or 18 lower. Data must be analyzed in the context of rainfall events, comparing one quarter to the 19 same quarter of another year, isolating lithology from which the sample is taken, etc. in order 20 to determine whether an actual trend exists as opposed to predicable fluctuations from one 21 quarter to the next.

22 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?

5 A. The chloride levels we are seeing in the monitoring wells are relatively low. These levels are 6 only slightly higher than background chloride levels found in the 1966 KGS survey, and the 7 two wells that are exhibiting chloride concentrations above those levels are higher for 8 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.

14 If a subsurface release to the freshwater bearing zones (less than 150' bgs Table 1) had 15 occurred, the chloride concentrations in groundwater we are seeing today would likely be 16 significantly higher, as the amount of groundwater present within Table 1 is minimal. As of 17 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 18 19 1960's groundwater samples. More than 60 years have passed since those samples were 20 collected, during which time additional sources from oil field production processes have likely 21 contributed to the chloride contamination in groundwater.

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A. <u>THE MANNER IN WHICH THE MONITORING WELLS WERE CONSTRUCTED</u>

1 2

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.
- 9 KCC Staff requested these wells have very long screened intervals to extend across the
- 10 entire Table 1 interval. Conceptually I am sure they felt doing so would reveal contamination
- 11 coming from anywhere within the Table 1 interval. However, this design actually makes it
- 12 nearly impossible to identify where within the Table 1 interval the groundwater is entering the
- 13 screened interval of the monitoring well.
- 14 Studies have been completed to show the inaccuracy of samples collected from long
- 15 screened wells. Included below is the abstract of the study completed by Peter E. Church and
- 16 Gregory E. Granato.

17

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

1 with higher transmissivity, regardless of that layer's concentration of contamination. The 2 studies multi depth short screened wells were utilized to identify the discrete zones with the 3 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 4 5 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 6 potentially non representative groundwater sample results. Conclusions of the study state: Use 7 of long screen wells will not provide representative water quality samples even in a relatively 8 9 homogeneous, unconfined sand and gravel aquifer.

10 Q. GIVEN WHAT YOU HAVE STATED ABOUT THE LESS THAN IDEAL NATURE 11 IN WHICH THE MONITORING WELLS WERE REQUESTED TO BE INSTALLED, 12 DO YOU STILL BELIEVE THESE WELLS ARE ADEQUATE TO DETECT AND IF 13 **NECESSARY REMEDIATE ANY Groundwater IMPACT THAT MIGHT OCCUR?** 14 Yes. I am only pointing out that the data obtained from these wells must be analyzed in light A. 15 of the potential biases created by the manner in which the monitoring wells were constructed. 16 The potential for these biases make it imperative that the data be compared in a manner that 17 accounts for differences in rain fall events, changes in groundwater volume, etc. It is also 18 critical that data be analyzed collectively to look for trends revealed by comparing samples 19 from similar times of year, similar rain fall circumstances, similar depths and similar 20 groundwater circumstances.

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

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EACH WELL?

2 Most definitely. The monitoring wells onsite, while all completed to a depth of 140' have A. 3 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 4 5 in PMW-1 (west of the building). Data collected at this site cannot definitively identify the 6 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, 7 8 chlorides will migrate vertically as they are denser than water. With the wells intersecting semi 9 confined units, mixing of the water column within the wells is occurring from the bottom up, 10 as well as from top to bottom.

11 The initial sampling event on December 18, 2023, consisted of multiple samples from 12 multiple depth intervals. The purpose of this was to determine if there was a vertical profile 13 within the wells to evaluate the potential for contamination to be migrating from the surface 14 to the bottom of the aquifer. Results ranged from 34.9 mg/L to 848 mg/L, all well below the 15 concentrations of the samples collected from both the pit, and the Olnhausen well #6 sample 16 collected in July 2023. Due to the long screen interval of PMW-4 (east of the building) that 17 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, 18 19 due to the lack of groundwater present in the well. The multi depth sampling event did show 20 a range of results when samples were collected from the same well at different depths. For 21 example, PMW-1 (well located west of the building) is completed at 140' deep with a screened 22 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 |

9 The second thing to note is the change in the depth to water, most notably the 10 significant change in monitoring well PMW-2 (40 feet of screen), and the lack of fluctuation 11 in PMW-4 (130 feet of screen). With the increase in the depth to groundwater, chloride 12 concentrations should be expected to increase as well since chloride, having a higher density 13 than water, will migrate vertically throughout the water column (i.e., will sink). Also, the 14 samples from multiple depth intervals within the monitoring wells demonstrated the range of chloride concentrations within the Table 1 interval with higher chloride concentrations 15 16 occurring at deeper depths. PMW-2 being predominantly screened in limestone as opposed to 17 the Chanute Shale, could be representative of both naturally occurring chlorides, and historic 18 contamination that has migrated from the surface, to the Chanute Shale, and into the screened 19 interval, migrating vertically due to density. It is common practice in environmental consulting 20 to sample at the bottom of the well for those contaminants that are more dense than water, and 21 to sample at the top of the water table for those contaminants that have a density less that 22 water. Therefore, sampling at the bottom of the on-site monitoring wells we should expect for 23 chloride concentrations to be greater than in the shallow intervals.

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

PRE-FILED TESTIMONY OF KELSEE WHEELER

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

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

6 A. PMW-1 has a screened interval of 90 feet, approximately 60 feet is within the Chanute shale. 7 Groundwater levels in this well have ranged from 35.85 to 53.43 (range of 17.58'). For all 8 events, with the exception of the December event, groundwater levels in this well have 9 remained above the screened interval, indicating the well was installed in a semi confined 10 water bearing zone. Similar to the other three monitoring wells, the deepest groundwater depth 11 coincided with the highest chloride concentration. Specifically The sample collected at 85' bgs 12 identified chloride concentrations at 34.9 mg/L while the sample collected at 139' bgs had 13 results of chloride at 848 mg/L. Chloride levels from the 139' bgs interval were as follows: 14 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 15 16 from this well do not provide any indication that groundwater is being, or has been impacted 17 by the breakout beneath the commercial building.

18 19

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.

6 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 7 8 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 9 10 PMW-2 decreased to 46.60' bgs (a difference of 82.74'). The following two sampling events, 11 June and September, depth to groundwater increased to 63.73' bgs, then 72.35' bgs. With the 12 increase in the depth to groundwater, chloride results predictably increased in concentration 13 from 2,060 mg/L to 2,370 mg/L. Chloride. As indicated above groundwater levels significantly 14 affect chloride concentrations. Thus, no discernable trend is shown by the PMW-2 well that 15 would indicate groundwater is being, or has been impacted by the breakout beneath the 16 commercial building.

17 18

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

1 groundwater levels have varied from 35.84' bgs to 53.43' bgs (53.43' bgs, immediately after 2 development). Similar to the other wells, the greater the depth to groundwater, the higher the 3 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 4 5 is the only well of the four that did not encounter the Dennis Limestone formation, known to 6 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 7 8 for recharge. Chloride levels from the 139' bgs interval were as follows: Dec.262; Apr. 130; 9 June 59.9; Sept. 61.9. Obviously, these readings do not indicate any impact to groundwater, 10 and certainly do not indicate that the breakout beneath the commercial building is continuing 11 to flow.

12 13

14

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

15 PMW-4 (east of the well) has the largest screened interval (130') as shown on the Cross 16 Sections (Exhibit KW-2), this well has demonstrated the least amount of difference in depth 17 to groundwater varying only 3.38 feet. For all sampling events, the static groundwater level 18 has been within the screened interval of the well. This well, also, as expected has had the least 19 amount of variation in the chloride concentrations ranging from 523 mg/L to 745 mg/L. 20 Concentrations in this well could be biased low, due to the higher frequency of sandy shale 21 noted throughout the screened interval. These zones would have a higher transmissivity, and 22 potentially lower contamination concentrations, therefore diluting chloride concentrations 23 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.

7 8

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

9 Q. WHAT IS THE PROPER MANNER IN WHICH TO REVIEW AND INTERPRET

10 THE DATA OBTAINED FROM THE FOUR MONITORING WELLS?

11 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 12 13 of similar rainfall and similar depth to groundwater. In addition more data points are needed 14 in order to even begin to look for a trend, as the fluctuations we are seeing in the samples we 15 have now are normal and are what we would expect to see in light of the circumstances set 16 forth above concerning each well. If I were to see chloride levels exponentially spike in a given 17 sample without any other explanation, I would consider taking additional action after that 18 result had been confirmed through verification sampling over a period of time, to rule out the 19 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 20 21 set forth above in the context of geology, rainfall events, and other such variables in order to 22 understand what it is actually showing us.

| 1 | | The above referenced fundamental principles and methods must be followed in |
|--|----|---|
| 2 | | groundwater monitoring well network design, sampling, data collection and data analysis. |
| 3 | | These principles and methods are reliable and commonly accepted in both the governmental |
| 4 | | and private sector, as evidenced by the following authorities, Driscoll, Fletcher G., 1989 |
| 5 | | Groundwater Wells; Fetter, C.W. 1999 Contaminant Hydrology; Freeze, R. Allan, and Cherry, |
| 6 | | John A., 1979 Groundwater; and Heath, Ralph C., 2004 Basic Ground-Water Hydrology. My |
| 7 | | conclusions are the product of the application of these fundamental principles and methods to |
| 8 | | the facts of this case. |
| 9 | Q. | KCC STAFF HAS ANALYZED THE SAME DATA YOU HAVE AND THEY |
| 10 | | CONCLUDED GROUNDWATER IS CONTINUING TO BE IMPACTED BY THE |
| 11 | | BREAKOUT BENEATH THE COMMERCIAL BUILDING; CAN YOU EXPLAIN |
| | | |
| 12 | | WHY THEIR CONCLUSION IS DIFFERENT THAN YOURS? |
| 12 13 | A. | WHY THEIR CONCLUSION IS DIFFERENT THAN YOURS? I don't know for sure because they do not provide any detail concerning how they interpreted |
| | A. | |
| 13 | A. | I don't know for sure because they do not provide any detail concerning how they interpreted |
| 13 14 | 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 |
| 13 14 15 | 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 |
| 13 14 15 16 | 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 |
| 13 14 15 16 17 | 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 |
| 13 14 15 16 17 18 | 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. |
| 13 14 15 16 17 18 19 | 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 |

| 1 | | than plugging to address the breakout from the very beginning of this process. In the Notice |
|----------------------------|-------|--|
| 2 | | of Violation issued on November 1, 2023, Troy Russell specifically stated, |
| 3 4 5 6 7 8 | | [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. |
| 9 | | Despite its effectiveness and widespread use across the nation as a best practice for detecting |
| 10 | | and remediating groundwater impacts, KCC Staff has not been willing to consider |
| 11 | | groundwater monitoring as a long term response to this situation. This approach completely |
| 12 | | disregards the impact upon the landowner, upon Daylight and the Commission's competing |
| 13 | | statutory duty to prevent economic waste. GSI and Daylight believe there are other |
| 14 | | alternatives, both cost effective and efficient that could be put into place to ensure protection |
| 15 | | of both human health and the environment. |
| 16 17 18 19 | 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 |
| 20 | Q. | BASED UPON THE DATA WHICH HAS BEEN GATHERED TO DATE, WHAT IS |
| 21 | | THE MOST LIKELY CAUSE OF THE CHLORIDE CONCENTRATIONS FOUND |
| 22 | | IN THE TABLE 1 Groundwater AT THIS SITE? |
| 23 | A. | First, we must keep in mind that the chloride levels found in the four monitoring wells are |
| 24 | | relatively low, especially when compared to the concentrations of chloride in the water that |
| 25 | | was sampled from beneath the building, and only slightly above concentrations documented |
| 26 | | in the 1960's groundwater samples. |
| | Pre-I | FILED TESTIMONY OF KELSEE WHEELER Page 24 |

Page 24

| 1 | | Second, I believe that the chloride concentrations in the area are related to the many |
|----------------------------|-----|---|
| 2 | | decades of oil production activities; possibly from poor well completion, surface discharge of |
| 3 | | produced water or even a pit used to hold brine water which could correlate with the multiple |
| 4 | | dark shadowed spots on the older aerial images. Shallow groundwater samples (< 30 feet bgs) |
| 5 | | collected from the temporary geoprobe locations and monitoring wells on this site identified |
| 6 | | chloride concentrations ranging from 71.9 mg/L to 523 mg/L. This is indicative of the chloride |
| 7 | | contamination occurring at the surface over a widespread area most likely many years ago. In |
| 8 | | addition, groundwater flow in this area overall is predominantly to the southwest, and |
| 9 | | upgradient wells PMW-3 and PMW-4 both had concentrations exceeding the SMCL for |
| 10 | | Chloride (250 mg/L). PMW-4, had consistent concentrations from all samples regardless of |
| 11 | | what depth they were collected. With the concentrations of chloride that we are seeing onsite |
| 12 | | now in all wells, it is likely that contamination has occurred from the top (surface) to the |
| 13 | | groundwater, from poor industry practices in the early years of drilling as previously |
| 14 | | mentioned, and slow infiltration of chlorides to the shallow aquifer(s). |
| 15 | | Third, if a subsurface release to the freshwater bearing zones (less than 150' bgs Table |
| 16 | | 1) had occurred, the chloride concentrations in groundwater we are seeing today would likely |
| 17 | | be significantly higher, as the amount of groundwater present within Table 1 is minimal. |
| 18 19 20 21 22 | 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 |
| 23 24 | Q. | IN TERMS OF THE LEVEL OF PROTECTION AFFORDED TO Groundwater, CAN YOU COMPARE, THE PLUGGING OF AN ABANDONED WELL, WITH ONGOING |

1 GROUNDWATER MONITORING THOUGH THE MONITORING WELL 2 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.

9 These monitoring wells on the other hand, are only installed within table 1 (140' bgs) 10 and do not create a potential pathway for a breakout. They allow groundwater samples to be 11 collected from within the Table 1 interval to evaluate if a source is impacting the fresh/usable 12 water. Thus, if something where to happen which endangers fresh and usable water, it would 13 be detected via the monitoring wells. In addition, the monitoring wells provide access through 14 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 15 16 provide an added level of danger to fresh and usable water. A monitoring well program such 17 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 18 19 burdensome than plugging a well. However, in this instance, since we cannot determine 20 whether a well even exists without destroying a commercial building at the cost of hundreds 21 of thousands of dollars, the monitoring well program is the only feasible solution to the 22 breakout which occurred. Additional solutions, as previously mentioned (KDHE-VCPRP

| 1 | | program with an EUC) could be completed in conjunction with groundwater monitoring. |
|----|----|---|
| 2 | Q. | IN YOUR OPINION WOULD IT BE ECONOMICALLY WASTEFUL TO DESTROY |
| 3 | | THE COMMERCIAL BUILDING IN ORDER TO LOOK FOR AN ABANDONED |
| 4 | | WELL? |
| 5 | А. | It would be extremely wasteful to do that and would serve no real purpose, beyond providing |
| 6 | | undue harm to Daylight and to the landowner. |
| 7 | Q. | WHY DO YOU SAY THAT IT WOULD SERVE NO REAL PURPOSE TO TEAR |
| 8 | | DOWN THE COMMERCIAL BUILDING IN ORDER TO LOOK FOR AN |
| 9 | | ABANDONED WELL? |
| 10 | А. | Because the breakout has already been stopped, with the injection being shut down and a |
| 11 | | monitoring well network is in place which will allow us to detect any increasing trend in |
| 12 | | groundwater contamination now or in the future. This coupled with, the plugging or |
| 13 | | conversion of the Olnhausen Farms #6 to a producer will adequately protect fresh and usable |
| 14 | | water without causing unnecessary economic waste to occur through the destruction of the |
| 15 | | landowner's building. In addition, the building itself is acting as a barrier, preventing |
| 16 | | infiltration through precipitation of the chloride impacted water that surfaced. |
| | | |

17 VII. <u>RELIEF REQUESTED</u>

18 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

| 1 | plugging it. The flow of fluid from beneath the building stopped at the surface when injection | | | | |
|--|---|--|--|--|--|
| 2 | into the Olnhausen Farms #6 well ceased, and groundwater samples indicate that there is no | | | | |
| 3 | subsurface contamination of fresh and usable water in response to this release. In addition, the | | | | |
| 4 | building itself and its large concrete pad is acting as a cap, preventing infiltration from surface | | | | |
| 5 | to groundwater. | | | | |
| 6 | Thus, my recommendation to the Commission would be as follows: | | | | |
| 7 8 9 10 11 12 13 | 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; | | | | |
| 14 15 16 17 18 19 20 21 22 23 | 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; | | | | |
| 24 25 26 27 28 29 30 | 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. | | | | |
| 31 | If in the future, data obtained from the existing monitoring wells indicated a need to | | | | |
| 32 | do so, additional monitoring wells with shorter screened intervals could be drilled, and | | | | |

| 2 | | are unnecessary at this time. |
|---|----|---|
| 3 | | In addition, the Commission must keep in mind that the quantities of groundwater |
| 4 | | present in this area (within Table 1) are minimal and thus are unlikely to be produced. |
| 5 | Q. | DOES THIS COMPLETE YOUR TESTIMONY TO THE COMMISSION? |
| 6 | A. | Yes. |

VERIFICATION OF KELSEE WHEELER

STATE OF KANSAS)) ss: COUNTY OF Change)

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.

SUBSCRIBED AND SWORN to before me on this 2th day of December, 2024. NOTARY PUBLIC - State of Kansas Bryanna V Payne My Appt. Expires 12-2 7.27 NOTARY PUBL

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

h

Keith A. Brock

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



December 29, 2023

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, batteryoperated 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 Woll | Total Depth (ft | Static Water | Hydrasleeve Interval and Formation |
|-----------------|-----------------|----------------|---|
| Monitoring Well | bgs) | Level (ft bgs) | 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 onsite 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.



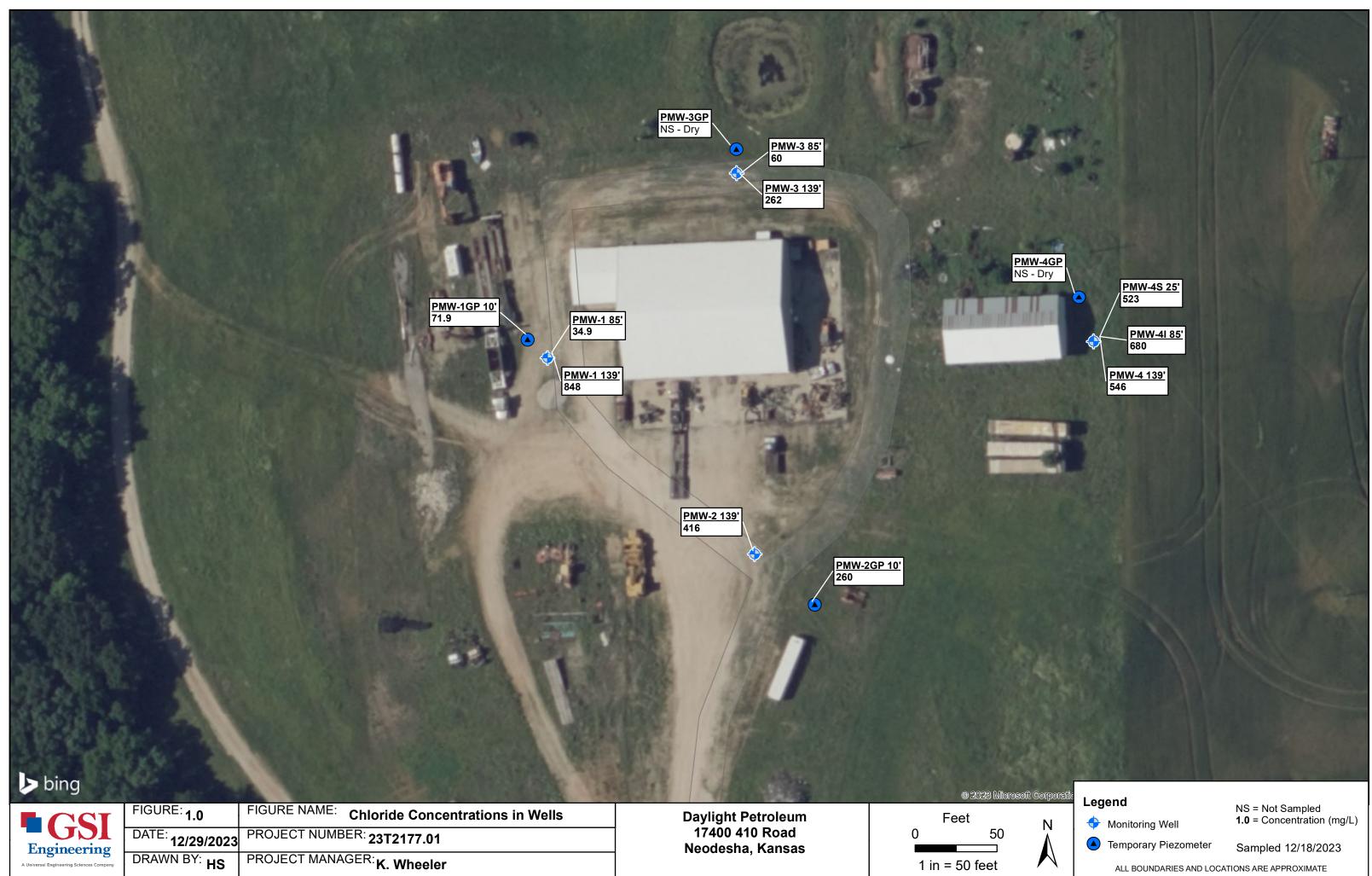
5.0 References

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



Monitoring Well Installation and Sampling Daylight Petroleum – Onhausen Injection Well 6 December 2023

Attachment 1: Map





Attachment 2: Table



| Table 1 - Groundwater - Chloride Analytical Results Daylight Petroleum - Neodesha, KS | | | | | | | |
|--|---|------|--|--|--|--|--|
| Well | 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



| Project Nam | Correspondences | |
|-------------|--|--------|
| | Departure Time: Non- GSI Personel Onsite: KW | |
| Veather: | Wess Daniel First Hill | |
| Simes: | Notes: | |
| | | |
| 7:00 | Leave GSI OFAICE IN TOPEKZ ODO 24683 | |
| 9:45 | Arrive onsite Marking out well locations | |
| | PMW-02 (South) 37.42910 -95.66233 | |
| | PMW-04 (EASH) 37.42974 -95.66170 | ск. |
| | PMW03 (North) 37.43001 -95.666241 | |
| 0:15 | Josh arrives onsite with Probe | |
| 1030 | Flint Hills Drillers zurive onsile | |
| 035 | Probe begin at PMW-2 hit refusal at 10' | |
| | going to try a little more, set pitzo | |
| 1050 | Probe begin at PMW-4, hit refusal at 10' | |
| 11:00 | Wiss wrives, set piezo PWM-4, 11:20 PMW-1 rehuar | 27 |
| 11:05 | set up on PMW-2 for aur notary, start drilling | er pou |
| | Hit Pram LS@ 109 limestone until 113 | |
| | Hit second LS @ 119, setting well to dupe | -pw |
| | Hit water in Bround 125', sample for CI, Alwonst | KW |
| | in stop. TD = 139.5', 40' screen 4 bu wels the |) |
| 12:15 | Set well casing, Josh leaves wi probe, growti | |
| 00 | move to pmuv-or, start drilling | |
| .50 | TD 140, checked w/ landowners rep-want soil | |
| | thin spread in grass to the west of | |
| .54 | starting to put in casing - doing go scheen per Kin | |
| Vinc | Begin send gravel pate | |
| eld Lead: | AR | |
| gnature: | y y y | 1 4 |
| -41 | · 12/4/2023 | |
| 1 | | |



Pacy 2

| Project Name: | Project Location: | | GSI PM: |
|--|-------------------|---------------------------|----------|
| Daylight Petroleum Arrival Time: Departure Time: | 17400 410 Rd | , Neodesha, KS 22T2177.01 | KW |
| Arrival Time: Departure Time: | | Non- GSI Personel Onsite: | |
| 2014 | | | |
| Times: Notes: | | | |
| 2:15 Bearin Grout | ing PMW-1 | Shuckets the | |
| 235 Done drilling | For day- FHE | meds to go pic | e up |
| more scree | in's send, wi | 11 meet base of Site | tomorrow |
| 1:50 Cleaning u | p, cnecked p | iezos-all dry | |
| Pick up | trash around | d mws ' | |
| | Site, drive A | o hotel in Indy | 1 |
| 3:95 Arrive a | t hotel | | |
| | AD 1 | 2/4/22 | |
| | TK- 1 | 011105 | |
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| eld Lead: AR | | | |
| gnature: AAA | Ass | Date: 12/4/2 | 5 |
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Field Notes

| A Universal Engineering Sciences Company | | | | | |
|--|--------------|-------------------|---------------------|-----------------|---------------|
| Project Name: | | Project Location: | Address City State | GSI Project No: | |
| Daylight Petroleum | | - | , Neodesha, KS | 22T2177.01 | GSI PM: KW |
| Arrival Time: Departure Time: | 1:30 | | Non- GSI Personel C | nsite: Dr | MMY-DLP |
| | 40s | | Wess, Daryle | L, Daniel-FHD | Vachuck |
| Times: Notes: | | | | | |
| 830 Leave 1 | 1-1-0 | | | | |
| | totel | | | | |
| 9:00 Arrive | onsite, up | dated k | elsee rea | garding plan | For dzy. |
| 9:10 Julie | shaffer w/ | KCC no | lve | | |
| 9:45 Flint 14 | ills arrives | |) Trulgat | e His, set | -up on |
| PMW3 | , 10:0 | is fart | dilling | î | 0 |
| | drilling | | O' scree | n 140-5 | 0 |
| 11:00 Casing | well, | installing | sand à a | gravel Pace | 11:15 Grout |
| | 3 puckets | | <u> </u> | , | |
| 1120 Set 4 | pon la | st wel | e PMic | 1 | |
| 12:08 TDC | 140, | 12:20 | casing | well | |
| 235 5md | 5 grave | l price | install, | to 81 | |
| 12:45 shurt | growing | 20298 | , I buck | et | |
| Meanu | ed sw2 | in PMW | -2: 12- | 1.47 660 | |
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| 2400 p | pm, co | loulated | purge vol | = 92 gallos | S |
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| 5:00 | Kerry prives. | end is zple | to get th | bing out | vac truck | 5 |
| 8:45 | set up an | PMW-1 W | 1 V CASA | Mess arriv | es at 9:00 | 0 |
| 9:15 | PMW-1 GP ho. | le is dry - | ports min = | 5 havis, Sta | ut pumping " | 7.15 |
| 7:45 | PMW-4 SWL | 19.13 bto | C, pall | sample for | field | 1 |
| | Cli test <4 | 100 9:50 Co | mplete PM | W-2 | | |
| 9:50 | measure PMW | | | 00 measure | PMW-2. YIN | ne-diy |
| | Measure PMW- | I probe - dri | | WOZIBLIK PANIN- | -3 DADR - de | |
| | 10:15 complete] | mu-1 |) | 40 E M/A S - L 10 100 | - proje de | 7 |
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Driver 32ys can't air lift out of PMW-04, started bubbling up through the grout after I well volume. May need to use wateria to get nest of it out?

1:25 Masured SWL in PMW-1 again, 110:20, 2.5 hours to recharge to thet 1:45 Dave to Indy to refurnicable puller 2:50 arrive back onaile 3:00 FHD leaves set up Waterra on PMW-4 3:30 start dev. PMW-4 Pump on well initial 5:495-dratk, frewe 6:15 Arrive 25 hotel

AR 12/10/23

Dec 7

Leave hotel 7:30 | 5:00 Arrive onsite let up on Penusit to 8:15 rerune development, got wakerra pumping at 19pm 8:50 measure SWL PMW-2 129:34 btoc, set HS at 138, 19pm 9:05 Pull sleeve, collect sample 1MW-2 Chloride 9:35 PMW-338.45 9:40 call KW 1 update. 9:43 PMW-4 pumped dry after 269 901ng to ut 1t sit while sample office cuells 9:54 pmw-3 Book deploy deep HS at 9:54, sample 10:00 139' 10:07 pmw-3. duploy 85'HS 2+ 10:07, collect sample 2+ 10:10 1035 pestert pump 2+ Pmw-4, getting water 25200 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. Geen up tresh, take GPS of Oall probes/wells. Continue to check on pump. 11:45 update KW, continue to develop PMW-4 4:00pm juniped any 4:15 Leave Site 6:15 Arrive at GSI Topuca office, start unloading 6:45 done unlos durg 12/7/23 AR Aug 12/1/23



| roject Name: | NA | Project Location: 17400 410 Rd, Neo | Acdress City III | GSI Project No: 22T2177.01 | GSI PM: KW | |
|--------------------|--|--|------------------|-------------------------------|-------------------------------|--|
| Daylight Petroleum | | | | | | |
| Borings | GPS Coordinates | Pushed (ft) | Plugged (ft) | Temp Casing (✓) | Date | |
| PMW-2GP | 37.42911 | - 10 | | | 12/4/23 | |
| PMW-46P | 27.42974 | 10 | | | 12/4/23 | |
| PMW-36P | 37.43000 295.062244 | 10 | | \checkmark | 12/4/25 | |
| pmw-IGP | 37.42911 295.662232 27.42974 -95.662232 37.43000 -95.662244 37.43000 -95.662244 37.42974 -95.662244 | 11 | | \checkmark | 12/4/23 12/4/23 12/4/23 | |
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| 1 602 | | | and the second se | 0 202. | / | |
| GSI Signature: | | | Date: | | | |
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| roject Name: | NA | Project Location: | Address Offen State | GSI Project No: | GSI PM: | |
|----------------|--|-------------------|---------------------|-----------------|--|--|
| Daylight Petro | | 17400 410 Rd, Nec | odesha, KS | 22T2177.01 | KW | |
| Wells | Well Finish | Drilled (ft) | Plugged (ft) | Developed (✓) | Date | |
| 0499-01 | Paved, Flustimount | 29.2 | nla | 1 | 01.01.19 | |
| PMW-1 | Concrete Fluchmourt Concrete | 140.0 | AN | | 12/5/2023 | |
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| pmw-3 | Flushmant Concrete Plushmant Concrete | 140.01 | NA | 1, | 12/5/2023 | |
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|-------------------------------------|-----------------------------------|-------------|--|--|---|
| Well Name | Inside | Total Dent | Static | | |
| PMW-2 | Diameter 21 | Total Depth | | Calculated Purge = ([Total Depth] - [Water Level]) × 2.78 = ([Total Depth] - [Water Level]) × 0.163 = ([A] - [X]) = ([A] - [X]) = ([Y] × 0.30) + [X] innimum Development = 5 + [V] gallons | Actual Purge |
| | | | | A= 140-127.47 x 2.78 = 54,8334 v= 37.7910 = 140-127.47 x 0.143= 2.04239 0.5+2.04739 [-34,8374-2.04239=32.7910] 3.38 5= 64.92+25=92 gallons | · 1.75gal |
| | | | | Barled dry twice - | 1.75 gr |
| ewn-l | ·2 " | 140 | 52.00 | $4 = 140 - 52 = 88 \cdot 2.78 = 244.64$ $4 = 140 - 52 = 88 \cdot 2.78 = 244.64$ $4 = 140 - 52 \cdot 6163 = 14.344$ 4 = 230.296 $4 = 3.4326 \cdot 5 = 34$ 4 = 7.164 + 70 = 34 | 1- 37 200 gel |
| | | | | '437 gallins | wi waterra |
| PMW-? | 2" | 140 | 115.20 | A=140-115.20.2.78= (8.944 V= 64.901 0.3 K= 140-115.2.9163= 4.0424 + X = 23.5147 Y= 65 A44-4.0424 = 4.9016 5= 117.571+ | N 35 gallor |
| | | | | 133 gallone | Air Lifted Dry |
| am N-4 | 21 | 140 | 19.13 | A=140-19.13.2.78 - 331.02 310.319 0.3+11 V= 140-19.13.0.143 = 19.702 112.59 5= 568 9=0. | 702 654 gzOli |
| (110) | | 110 | | = 334.02-19.702= 314.318 568 gal. | mont dry |
| | | | | | |
| | | | | e 5 | |
| ignature: Histo Lead: | the | | | Date: 10/4-12/7/2 | 7 |
| F | AR | | | 2 inch Wells | |
| | feet of wat ulus GPF mo | | 7.50 10.0 20.85 27.8 | 12.50 15.00 17.50 20.00 22.50 25.00 27.50 30.00 32.50 34.75 41.70 48.65 55.60 62.55 69.50 76.45 83.40 90.35 | 35.00 37.50 40.00 97.30 104.25 111.20 |
| annulus | minus casir | ng 13.09 | 19.63 26.1 | 32.71 39.26 45.80 52.34 58.88 65.43 71.97 78.51 85.05 | 91.60 98.14 104.68 |
| | <u>nulus "donu</u> PF (diamete | | 5.89 7.8 0.16 0.1 | 9.81 11.78 13.74 15.70 17.66 19.63 21.59 23.55 25.52 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 | 27.48 29.44 31.40 0.16 0.16 0.16 |
| total dev i total dev volur | n gallons (x ne (rounde | 5) 23.70 | 35.55 47.4 35.75 47.5 | 59.26 71.11 82.96 94.81 106.66 118.51 130.36 142.22 154.07 59.50 71.25 83.00 95.00 106.75 118.75 130.50 142.25 154.25 | 165.92 177.77 189.62 166.00 178.00 189.75 |
| Casing Diameter | X Gallons per Foot | Annulus GPF | | Development calculations | |
| 1" | 0.041 | | | A= Total Annulus Volume 100% A= (TD-SWL) x Annulus GPF | Table is for |
| 2" | 0.163 | 2.78 | | X= Casing Volume X = (TD- SWL) x Casing GPF | reference only. Calcuate volumes |
| 3" | 0.367 | | | Y=Annulus Volume minus Casing A - X | for each well. |
| <u>4"</u> 6" | 0.653 | 4.29 | | Dne Well Volume of Casing plus 30% of Annulus (Y x 0.30) + X Purge Volumes (one volume equals casing plus 30% annulus) | - |
| 8" | 2.611 | | t. | Sample 3 volumes | |
| Use Correct | Diameter for Calcula | ations | | Develop 5 volumes | |

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Rev. 2022

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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 INFORMATI | ON |
| Type of Work: | SOIL BORINGS |
| Explosives: | Ν |
| 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: | 200 |
| Map Twp: | 30S |
| Rng: | 16E |
| Sect-Qtr: Man Coord NW Late | 21-NW-NE,16-SW-SE 37.4337882 |
| Map Coord NW Lat: Lon: | -95.6655612 |
| SE Lat: | 37.4281767 |
| SE Lat. Lon: | -95.6612369 |
| Lon: | -75.0012507 |
| MEMBERG NOTIFIED | |

MEMBERS NOTIFIED

| | District | Company Name | Business Hrs Wet | oStatus |
|----------------|----------|--------------------------|-------------------------|--------------------------------------|
| | ATMIND01 | ATMOS ENERGY | 866-322-8667 | Not yet responded |
| | ATT301 | ATT DISTRIBUTION | 800-778-9140 | Not yet responded |
| | DARTCB01 | REP KANSAS GATHERING LLC | 2620-205-7226 | Not yet responded |
| | EVSKS1 | EVERGY | 785-249-1948 | Not yet responded |
| | WILNAT50 | SOUTHERN STAR CEN GAS | 800-324-9696 | Not yet responded |
| | WLSNRW04 | 4WILSON CO RWD #4 | 620-305-9014 | Does not participate in Ticket Check |
| Locate Polygon | | | | |

Legend:

Lat/Lon



| Engineering | | | | - | | Hydrasleeve Sampli |
|--------------------------|-------------|--------------------|--------------------------------|------------------------|--------------------|----------------------|
| Project Name: | | Project Location: | tion: | GSI Project No: | Field Lead: | GSI PM: |
| Daylight Petroleum | | 17400 410 | 17400 410 Rd, Neodesha, KS | 22T2177.01 | AR | KW |
| Well ID | Initial SWL | Total Depth | Oid Tag New Tag | Date/Time Installed | Date/Time Sampled | Notes/Repairs Needed |
| Z-MWJ | 129.34 | 129.34 140.0 | | | 9.05 | 139.00 |
| pmw-3 | 0.04 Sh.58 | 140.D | | 9:56 | | 139.00 85.00 |
| | 53.43 | e' Oh ⁱ | | 12/7/23 | | C0 59 |
| PMM-4 | SN | NS | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Signature: | N | | | | Date: 12/7/2023 | |
| QAVQC Procedures: De CON | 9 | meter u | SWL mater up Aleoniox/b1 runse | use | deducated HS ; | of twine, |
| - | / | 1 | L | | | |

Hydrasleeve Sampling Form

Rev. 2022



| | Ing Sciences Company | | | |
|--------------|--|--------------------------|-------------------|--------------|
| Project Nam | | tion: Rd, Neodesha, k | | GSIPM: KW |
| | : Departure Time: | Non- GSI Persone | | INVV |
| Weather: | | | | |
| Timoci | Notes: Add a 1 1 1 | | | |
| Times: | | | received only had | |
| | unpreserved bottles, gral | | | |
| | 09:50 To site, 17:00 | | | |
| | but not mough to con | | | |
| | for a while and was | | | |
| | was DRY, no sample. | Pmw-40 | from ~ 139', | |
| | Mas DRY, no sample. PMW-41 from ~ 851 | , 19ml-4 | 5 from ~ 2 | 21 |
| | PMW-3GP Was DRY | | | |
| | had nater & Sampled. | | | 280 |
| | with bentonite, Pits to | | | Sare |
| | pictures of plaged Pr | | | |
| | 15:40 Back of offi | | | |
| | shipped off - | \ | | |
| | | | | |
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| | | | | |
| ield Lead: | MB | | | |
| iignature: 🏑 | Monto Bor | | Date: 17.18.73 | |
| / | | | | |

| Project Name: | Project Location: | a . | Page of | GSI Project No: | GSI Techniclan: | | GSI PM: |
|---|----------------------------|--------------------------|-----------------------------|--------------------------------|------------------------------------|-------------------------------|--------------------------|
| Davlicht Dotroloum | 110 140 140 PC | 0X - 4 | | | - | | |
| | 1/400 410 Kd, Neodesha, KS | desna, No | | 10.1112182 | MB | | 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 | | l |) | | | | |
| KDHE Old Tag Number |) | 1 | 1 | | | | |
| KDHE New Tag Number | 1 | l | } | | | | |
| Depth to Product |) | ł | 1 | | | | |
| Depth to Ground Water 8, 55 | 20 | DRY | DRY | | | | |
| Total Well Depth 12.25 | 12.25 | | } | | | | |
| Calculated Purge | | (| } | | | | |
| Actual Purge | | (| 1 | | | | |
| Depth to Ground Water (prior to sample) |] | (| 5 | | | | |
| (2 hours for stow rachargo) | Fast / Slow / Furgure bry | 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 /2:50 | 11:30 | (| 1 | | | | |
| Sample Observations | 8 | | | | | | |
| | Clear / Cloudy | Clear / Cloudy | Clear / Cloudy | Clear / Cloudy | Clear / Cloudy | Clear / Cloudy | Clear / Cloudy |
| Pungency New / Slight / Strend | Non / Slight / Strong | None / Slight / Strong | None / Slight / Strong | None / Slight / Strong | None / Slight / Strong | None / Slight / Strong | None / Slight / Strong |
| × | N / A | A / N | V / N | Clear / Sugnuy / Heavy | Clear / Slightly / Heavy | Clear / Siightly / Heavy | Clear / Slightly / Heavy |
| | | | Repairs, check | Repairs, checked if necessary. | | | |
| | - See Notes | - See Notes | - See Notes | - See Notes | - See Notes | - See Notes | - See Notes |
| | - See Notes | - See Notes | - See Notes | - See Notes | - See Notes | 🗖 - See Notes | C - See Notes |
| | - See Notes | - See Notes | - See Notes | 🔲 - See Notes | 🔲 - See Notes | 🗖 - See Notes | - See Notes |
| Phine Domocod on Missing L - See Notes | - See Notes | L - See Notes | L - See Notes | - See Notes | - See Notes | - See Notes | - See Notes |
| | C - See Notes | - See Notes | - See Notes | - See Notes | - See Notes | - See Notes | - See Notes |
| - See Notes | - See Notes | | - See Notes | - See Notes | O /OC Dropoducoo: | See Notes | - See Notes |
| Decontamination Procedures: Alconox Detergent & | DI Water | 8 | Bailers / Line Replaced: | л / Y | WAVE Procedures: | | |
| e-line, metal detecto | r, toolkit | Numbe | Number of Bailers Replaced: | | Duplics | | |
| Non-GSI Personnel: | | | Weather. | | Duplica Rinsate from water time | 5%a) DC | |
| Technician Signature: | | | Date: | 16.18.03 | ri ½]- | | |

Technician Signature: </

Rev. 2022

Engineering

Hydrasleeve Sampling Form

| Project Name: | | Project Location: | ion: | GSI Project No: | Field Lead: | GSI PM: | |
|--|-------------|-------------------|----------------------------|------------------------|-----------------------------------|--|-----|
| Daylight Petroleum | | 17400 410 F | 17400 410 Rd, Neodesha, KS | 23T2177.01 | MB | KW | |
| Mell ID | Initial SWL | Total Depth | Old Tag New Tag | Date/Time Installed | Date/Time Sampled | Notes/Repairs Needed | |
| PMW-4 | 19.35 | | NA 0604091 | 2W | 5-12-201 7-12-13 13-12-13-1 | Shallow: 12:30 Interned at: 12:15 Deep: 12:00 | :/2 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | - |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Signature: | al C | S | | | Date: /2.18.23 | 23 | |
| QA/QC Procedures: Dountaine from 11/1/12 | om mo | | | | | | |

74 14



| Project Name: | NA | Project Location: 17400 410 Rd, Net | Address City | GSI Project No: 22T2177.01 | GSI PM: KW |
|------------------------------|---|--|-----------------|-------------------------------|--|
| Daylight Petroleum | GPS Coordinates | Pushed (ft) | Plugged (ft) | Temp Casing (*) | Date |
| Borings PMW-2GP | 37,42911 | 10 | . 1839. r. firk | \checkmark | and the second s |
| PMW-46P | 27.42974 | 10 | | 1 | 12/4/23 |
| pmw-36P | 37.43000 295.662244 | 10 | | | |
| pmw-IGP | 37.42911 -95.662232 37.42974 -95.661232 37.43000 -95.66244 37.43000 -95.66244 37.42974 -95.66244 | - 11 | | \checkmark | 12/4/75 |
| | | _ | | | |
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| | | | | | |
| | | | | | |
| Signature: AM Field Lead: | D- | | | Date: 12/4/0 | 3 |

t,



Attachment 4: Photographs





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.

Entitude: 37.42904 Levation: 260.4946 ma Accuracy: 267.4976 ma Accuracy: 267.4976 ma Accuracy: 267.4976 ma





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.







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.







Site:Daylight Petroleum

Neodesha, KS

Notes

PMW-2GP tem porary well

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-4GP tem porary well.









Site:Daylight Petroleum

Neodesha, KS

Notes

Probing PMW-3GP

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-lGP temporary well next to location of PMW-lbeing drilled.

言語 Latitude: 37.429596 Longitude: -95.662832 Elevation: 267.17±25 m Accuracy: 13.6 m Time: 12-04-2023 13:00



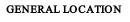


Site:Daylight Petroleum

Neodesha, KS

Notes

Typical reddish brown sand and sandy shale in shallower depths



Site: Daylight Petroleum

Neodesha, KS

Notes

Darker gray sandy shale at intermediate depths.









Site:Daylight Petroleum

Neodesha, KS

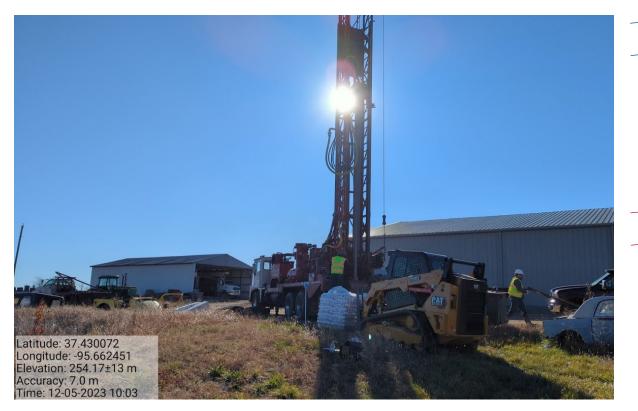
Notes

Coal seam encountered at 55' in PMW-2



© GSI ENGINEERING, LLC





Site:Daylight Petroleum

Neodesha, KS

Notes

PMW-3 being drilled next to PMW-3GP

GENERAL LOCATION

Site:Daylight Petroleum

Neodesha, KS

Notes

P M W - 4







Site:Daylight Petroleum

Neodesha, KS

Notes

Developing PMW-1

GENERAL LOCATION

Site:Daylight Petroleum

Neodesha, KS

Notes

PMW-2 completion.







Site:Daylight Petroleum

Neodesha, KS

Notes

PMW-3 completion.

GENERAL LOCATION

Site: Daylight Petroleum

Neodesha, KS

Notes

PMW-1completion.







Site: Daylight Petroleum

Neodesha, KS

Notes

Soil thin spread onsite.



Attachment 5: Laboratory Analytical Reports



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,

Astantos m. Wilson

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

Enclosures





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



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 |



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



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-2 139' | Lab ID: 6044 | 43738001 | Collected: 12/07/2 | 3 09:05 | Received: 12 | 2/08/23 16:00 | Matrix: Water | |
|-------------------------|-----------------------------------|----------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytica | | | | | | | |
| Chloride | 416 | mg/L | 50.0 | 50 | | 12/21/23 00:30 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-3 85' | Lab ID: 6044 | 3738002 | Collected: 12/07/2 | 3 10:10 | Received: 12 | 2/08/23 16:00 | Matrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 60.0 | mg/L | 20.0 | 20 | | 12/19/23 16:11 | 1 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-3 139' | Lab ID: 6044 | 13738003 | Collected: 12/07/2 | 3 10:00 | Received: 12 | 2/08/23 16:00 | Matrix: Water | |
|-------------------------|------------------------------------|----------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 262 | mg/L | 20.0 | 20 | | 12/19/23 16:23 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-1 85' | Lab ID: 604 | 43738004 | Collected: 12/07/2 | 3 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 Meth Pace Analytica | | | | | | | |
| Chloride | 34.9 | mg/L | 5.0 | 5 | | 12/21/23 00:42 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-1 139' | Lab ID: 6044 | 3738005 | Collected: 12/07/2 | 3 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 Meth Pace Analytica | | | | | | | |
| Chloride | 848 | mg/L | 100 | 100 | | 12/21/23 00:54 | 16887-00-6 | |



QUALITY CONTROL DATA

| Pace Project No.: 60443738 | | | | | | | | | | | |
|-------------------------------|---------------------|----------------|-------------|--------------------|------------|--------------|------------|------------|-------|-----|------|
| QC Batch: 877650 | | Analys | sis Method | d: | EPA 300.0 | | | | | | |
| QC Batch Method: EPA 300.0 | | Analys | sis Descrij | ption: | 300.0 IC A | nions | | | | | |
| | | Labora | atory: | | Pace Analy | tical Servic | es - Kansa | s City | | | |
| Associated Lab Samples: 60443 | 3738001, 6044373800 | 2, 60443738 | 8003, 604 | 43738004, | 60443738 | 005 | | | | | |
| METHOD BLANK: 3476253 | | Ν | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: 60443 | 3738001, 6044373800 | 2, 60443738 | | | 60443738 | 005 | | | | | |
| Parameter | Units | Blank Resul | | Reporting Limit | Ana | lyzed | Qualifier | s | | | |
| Chloride | mg/L | | ND | 1. | | 23 15:25 | Qualifier | | | | |
| | | | | | | | | | | | |
| METHOD BLANK: 3477927 | | Ν | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: 60443 | 3738001, 6044373800 | 2, 60443738 | 8003, 604 | 43738004, | 60443738 | 005 | | | | | |
| _ | | Blank | | Reporting | | | | | | | |
| Parameter | Units | Resu | lt | Limit | Ana | lyzed | Qualifier | S | | | |
| Chloride | mg/L | | ND | 1. | 0 12/20/2 | 23 23:28 | | | | | |
| LABORATORY CONTROL SAMPL | E: 3476254 | | | | | | | | | | |
| | 2. 0470204 | Spike | LC | S | LCS | % R | ec | | | | |
| Parameter | Units | Conc. | Res | sult | % Rec | Lim | its (| Qualifiers | | | |
| Chloride | mg/L | 5 | 5 | 4.7 | 9 | 95 | 90-110 | | _ | | |
| LABORATORY CONTROL SAMPL | E: 3477928 | | | | | | | | | | |
| | | Spike | LC | S | LCS | % R | ec | | | | |
| Parameter | Units | Conc. | Res | sult | % Rec | Lim | its (| Qualifiers | | | |
| Chloride | mg/L | 5 | 5 | 4.8 | 9 | 96 | 90-110 | | _ | | |
| MATRIX SPIKE & MATRIX SPIKE | DUPLICATE: 3476 | 255 | | 3476256 | | | | | | | |
| WATKIN OF INE & WATKIN OPINE | DUFLICATE. 34/0 | Zəə MS | MSD | 5410230 | , | | | | | | |
| | 60443252002 | Spike | Spike | MS | MSD | MS | MSD | % Rec | | Max | |
| Parameter | Units Result | Conc. | Conc. | Result | Result | % Rec | % Rec | Limits | RPD | RPD | Qual |
| Chloride | mg/L 22.1 | 25 | 25 | 47.7 | 47.4 | 102 | 101 | 80-120 | 1 | 15 | |
| SAMPLE DUPLICATE: 3476257 | | | | | | | | | | | |
| | | 60443252 | 2002 | Dup | | | Max | | | | |
| Parameter | Units | Resu | | Result | RF | D | RPD | Quali | fiers | | |
| Chloride | mg/L | | 22.1 | 21. | | 1 | 1: | | | | |

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.



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.



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 | | |

| | | WO#:60443738 |
|--|------------------------------|--|
| Pace DC#_Title: ENV-FRM | -LENE-0009_Samp | ole Co 50443738 |
| AMALYHICAL SERVICES Revision: 2 Eff | fective Date: 01/12/20 | 022 Issued By: Lenexa |
| Client Name: UE9_091 Topeka | | |
| Courier: FedEx 🗆 UPS 🗆 VIA 🗆 Clay 🗆 | PEX 🗆 ECI 🗆 | Pace 🗗 Xroads 🗆 Client 🗆 Other 🗆 |
| Tracking #: Pa | ace Shipping Label Use | d? Yes □ No I |
| Custody Seal on Cooler/Box Present: Yes 🕼 No 🗆 | Seals intact: Yes 🖆 | No 🗆 |
| Packing Material: Bubble Wrap D Bubble Bags | | None 🗗 Other 🗆 |
| . ~ ~ | of Ice: MeD Blue No | |
| Cooler Temperature (°C): As-read Corr. Fac | ctor Correc | ted <u>1,4</u> Date and initials or person examining contents: |
| Temperature should be above freezing to 6°C | | AF 12/12 |
| Chain of Custody present: | | |
| Chain of Custody relinquished: | Ves No N/A | |
| Samples arrived within holding time: | | |
| Short Hold Time analyses (<72hr): | □Yes <mark>12</mark> No □N/A | |
| Rush Turn Around Time requested: | □Yes ⊡No □N/A | |
| Sufficient volume: | | |
| Correct containers used: | Dres □No □N/A | |
| 146/2 | | |
| Pace containers used: | . / | |
| Containers intact: | | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | Yes No DATA | |
| Filtered volume received for dissolved tests? | □Yes □No □ N/A | |
| Sample labels match COC: Date / time / ID / analyses | | |
| Samples contain multiple phases? Matrix: WT | | |
| Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT Cyanide water sample checks: | □Yes □No 19447A | List sample IDs, volumes, lot #'s of preservative and the date/time added. |
| Lead acetate strip turns dark? (Record only) | □Yes □No | |
| Potassium iodide test strip turns blue/purple? (Preserve) | □Yes □No | |
| Trip Blank present: | | |
| Headspace in VOA vials (>6mm): | | |
| Samples from USDA Regulated Area: State: | | |
| Additional labels attached to 5035A / TX1005 vials in the field | | |
| Client Notification/ Resolution: Copy COC | | Field Data Required? Y / N |
| Person Contacted: Date/ | /Time: | |
| Comments/ Resolution: | | |
| Project Manager Review: | Date | |

| (Pace* | eace - uocation requesteo (Litty/State): Pace Analytical Xansas 9608 Loiret Bivd. Lenexa, KS 66219 | | | CHAIN-OF-CI Chain-of-Cu | USTODY stody is a LEGA | CHAIN-OF-CUSTODY Analytical Request Document Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields | tument | | LAB USE ONLY- Affix Workorder/Login Label Here | orkorder/Login Label | Hars | |
|---|--|----------------------------|------------|--|---------------------------|---|-------------------|---------------------------------------|--|-------------------------|--|----------|
| Company Name: | UES_GSI Topeka | | | Contact/Report To: | Alexandra Richards | chards | | | | | | |
| Street Address: | 2900 NW Button Rd, Ste. A-7, Topeka, KS 66618 | 518 | | Phone #: | 785-409-1320 | 0 | | | 642 | | | - |
| | | | | E-Mail: | arichards@t | arichards@teamues.com | | | Scan QR Code for instructions | instructions | | |
| | | | | Cc E-Mail: | kwheeler@t | kwheeler@teamues.com | | | | | | - |
| Project Name: | 23T2177.01 Davlicht Petroleum | | | Invoice To: | Accounts Payable | yable | | | | | | - |
| | | | | Invoice E-Mail: | ap@gsinetwork.com | ork.com | | S | Specify Container Size ** | **Con | **Container Size: (1) 1L, (2) 500mL, (3) 250mL (4) 125mL (5) 100mL (6) 40mL vial (7) 5nCore (e) | a |
| Site Collection Info/Fa | Site Collection Info/Facility ID (as applicable): | | | Purchase Order # (if | UES Rates | | | I I I I I I I I I I I I I I I I I I I | dentify Container Preservative Type*** | Terrad | TerraCore, (9) Other *** Precentative Tunes: (1) None (2) HNO2 (2) | T |
| | | | | | | | | | | H2SO4 NaHSC | H2SO4, (4) HCl, (5) NaOH, (6) Zh Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) | 10) |
| Time Zone Collected: | []AK []PT []MT [X]CT [| | | County / State origin of sample(s): | f sample(s): | | | | Analysis Kequested | MeoH | MeOH, (11) Other Proj. Mgr: | Т |
| ples: | | Regulatory | Program | Regulatory Program (DW, RCRA, etc.) as applicable: | plicable: | | | Ĩ | | <u>A</u> | AcctNum / Client ID: | |
| [] Level II | [] Level III [] Level IV | | Rush (| Rush (Pre-approval required): | :(p; | DW PWSID # or WW Permit # as applicable | cable: | | | AlnO | | |
| | | [] 2 Day | []3di | []2 Day []3 day []5 day [] Other_ | ler | | | | | | | |
| [] Other | | Date Results Requested: | d: d: | | | Field Filtered (if applicable): [] Yes | Yes [] No | | | | :mplate: | dwes |
| * Matrix Codes (Insert (V), Other (OT), Surfac | * Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Gaulk | d Water (G | tW), Wast | te Water (WW), Produc | tt (P), Soil/Solic | S | oassay (B), Vapor | Iroide | | H <u>E</u> | Prelog / Bottle Ord, ID: | |
| | Customer Sample ID | Matrix * Comp / | Comp / | Collected | Start) | Composite End | ž | _ | | | | |
| | | | Grab | Date Time | Time | Date Time CL2 | Plastic Glass | | | | Sample Comment | - |
| PMW-2 139' | | > | U | 12/7/2023 | 9:05 | | F | 2 | | 9 | 041373B | T |
| PMW-3 85' | | > | σ | 12/7/2023 | 10:10 | | H | | | | | 1 |
| PMW-3 139' | | 3 | σ | 12/7/2023 | 10:00 | | FT | | | | | |
| PMW-1 85' | | 3 | υ | 12/7/2023 | 11:07 | | F | | | | | 1 |
| PMW-1 139' | | 3 | σ | 12/7/2023 | 10:57 | | F | | | | | T |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | |
| Customer Remarks / | customer Remarks / Special Conditions / Possible Hazards: | | 1 | | | Collected By: Printed Name: | · Rich rude | | Additional Instructions from Pace®: | | | T |
| | | | | | | Te | | # Coolers: | Thermometer ID: Corre | Correction Factor (°C): | Obs. Temp. (°C) Corrected Temp. (°C) | n |
| Belingurhed by/Commit | an Sol As Commences | S | Date/Ti | 18/23 | 300 | Received by/Company: (Signature) | | Parel - | ATT 1219 161 | 06 Tracking Number | er: | 1 |
| the net 14 | (a)fuernes | | Date/1 | Time: | | Received by/Compan y: (S ignature) | | Date/fime | /ime: | Delivered by: | [] In- Person [] Courier | - |
| Heinquiched by/Company: (Signature) | y: (Signature) | | Date/Time: | Time: | | Received by/Company: (Signature) | | Date/ | Date/Time: | |] FedEX [] UPS [] Other | |
| Reinguished by/Company: (Signature) | yr (Signature) | | Date/Time: | Time: | | Received by/Company: (Signature) | | Date/ | Date/Time: | Page: | of | r – |
| Submitting a sample | 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/ | dgment ar | nd accep | tance of the Pace [®] T | erms and Col | iditions found at https://www.pacelab | os.com/resource | -library/resource/pace-terms | and-conditions/ | ENV-FRM-C | ENV-FRM-CORQ-0019_v01_082123 © | ĩ |

| 2 | Other Other Other Other D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D | | Misc. | Wipe/Swab 120ml Coliform Na Thiosulfate | Ziploc Baq | Air Filter | Air Cassettes | Summa Can | | | Matrix | | Water | Non-animalis Linuid | DII | Wipe | Drinking Water | | | |
|--|---|-----------------|-------------------------|--|----------------------|--|------------------------|------------------------|-------------------------------------|---------------------------|-----------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|---------------------------|--------------------|---------------------|--------------------|
| 2428-1 | SE48 | | | l SP51 | ZPLC | ÅΓ | | | | | | | N | NAI | | WP | DW | | | |
| 321 | Bb3E | | | | | | | | | | | | ed | | | | | | | |
| 2 | ВРЗИ | | | | | | | | | tic | a a | | 250mL HNO3 plastic - field filtered | cit. | 2 | 0 | Ę | | | |
| - | ВР1И | | | | | astic | ate | tic . | Istic | 500mL unpreserved plastic | 500mL NaOH, Zn Acetate | : ti | tic - fie | 250ml Innreened plastic | istic | 250mL NaOH, Zn Acetate | 125mL unpreserved plastic | tic | 125mL H2SO4 plastic | 1 |
| # v | | | Plastic | lastic astic | olastic | 1L unpreserved plastic | 500ml NAOH plastic | 500mL HNO3 plastic | 500mL H2SO4 plastic | reserve | NH, Zn | 250mL NaOH plastic | 250mL HNO3 plastic | spid cr | 250mL H2SO4 plastic | JH, Zn | eserve | 125mL HNO3 plastic | 125mL H2SO4 plastic | |
| Profile # | BP2U | | B | 1L NAOH plastic 1L HNO3 plastic | 1L H2SO4 plastic | prese | | | L H2S | IL unpi | IL NaC | IL NaC | | | I H2S | IL NaC | IL unpr | IL HNC | IL H2S | |
| îĨĨ | 0148 | | 1 | 1 1 1 1 1 1 | 1L H | 11 ur | 500m | 500r | 500rr | 500rr | 500m | 250m | 2500 | 250m | 250m | 250m | 125rr | 125r | 125r 16oz | |
| | M@DN | | | | | | | | | | | | | | | | | _ | = | , |
| | Mekn | | | BP1N | BP1S | BP1U | BP 12 | BP2N | BP2S | BP2U | BP2Z | BP3C | BP3F BP3N | BP311 | BP3S | BP3Z | BP4U | BP4N | BP4S WPDU | |
| | 1GEU | | | | | | | | glass | | | | | | | | | | | |
| | VG2D | | | | | wide | 201 | | 1L Na Thiosulfate clear/amber glass | | SS | ass | ass | 200 | SS | ISS | | | | |
| | ₩94U | | | | | amber wide | 1L HCI amber glass | glass | clear/a | 1liter unpres amber glass | 500mL HNO3 amber glass | 500mL H2SO4 amber glass | 500mL HZ504 amber glass 500ml unnres amher risse | 250mL unpres amber glass | 125mL unpres amber glass | 100mL unpres amber glass | 5 | | | |
| S S | SEDA | | | | oil jar | erved a | er das | amber | sulfate | s ambe | 03 amt | 04 ar | Tes an | es am | es am | es am | | | | |
| leu . | Vesn | | | 402 clear soil jar | 2oz clear soil jar | 4oz unpreserved | 1L HCI amber diass | 1L H2SO4 amber glass | a Thios | unpre: | IL HN | IL H2S | | | | IL unpr | | | | |
| 552 Topeka aht Vetroleum | Negi | | 001 | 402 G | 20Z (| 402 L | | 1 | 1L N | 1liter | 5001 | 500 | | 250n | 125n | 100n | | | | - |
| de d | нгөа | | - | | 2 | _ _ | | 0 | | | _ | | | | | | | | | k |
| 4 L | 861U | | Glass | WGFU | WG2U | JGFU | AG1H | AG1S | AG1T | AG1U | AG2N | AG2S | AG211 | AG3U | AG4U | AG5U | | | | 0 |
| gh G. | DG9B | | Ű | | | | | | | | | | | | | | | | | 1 |
| S S | W690 | | | | | | | q | | | vial | | | SS | E | | | | 93 | - |
| D C | n690 | | loin a | 40mL HCI amber voa via | vial | 40mL TSP amber vial 40mL H2SO4 amber vial | 40mL Na Thio amber via | 40mL amber unpreserved | 15 | ar vial | 40mL unpreserved clear vial | glass | glass | 250mL Unpres Clear glass | | | | | | 10000100 |
| | ∩6Ð∧ | | 40ml hisulfata daar via | mber / | 40mL MeOH clear vial | 40mL TSP amber vial 40mL H2SO4 amber | nio am | r unpre | 40mL HCI clear vial | 40mL Na Thio. clear vial | served | 1liter H2SO4 clear glass | 250mL HCL Clear plass | res Cle | oil jar | | | | | |
| ve Date: Client: Site: | DG90 | | hieuff | HCIa | MeO | H2SP 8 | Na Tr | ambe | HCIO | Na Tr | unpre | HZSO | | L Unpi | 16oz clear soil jar | | | | | |
| Effect | DC9H | | 40ml | 40mL | 40mL | 40mL | 40m | 40mL | 40m | 40mL | 40mL | 1 liter | 250m | 250m | 16oz | | | | | Imber: |
| Revision: 3 Effective Date: Issued by: Lenexa Client: ULES | Н6ЭЛ | | | | _ | | | | | | | | | | 5 | | | | | Work Order Number: |
| Ke | xham Zana and Andrews | Container Codes | DG9R | DG9H | DG9M | D690 | DG9T | DG9U | VG9H | VG9T | VG9U | | BG3H | BG3U | WGDU | | | | | Work C |
| | COC Line Item 1 5 5 6 6 8 8 8 9 9 9 10 11 | aine | | | | | | | | | | | | | | | | | | |

941414AD

Qualtrax Document ID: 30422



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,

Astantos m. Wilson

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

Enclosures





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



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 |



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



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-2GP | Lab ID: 6044 | 4220001 | Collected: 12/18/2 | 3 11:30 | Received: 12 | /19/23 08:45 N | Aatrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 260 | mg/L | 20.0 | 20 | | 12/21/23 20:04 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-1GP | Lab ID: 6044 | 4220002 | Collected: 12/18/2 | 23 12:50 | Received: 12 | 2/19/23 08:45 M | Matrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|----------|--------------|-----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 71.9 | mg/L | 20.0 | 20 | | 12/21/23 20:16 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-4D | Lab ID: 6044 | 4220003 | Collected: 12/18/2 | 3 12:00 | Received: 12 | 2/19/23 08:45 | Matrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 546 | mg/L | 100 | 100 | | 12/22/23 14:21 | 1 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-4I | Lab ID: 604 | 44220004 | Collected: 12/18/2 | 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 Met Pace Analytica | | | | | | | |
| Chloride | 680 | mg/L | 100 | 100 | | 12/22/23 14:33 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-4S | Lab ID: 6044 | 14220005 | Collected: 12/18/2 | 23 12:30 | Received: 12 | 2/19/23 08:45 M | 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 | | | | | | |



QUALITY CONTROL DATA

| Project: 23T217 Pace Project No.: 604442 | | GHT PETROLEU | M | | | | | | | | | |
|---|-----------|-----------------------|----------------|------------------------|--------------------|----------------------------|-------------|--------------|-----------------|------|------------|-------|
| QC Batch: 87800 |)3 | | Anal | ysis Metho | d: | EPA 300.0 | | | | | | |
| QC Batch Method: EPA 3 | 800.0 | | Anal | ysis Descri | ption: | 300.0 IC Ani | ons | | | | | |
| Associated Lab Samples: | 604442200 | 001, 6044422000 | | oratory: 20003, 604 | | Pace Analyti 6044422000 | | es - Kansas | s City | | | |
| METHOD BLANK: 347787 | 2 | | | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: | 604442200 | 001, 6044422000 | 2, 6044422 | 20003, 604 | 44220004, | 6044422000 |)5 | | | | | |
| Parameter | | Units | Bla Res | | Reporting Limit | Analy | zed | Qualifiers | 6 | | | |
| Chloride | | mg/L | | ND | 1 | .0 12/21/23 | 3 17:36 | | | | | |
| METHOD BLANK: 347871 | 6 | | | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: | 604442200 | 001, 6044422000 | 2, 6044422 | 20003, 604 | 44220004, | 6044422000 |)5 | | | | | |
| | | | Bla | | Reporting | | | | | | | |
| Parameter | | Units | Res | ult | Limit | Analy | zed | Qualifiers | 6 | | | |
| Chloride | | mg/L | | ND | 1 | .0 12/22/23 | 3 13:11 | | | | | |
| LABORATORY CONTROL | SAMPLE: | 3477873 | | | | | | | | | | |
| Parameter | | | | LC Res | | LCS % Rec | % R Limi | | Qualifiers | | | |
| Chloride | | mg/L | | 5 | 4.9 | 97 | | 90-110 | | _ | | |
| LABORATORY CONTROL S | SAMPLE: | 3478717 | | | | | | | | | | |
| Parameter | | Units | Spike Conc. | LC Res | | LCS % Rec | % R Limi | | Qualifiers | | | |
| Chloride | | mg/L | | 5 | 4.8 | 95 | 5 9 | 90-110 | | | | |
| MATRIX SPIKE & MATRIX | SPIKE DUP | LICATE: 3477 | 874 MS | MSD | 347787 | 5 | | | | | | |
| Parameter | Units | 60444191001 Result | Spike Conc. | 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 | | |
| MATRIX SPIKE SAMPLE: | | 3477876 | | | | | | | | | | |
| Parameter | | Units | | 8752002 esult | Spike Conc. | MS Result | | MS 5 Rec | % Rec Limits | | Qualit | fiers |
| Chloride | | mg/L | | 179 | | | | | | -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

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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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:23T2177.01 DAYLIGHT PETROLEUMPace 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 | | |

| | | | | | | | WO#:604 | 4422 | 20 |
|---|--|---|-----------------|---------------------|--------------------|----------------|--|------------------|---------|
| | Pace | DC#_Title: E | NV-FRM-I | _ENE-000 |)9_Sam | ple Co | 60444220 | | |
| | I AMALYTICAL SERVICES | Revision: 2 | Effe | ctive Date: | 01/12/2 | 022 | Issued By: Lenexa | | |
| Client Nan | ne: Univer | sal Eng | GSI | | | | | | |
| Courier: Tracking #: | FedEx UPS | 0 VIA 0 8925259 | ~ | PEX □ e Shipping | ECI □ Label Use | Pace ed? Ye | | Other 🗆 | |
| Custody Sea | I on Cooler/Box | Present: Yes | No 🗆 | Seals int | act: Yes I | U No | 0 🗆 🧹 | | |
| Packing Mate | | | ubble Bags [| \sim | Foam 🗆 | | None 🗂 Other 🗆 | | |
| Thermomete | | | | Ice: Wet | | | Date and i | nitials of perso | 0.0 |
| Cooler Temp | () | | _Corr. Fact | or -0.3 | Correc | ted U | examining | | |
| Temperature sh | ould be above free: | zing to 6°C | | - | | r | 10F | 1419 | |
| Chain of Cust | ody present: | | | Dres 🗆 | No 🗆 N/A | | | | |
| Chain of Cust | ody relinquished: | | | Ves 🗆 | No 🗆 N/A | | | | |
| Samples arriv | ed within holding | time: | | thres 🗆 | No 🗆 N/A | | | | |
| Short Hold Ti | ime analyses (<7 | '2hr): | | 🗆 Yes 🚺 | | | | | |
| Rush Turn A | round Time requ | ested: | | 🗆 Yes 🕒 | | | | | |
| Sufficient volu | me: | | | Des 🗆 | No 🗆 N/A | | | | |
| Correct contai | ners used: | | | | No 🗆 N/A | | | | |
| Pace containe | ers used: | | | Yes D | No 🗆 N/A | | | | |
| Containers int | act: | | | Yes 🗆 | No 🗆 N/A | | | | |
| Unpreserved : | 5035A / TX1005/1 | 006 soils frozen ir | 48hrs? | □Yes □ | No CANA | | | | |
| Filtered volum | e received for dis | solved tests? | | □Yes □ | | | | | |
| Sample labels | match COC: Dat | e / time / ID / analy | /ses | Gres D | No 🗆 N/A | | | | |
| Samples conta | ain multiple phase | es? Matrix: | WT | 🗆 Yes 🛃 | | | | | |
| (HNO ₃ , H ₂ SO ₄ , I (Exceptions: VC | HCI<2; NaOH>9 Su DA, Micro, O&G, KS | vation ìn compliand lfide, NaOH>10 Cya s TPH, OK-DRO) | | | NO UN TA | | ample IDs, volumes, lot #'s of ime added. | preservative | and the |
| · | sample checks: strip turns dark? (I | Record only) | | □Yes □I | No | | | | |
| | | blue/purple? (Pre | serve) | □Yes □I | No | | | | |
| Trip Blank pre | sent: | | | □Yes □I | No BNA | | | | |
| Headspace in | VOA vials (>6mr | n): | | □Yes □I | No DATA | | | | |
| Samples from | USDA Regulated | Area: State: | | □Yes □I | | | | | |
| | | 35A / TX1005 vials | s in the field? | | | | | | |
| | ation/ Resolution | | Copy COC to | | / N | F | ield Data Required? Y / N | 1 | |
| Person Contac | cted: | | Date/T | ime: | | | | | |
| Comments/ Re | esolution: | | | | | | | | |
| Project Manag | er Review: | | | | Dat | e: | | | |

| Pace [®] Location Requested (City/State): Pace Analytical Kansas 9608 Loiret Blvd., Lenexa, KS 66219 | | CHAIN-OF-CUS | 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 | korder/Login Label Here |
|---|---|--|--|--|---|
| Company Name: Universal Engineering - dba GSI_Topeka Street Address: 2900 NW Button Rd, Topeka, KS 66618 | | Contact/Report To: Ale Phone #: (78 E-Mail: arii Cc E-Mail: | Alexandra (Alex) Richards (785)409-1320 arichards@gsinetwork.com | E Code for instructions | structions |
| Customer Project #: Project Name: 23T2177 01 Daylight Petroleum | | | Alexandra (Alex) Richards arichards@gsinetwork.com | Specify Container Size ** | **Container Size: (1) 11, (2) 500mL (3) 250mL (4) 125mL (5) 100mL (6) 40mL vial, (7) EnCore, (8) TerraGore, (9) Other |
| Site Collection Info/Facility ID (as applicable): | | Purchase Order # (if applicable): Quote #: | | Identify Container Preservative Type*** | **** Preservative Types: (1) None, (2) HNO3, (3) H2204, (4) HOL (5) Actends, (7) MAROA, (3) Sod. Thiosuffate, (9) Ascorbic acid, (10) MAROA, (11) Other |
| lected: [] AK [] PT bles: |] ET Regulatory Progra |] ET County / State origin of sample(s): Regulatory Program (DW, RCRA, etc.) as applicable: | mple(s): Kansas able: | | Proj. Mer: Heather Wilson AcctNum / Client ID: |
| []Level II []Level II []Level IV []EQUIS | Rus []2 Day []3 | Rush (Pre-approval required): []2 Day []3 day [] Other_ | DW PWSID # or WW Permit # as applicable: | | ormance ide |
| 1 Other. * Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Grou | Date Results Requested: und Water (GW), W | /aste Water (WW), Product (P | [] Other Ereld Filtered (if applicable): [] Yes [] No * Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WV), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), | | Profile / Template: 15928 Prelog / Bottle Ord ID: |
| Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk Customer Sample ID | Matrix * Comp / Grab | Collected (or Composite Start) | True Composite End Res. Number & Type of Composite End Composite End Composite End Composite End Composite End Composite Compo | 100°0 CVI | Ez 3032416 Sample Comment |
| PMM-26P | 6W 6 | 12.14.23 | 11:30 Value IIIC 1930 | | 020111109 |
| DMM-IGD | 6W 6 | 12.18.23/2:50 | 2:50 2 | X | |
| PIMM- 4D | GW G | 12.18.23 12:00 | | | |
| DMN-4I | 6W 6 | 12.18.23 2:15 | 2:15 I | X | |
| pmm-45 | 6W 6 | 12.18.2312:30 | 2:30 I | × | |
| | | | | | |
| | | | | | |
| | | | | | |
| Customer Remarks / Special Conditions / Possible Hazards: | | | Collected By: Monte Brcon | Additional Instructions from Pace®: | |
| / | 18 | | 11 | TJ 9 & | Correction Factor ("C): Obs Temp. ("C) Corrected Temp. ("C) |
| and planet | | Date/Time: 12.18.25 15. | 30 Received by Company: 18 agure | 1215,23 O&Y | Tracking Number: |
| | <u> </u> | ate/ lime: | Received by/Company: (Signature) | Date/Time: | Delivered by: [] In- Person [] Courier |
| Binquished by/Company: (Signature) | Ó | Date/Time: | Received by/Company: (Signature) | Date/Time: | [] FedEX [] UPS [] Other |
| Refinquished by/Company: (Signature) J | 0 | Date/Time: | Received by/Company: (Signature) | Date/Time: | Page: 1 of 1 |
| submitting a sample via this chain of custody constitutes acknow | wledgment and ac | ceptance of the Pace® Terr | Sommitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-libran/resource-force-terms-and-conditions/ | library/resource/pace-terms-and-conditions/ | ENV-FRM-CORQ-0019_001_082123 © |

| | | μιει bFC AbDΩ | z | | | | | | | | | | | | | c ci | Wine/Swah | 120mL Coliform Na Thiosulfate | Ziploc Bag | Air Filter | Air Cassettes | Terracore Kit | Summa Can | | | Matrix | Water | Solid | Non-aqueous Liquid | OIL | Wipe | Drinking Water | | | |
|--|------------------|---------------------|-----------------|---|---|----------|---|---|----------|----------|---|----------|----------|----|------------------|---------|---------------------------|-------------------------------|---------------------|------------------------|--------------------------|---------------------------|-------------------------|---|-----------------------------|--------------------------|-------------------------------------|--------------------------|---------------------------|--------------------------|--------------------------|---------------------------|--------------------|--|--|
| 8205 | | 863C | + | | | | | | | | | | | | | | | SP51 | ZPLC | AF | U | <u>2</u> | | | | | WT | SL | NAL | OL | WP | DW | | | _ |
| 51 | | 3E3E | - | | | | | | _ | | - | | | | | | | | | | | | | | | | tered | | | | | | | | |
| | | SP3N | + | U | - | - | - | - | \vdash | \vdash | - | ╞ | - | - | $\left \right $ | | | | | | | | | otio | ate | | 250mL HNO3 plastic - field filtered | | astic | | ate | astic | | | 2 |
| | | N148 | + | _ | | | - | - | | - | - | \vdash | \vdash | - | | | | | υ | 1L unpreserved plastic | etate | astic | astic | 500ml unnresented plastic | 500ml NaOH Zn Acetate | astic | astic - | astic | 250mL unpreserved plastic | lastic | 250mL NaOH, Zn Acetate | 125mL unpreserved plastic | astic | 125mL H2SO4 plastic | |
| # | es | 3630 | + | | 1 | | 1 | + | ╞ | - | | - | \vdash | | $\left \right $ | Plactic | plastic | plastic | plasti | erved | Zn Ac | E HO | | | DH V | | 103 pl | IO3 pl: | preser | SO4 p | OH, Z | preser | 03 pl | SO4 p | |
| Profile # | Notes | 3P2U | + | - | _ | \vdash | _ | | L | | | _ | | - | $\left \right $ | 4 | NAOH | 1L HNO3 plastic | 1L H2SO4 plastic | Inpres | 1L NaOH, Zn Acetate | 500mL NAOH plastic | SOUTH HINUS PLASTIC | 500ml unpresented p | | 250mL NaOH plastic | mL HN | 250mL HNO3 plastic | mL un | 250mL H2SO4 plastic | mL Na | un Jm | 125mL HNO3 plastic | 125mL H2SO4 plastic 16o2 uppresserved ple | |
| ĩ | 1 | 3610 | 1 | - | | ╞ | - | | - | | | | _ | | $\left \right $ | | 11. | 11 | 1 | ר - | | 200 | | 200 | 500 | 250 | 250 | 250 | 250 | 250 | 250 | 125 | 125 | 125 | |
| | | NGDN | | _ | | | | | | | | | | _ | | | | 7 | S | _ | | | 2 0 | | | | | 7 | | S | N | - | _ | | 2 |
| | 2 | NGKN | 1 | | | | | | | | | | | | | | BP1C | BP1N | BP1S | BP1U | BP1Z | BP2C | | BP211 | BP77 | BP3C | BP3F | BP3N | BP3U | BP3S | BP3Z | BP4U | BP4N | NVPD1 | |
| | Vetrakeum | IGFU | | | | | | | | | | | | | | | L | | | | | | 000 | 1922 | | | | | | | | | | | |
| | 2 K | √GSU | | | | | | | | | | | | | | | | | | vide | ss | | | | 0 | SS | SS | ss | SS | SS | SS | | | | |
| | 42 | rG4U | | | | | | | | | | | | | | | | | | amber wide | er gla | 0 | | naar/a | er alas | ber gla | oer gla | er gla | nber glass | er gla | er gla | | | | |
| C N | A | S£∋A | 1 | | | | | | | | | | | | | | ar | ar | ar | ved ar | s amt | r glas | | amper | 3 amb | A am |)4 aml | s amb | es amb | s amb | s amb | | | | |
| SI | + 42 | √esn | 1 | | | | | | | | | | | | 1 | | ar soil | ar soi | ar soil | preser | nor | ampe | | | ION H | H2SC | H2SC | unpre | unpre | unpre | unpre | | | | |
| S | 13 | ∩ເອ∀ | 1 | | | | | | | | | | | | 1 | | 8oz clear soil jar | 4oz clear soil jar | 2oz clear soil jar | 4oz unpreserved | 100mL unores amber glass | 1L HCI amber glass | 11 No Thissuifato alors | tt iva Trilosullate deal/altiber glass 11iter unnres amber dlass | 500mL HNO3 amber glass | 500mL H2SO4 amber glass | 250mL H2SO4 amber glass | 500mL unpres amber glass | 250mL unpres ar | 125mL unpres amber glass | 100mL unpres amber glass | | | | |
| | Dag | нгәА | | | | | | | | | | | | | 1 | | Γ | | | Ì | | | T | | | | | | | | | | | | |
| Eng. 69] | 2 37217201 Dayla | BGIU | | | | | | | | | | | | | 1 | Ş | WGKU | NGFU | WG2U | JGFU | AGUU | AGTH | | AG1U | AG2N | AG2S | AG3S | AG2U | AG3U | AG4U | AG5U | | | | 0 |
| r Count | 77.1 | DG9B | | | | | | | | | | | | | 1 | Glass | F | | | Ť | | | | | | | 1 | _ | 4 | | | | | | $\left \begin{array}{c} c \\ c \end{array} \right $ |
| ontaine xa | 13) | W690 | | | | | | | | | | | | | 11 | | | | | | | | | | | | | | | | | | | | 11/1 |
| ample Container Co by: Lenexa Mniversul | m | 0690 | | - | | | | | | | | | | | 11 | | vial | vial | | _ | | Vial | | vial | ear vi | ass | | BSS | glass | | | | | | O CONTRI O |
| 1001_Steed 1 | | ∩69∧ | | | | | | | | | | | | | 11 | | clear | Der voi | lear vi | ber via | amper | ambe | r vial | clear | red c | lear gl | ass | ear gl | Clear | ar | | | | | 2 |
| A-LENE-C Date: } Client: | Site | DG90 | | | | | _ | | | | | | | | | | sulfate | Cl amt | eGHo | SP am | 200 | | | a Thio | Drese | S04 c | pres g | 다 다 | Jupres | ar soil | | | | | |
| IV-FRM ffective | | DC9H | | | | | | | | | | | | | | | 40mL bisulfate clear vial | 40mL HCI amber voa vial | 40mL MeOH clear via | 40mL TSP amber vial | 40mL H2SO4 amber vial | 40mL INA I NIO AMDER VIAI | And HCI clear vial | 40mL Na Thio, clear vial | 40mL unpreserved clear vial | 1liter H2SO4 clear glass | 1liter unpres glass | 250mL HCL Clear glass | 250mL Unpres Clear glass | 16oz clear soil jar | | | | | Jer. |
| DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 Effective Date: | | H6ĐA | | | | | | | | | | | | | | | 4 | 4 | 4 | 44 | 4 | 4 4 | P P | 4 | 4 | 1 | Ŧ | N | N | - | | | | | Work Order Number: |
| DC#_1 Revisi | | xinteM | E | | | | | | | | | | | | odes | | DG9B | DG9H | DG9M | 0690 | 222 | 10201 | HOUN | VG9T | VG9U | BG1S | BG1U | BG3H | BG3U | WGDU | | | | | ork Ord |
| | | COC Line Item | ک ے ۲ | 2 | e | 4 | 5 | 9 | 7 | ∞ | 6 | 10 | 11 | 12 | Container Codes | | P | | | | שב | בוב | <u><</u> آر | | 1> | m | | | <u></u> | 5 | | | | | 3 |

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Qualtrax Document ID: 30422

Page 15 of 15



Attachment 6: Boring Logs and WWC-5 Forms

| 14 | 1122 | | | | RING LOG / MO | NITORIN | | | | - | الالبيدين يون |
|------------|-------------------------|---|----------------------------|-------------------|---|-------------|------------------------------------|------------|--------------|------------------|---------------------|
| _ | AW No. | 1 | | Locatio | n of Drill Hole | | Well ID Tag No. | | Driller | | Geologist |
| M | N-1 | | | | | | | FH | | Ri | chards |
| | Nater Le | evel Dept | hs | G | PS Coordinates | Constant in | Type of Surfa | _ | | | Drill Rig |
| | uring | | | Lat: | 37.42971 | | - Concrete - C | _ | | | |
| - | rilling | | | _ | | | orilling Method / Sa | mpling | g Method | - | Total Depth |
| | nd of rilling | | | Long: | -95.46291 | A | ir Rotary | | | | 140 |
| + | | mple Dat | a | | | scription | | | We | Il Con | struction |
| oth =t. | Sample No. & Type | % Rcvr. | PID | USCS | Geological Descri (inciude L Moisture - Plasticity - Co | JSCS class | ification) | Dpth Ft | Schematic | | Details |
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| | | | | | any soft s yellowsh | endy | Clay | | | Type: Size: | |
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| 20 | | | | | esuastal | not v | ery company | 20 | * (m) | Type: Sched | ule: |
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| 25 | | | 0111410-7110-10-PC - 10-PC | | e | | the second data of a second second | 25 | | Type: Sched | ule: |
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| | | 75 | T | 2900 N Suite A | W Button Rd, | Project L | | | 00 410 Rd, I | | esha, KS |
| E | Engir | neeri | ng | Topeka 785-40 | , KS 66618 9-13 2 0 | Signatur | e: Any | 1- | ~ | | |
| A Usti | versal Enginee | ring Sciencos | Company | | | GSI Joh | No: 22T2177.01 | 1 | Date: | 24 | 6/23 |

| RH/M | W No. | Sel OYO | | Location | of Drill Hole | 1.000 | Well ID Tag No. | 1.5 | Driller | Geologist |
|------------|-----------------------------------|--|--|---|--|---|--|-------------|-----------------------|------------------------------|
| | 1-W | | | | | | | | | |
| | | al Dont | he | GP | S Coordinates | | Type of Surfa | ace | STORE IN | Drill Rig |
| _ | Vater Lev | ver Dept | 115 | GF | Goordinates | Asphalt | - Concrete - 0 | | - Gravel | |
| | rilling | • | | Lat: | | | rilling Method / Sa | | | Total Depth |
| | nd of | | | | | | | | | |
| | rilling | | | Long: | | | | | | |
| T | Sa | mple Dat | ta | | | scription | Harris Harris | | We | Il Construction |
| pth Ft. | Sample No. & Type | % Rcvr. | PID | USCS | Geological Descr (include l Moisture - Plasticity - Co | USCS class | ification) | Dpth Ft. | Schematic | Details |
| FL | Type | | _ | | | | | П | | Elevation |
| | | | and the set per para | | Med gran | J sha | rle . | | | Casing: Pad: |
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| | | ~ | | - | IW Button Rd, Suit | Project | Name: | Da | ylight Peti | roleum |
| | | T | | 2900 N A-7 | ww Button Kd, Suit | | Location: | 174 | 400 410 Ro | d, Neodesha, KS |
| | Engi | neer | ing | Topek | a, KS 66618)9-1320 | Signat | | | | |
| | Jnivorsal Engin | | | /85-40 | 13-1340 | GSLIO | b. No: 22T2177 | .01 | Date | : |

| 1 | der er sk | 10 | | BOR | ING LOG / MON | TORIN | G WELL SCHEM | ATI | C | |
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| BH/ | WW No. | | augent | Location | n of Drill Hole | 1616/23 | Well ID Tag No. | | Driller | Geologist |
| PM | W-1 | | | | | | | | | Dell Die |
| | Water Le | vel Dept | hs | | S Coordinates | Acaba | Type of Surfa It - Concrete - C | | - Gravel | Drill Rig |
| | uring rilling | | | Lat: | 37.42971 | | Drilling Method / Sa | | | Total Depth |
| | nd of | | | | gs.66291 | | | | | |
| D | rilling | | | Long: | | | | | Mar | Il Construction |
| | | mple Dat | a | 20 SVIII | Soll Des Geological Descri | ntion & Re | emarks | | 449 | Construction |
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| | | | | | H Gry H | 100 | K thinly | | | Amount: Water: (59/50lbs) |
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| 9 | 5 | | | | | | | 95 | 5 | Schedule: |
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| 10 | | ~ ~ | | | | Projec | ct Name: | - | ylight Petr | oleum |
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| | Engi | J L neer | ing | | a, KS 66618 | Signa | | | | |
| A | | | | 785-4 | 09-1320 | - | ob. No: 22T2177 | 01 | Date | |
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| BH | MW No. | 1 miles | | | ORING LOG / M | | | | 10 TO 10 TO 10 | | |
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| F | Water L | evel Dep | ths | I (I THE R P | SPS Coordinates | Acaboli | Type of Su | face | | Drill Rig | - |
| E | Drilling | | | | 37.42911 | Dr | - Concrete - | amolin | a Mathod | Total Dept | h |
| | End of Drilling | | | Long | -95,6873 | 2 Aight | Dual Tubes | Macro | Core | 140.C | |
| | | ample Dat | ta | 1000 | Sol | Description | | | | Il Construction | |
| pth F£ | Sample No. & Type | % Rovr. | PID | USCS | (Incluc Moisture - Planticity | cal Description & de USCS classifi - Consistency - Color | cation) - Odor - Particulates | Dpth FL | | Details | |
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| | | ZC | | | V Button Rd, Suite | Project Nan | ne: | | | -RCK Dayl | 9 '` |
| - | | JO. | A | -7 oneka | KS 66618 | Project Loc | ation: | 4024 | Rainbow | Hvd, Kansas Elty | |
| | | eerir | ¹ 8 7 | 85-409 | | Signature: | that | n | 2 | | |
| Unive | rrsal Engineeri | ng Sciences Co | ompany | | | GSI Job. No | 2174157.01 | - | Date: | 714/23 | 1 |

| BHI | MW No. | 1 | | | RING LOG / M | IONITORIN | | | the second second | St E | |
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| a second second | W2 | | | Constitut | ni ai onii noie | | Well ID Tag N | 0. | Driller | 1 917 | Geologist |
| D | | evel Dept | ths | G Lat: | PS Coordinates | | Type of Su - Concrete - | Grass | | Ge | Drill Rig oProbe |
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| D | rilling | mple Dat | | -ong. | 0 at | Desident | Dual Tubes | - Macro | | | |
| | Sample | | | | Geologi | Description | Remarks | | We | Cons | truction |
| pth FL | No. & Type | % Rovr. | PID | USCS | Moishure - Plasticity | | r - Odor - Particulates | Dpth Ft | Schematic | | Details |
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| $\{ \}$ | | | | | Shall (| signify s | may | -17 | | Pad Siz | 20: |
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| ł | **** | - | | | ary ac.g. | 124 12 6 | UCK V- | 100 | | Water. | |
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| ŀ | | | | | to to an | · - 110 | 10 116 | -201 | | Amount | : |
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| 20 | | | | J | leaded sh | ale | · · · · | | | Type: Schedu | le: |
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| | rsal Engineerir | | | 85-409-: | 1320 | | o: 2174167.0 | | | | |

| | | 101 | 11/2 | | | | G WELL SCHE | 1 | Driller | Geologist |
|----------|---|--|-----------------------|---|--|--|--|-------------|--|------------------------------|
| BH/MW | | 4 C 14 | | Location | of Drill Hole | 100 | Wenter tay No. | - | Dimer | Contraint |
| PMW | | | | | | | T | | | Drill Rig |
| | | el Dept | hs | GP | S Coordinates | Acaba | Type of Surfa t - Concrete - C | | - Gravel | |
| Durin | | | | Lat: | | | Drilling Method / Sa | | | Total Depth |
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| 85 | a se en se | - HRAN - C | | - | - | - | | 85 | | Type: Amount: |
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| Er | ngir | ieer | ing | | , KS 66618 | Signat | ure: | | | |
| | - | | s Company | 785-40 | 9-1320 | | b. No: 22T2177. | | Date: | |

| and the second division of the second divisio | MW No. | 1 | - 107 | | RING LOG / M | and the second se | Well ID Tag No | | Driller | 11.25 | Contractor |
|--|---------------|----------------|-----------------------------|----------------------|--|---|---------------------------------------|------------|-----------|----------------------|----------------|
| m | 111-2 | | | | | | A A A A A A A A A A A A A A A A A A A | - | | | Geologist |
| 100 | | evel Depi | ths | G | PS Coordinates | | Type of Su | face | 4 | | Drill Rig |
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| 20 | | | | | | | | 10 | | Weil | Seal |
| | | | | | de gray | limet | M | Π | | Type: Amount | i. |
| | | | | | CID D Q | | (12-1 | in | | Water. | |
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| . | | | 2 | 900 NW | Button Rd, Suite | Project Nam | e: | Rode | Cleaners | - KCK | |
| | G | S | A | -7 | | Project Loca | tion: | | | | ansas City |
| Er | ngine | erin | | opeka, K 35-409-1 | S 66618 | Signature: | | | | rivuj A | undad Uily |
| | | g Sciences Cor | | >>-409-] | 1520 | GSI Job. No: | | | Date: | | |

| BH/MV | V No. | 10.50 | - | Locatio | n of Drill Hole | | Well ID Tag No. | T | Driller | 2 | Geologist |
|--------------------------|----------------------------|-------------------------|--|-------------------|-----------------------|---|----------------------|-------------|-------------|----------------|---------------------|
| PAN | | | | | | | | F | HD | I | Richards |
| | | vel Dept | hs | GF | S Coordinates | 1.018.00 | Type of Surfa | ace | | | Drill Rig |
| Duri | | tor bopt | | | | Aspha | It - Concrete - | _ | - Gravel | | |
| Drill | - | | | Lat: | 37.47001 | | Drilling Method / Sa | | | 1 | Total Depth |
| End | | | | Long | -95,66240 | | Air Rotar | y | | | 140 |
| Drilli | - | mala Det | | Long. | | locarintian | | TT | W | all Con | struction |
| S | Sa | mple Dat | 8 | | Geological Desc | escription cription & Re | marks | | 11-11-14 | | 1.50.2 |
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| P | 11 | 26 | T | 2900 N Suite A | IW Button Rd, | | Location | | | | desha, KS |
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| Engineering 785-409-1320 | | | | | 9-1320 | Signature: GSI Job. No: 22T2177.01 Date: 12 6 13 | | | | | |

| НЛ | W No. | | A THE | Location | of Drill Hole | | Well ID Tag No. | | Driller | Geologist |
|-----|--|--------------------------------|---------------------------------|-------------------------------|---|--|---|-------------|------------|-------------------|
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| | N) | al Dent | - | 00 | S Coordinates | 10000 | Type of Surfa | ace | 20 J. 100 | Drill Rig |
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| | rilling | | | Long: | | 1.4 | 1 des | 1 1 | | |
| T | | mple Dat | a | a de st | | escription | | | We | li Construction |
| oth | Sample No. & Type | % Rcvr. | PID | USCS | Geological Desc (include Moisture - Plasticity - C | USCS clas | emarks selfication) Color - Odor - Particulates | Dpth Ft. | Schematic | Details |
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| | | - | | | then be | ds | SMONT | | | Water: (5g/50lbs) |
| | - | | - | | 10001 00 | | | 1 | | Well Pack |
| | | | | | | | | 50 | | Type: |
| 50 | _ | | | - | JU arz | 10 | black | | | Amount: |
| | | | | | shride | 0000 | blace fragment | | | Riser |
| | | | | | unay, | | - 1rz gww | 2 | | Туре: |
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| | | | | | m Z | 11122 | | | | Screen |
| | | | | agence had the | it gray ma gray to | blu | chall. | - | | Туре: |
| | | | | - | gray 10 | FIR | | 60 | | Schedule: |
| 60 |) | | | | THE DRAW BELLEVILLE AND ADDRAW | KNIGTERNING DE | en Riemannacas deren meter im Reference wie wie wie | | | Slot: |
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| - | the. | | | | | | | | | End Cap |
| 6! | 5 | No. | | | | AND A PROPERTY AND A PROPERTY AND A PROPERTY AND A | Managara da ang kang kang kang kang kang kang kang | 6 | 5 | Type: PVC |
| | | 14 | ALCONOMICS IN | 7 | | | £ . | | 1 | Length: 2" |
| N. | 1 25 | | | | du aren | 1 k | D LIK | | | Date Drilled: |
| | анарасныцанияний | Marina e (Manualan Angelan) ka | ***** | osella i klinetosa SM (KROMPH | V-thiny | bed | ded shall | 7 | 0 | Date Completed: |
| 7(| | | | | J | Proje | ct Name: | | ylight Pet | roleum |
| | | S | 51 | A-7 | WW Button Rd, Sui | ite | ct Location: | 17 | 400 410 R | d, Neodesha, KS |
| | Engi | neer | ing | | a, KS 66618 | Signa | ature: | | | |
| | - | neering Scienc | | | 09-1320 | | ob. No: 22T2177 | 04 | Date | |

3

| 3H/M | /W No. | BALTOS! | 1.01 | Location | of Drill Hole | | Well ID Tag No. | 3-44 | Driller | 0 | Seologist | |
|-------------|---|--|---|--|-------------------------|---|--|-------------|--|----------|-------------|----------|
| | | | | | | | | | | | | |
| <u>ni</u> | W3 Nater Le | vol Dent | he | GP | S Coordinates | 1.000 | Type of Surfa | ce | 28-16 | 1.2 | Drill Rig | - |
| - | uring | ver Dept | 110 | 100 | | Asphal | | | | | | _ |
| | rilling | | | Lat: | | 19.61 | Drilling Method / Sar | npling | Method | | Total De | pth |
| Er | nd of | | | Long: | | | | | | | | |
| Dr | rilling | | | Long. | | | | | Wal | I Constr | uction | |
| | | mple Dat | ta | | | Description | marks | | VICI | T | dottom | |
| opth Ft. | Sample No. & Type | % Rcvr. | PID | USCS | Moisture - Plasticity - | Consistency - C | sification) olor - Odor - Particulates | Dpth Ft. | Schematic | | Details | |
| | 1720 | | | | dry dy an | ers ha b | lace thurly | | | | Elevation | 渡 |
| | | | 1 1 | | | N | | | | Casing: | | 100 |
| | energen van die strak af soor hiele k | | | | - beacea | WALL- | n mant i maar da kon yn de roek meer waar de op it maar in de ferste de staar te | 1 | | Pad: | | 1 |
| | | | | | | | | 75 | | Pro | otective Co | ver , |
| 75 | neni ang asi na merupak nigi k | IRWNHOR WHI | | - | day de q thuniy | L Lan | Haul . | Ħ | | Туре: | | 1 |
| | | 1 . | | | and at a | ng ru | 0.000 | | | Size: | | |
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| 80 | KALMAN MANA PARA | Contraction of the local distance | a patroniki in anome | | | and the second se | | 80 | | Туре: | | |
| | | | | | dry drag | of hr | 61206 | | | Amoun | | |
| | | | | | | | | | | Water: | (5g/50lbs) | - |
| | an prison of the Print | | | | think a | radea | small | | | Well | Pack | |
| 85 | | | | | | | t | 85 | | Type: | | |
| | | | - | | | | 8 | | | Amoun | t | |
| | | | | | dy ave | 46 1 | nac | | | Ri | ser | |
| | | ************************************** | in the strength of the Real Property of the State | + | ve p | y ada | d stall | 1 | Contraction of the second seco | Type: | | |
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| 90 | | AND PROMINSION | be de l'anna ffik bullan har vel an be sen | - | | an a nagamatan an pennanan pennanan an | nanara kana kuna pena-saan di kalangkuna kunarka kata kana kuna kuna kuna kuna kuna kuna kun | - | | | | r . |
| - | | F | | | dr arach | 64 | za then la | | | Length | 1 | 1 |
| | Instrumental | Nariba man Danas kariji beranian 123 Anta pan | ana editiviti manan Mahifi | | one gros | NP | -ye quinting | A | 173101 | Sc | reen | <u> </u> |
| | | | | | bidded | drall | | . 0 | | Type: | ule: 🖂 🤤 | |
| 95 | 5 | 11 | NRIGIENNORMEREN | nim de ball jui | VILLEA | 1 | | 95 | A PROPERTY OF A PARTICULAR STATE | Slot: | ule, say | |
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| | | | | | 1 i | | Shall | INTER . | ana Manin'ny manana manjarika na maraka | Lengt | 1: 10 | T R |
| | and her destricted to Marinet | ante al primer marine cher sen | | | De | ana | 1100 | | | | End Ca | 9 |
| 100 | D | | | | | | n han wet total () the wet was stable in the state of the first state makes and state | 100 | | Type: | | PV |
| | antin antina and biological and a | na kan da | 1 | A DISTANCE AND DESCRIPTION OF | | 11. | 10 010 | + | | Lengt | | 2" |
| | | | | | ar ym | 100 | in ve | | | Date | Drilled: | |
| | all states and a second second second | NUMBER OF CONTRACTOR OF CONTRACT | aya 24 - Manilar Marina (19 Marina) I | artificture and a state of a second state of the | U | 114 | a shall | | and the second | Date | Complete | d: |
| | | | | | Immed 1 | raple | + may | 10 | 5 | | 10 | 1 |
| 10 | 5 | 1 | 1 | 1 | 1 | | | _ | Alexandra and the | alaura | 2.2 | 4 |
| | | | 11 | 2900 | WW Button Rd, Su | ite Projec | t Name: | | ylight Petr | | 6.2.33 | 175 |
| 1 | | T | | A-7 | | | t Location: | 17 | 400 410 Ro | d, Neor | desha, I | (S |
| | Engi | neet | ing | Topek | a, KS 66618 | Signa | ture: | | | | N. | |
| 1.1 | ring. | alcel | 8 | 785-4 | 09-1320 | Signa | | | | | 9 | 2020 |

Rev. 2022

| - | | | | | | | Well ID Tag No. | | iller | T | Geologist |
|-------------|-------------------------|--------------|-------------------|----------|---|--------------|-------------------------------------|-------------|--------|--------|--|
| | /W No. | | | Location | of Drill Hole | | WeinD Tag NO. | DI | | + | |
| | IWS | | | | | | | | _ | | Dell Di |
| V | Vater Le | vel Dept | hs | GP | S Coordinates | | Type of Surfa | | Ore | 17 | Drill Rig GeoProbe |
| | uring | | | Lat: | | | - Concrete - G | | | | |
| - | illing | | | | | | Drilling Method / Sar | npiing W | ethod | | Total Depth |
| | nd of rilling | | | Long: | | | Dual Tubes - M | lacroCo | re | | |
| T | Sa | mple Dat | a | | | escription | | | V | Vell C | Construction |
| opth Ft. | Sample No. & Type | % Rcvr. | PID | USCS | Moisture - Plasticity - C | USCS class | ification) | Dpth Ft. | chemat | ic | Details |
| 0 | | | | | de grey Ledded Med-de c Strale | | Ck furly 1 (4.8) 520dy | 5 | | F | Elevation Casing: Pad: Protective Cover Type: Size: Pad Size: Well Seal |
| 10 | | | | | It gray s | and y | inell (12-16 | <u>10</u> | | / | Vieli Geal Fype: Amount: Nater: Well Pack |
| 16 25 70 | a di | | | | | | V. Sandy of Some (16-20 Lee S | 20 | | | Type: Amount: Riser Type: Schedule: Inside Diam.: |
| 130 | | 1 | | | | | Lime Jong | -25 | 1 | | Length: Scraen Type: Schedule: Slot: |
| 135. | | | N. | N. | dk grey stale | thin by b | bedayed | 2) | | | Inside Diam.: Length: End Cap Type: |
| 140 | 1 | 12 | | 1 | thinly | bedd | lace ef shalf | 6) | | | Length: Date Drilled: Date Completed: |
| 35 | 1 34 | No. | 1 Aug | 2 | | | | 35 | | | |
| 1 | the Sec | TRE | 1 | | | Project | t Name: | Davli | ght Pe | etrol | eum |
| | 14 | 10 | | 10.1 | W Button Rd, | - | - | | | | |
| - | | JA | | Suite | | Project | Location: | 17400 | J 410 | Rd, | Neodesha, KS |
| 1 | Eng | neer | ring | | a, KS 66618 | Signat | ure: | | | | |
| 100 | ung | incer | | 785-4 | 09-1320 | | · · · | 0.4 | 1 | 4.4.1 | |
| 102 | AND SCHOOL STOR | Series Scinn | ces Compilmi 9 | 6 | 8 | GSI Jo | b. No: 22T2177. | U1 | Da | te: | |

| BH/MW No. | 1 | 101 | Locatio | on of Drill Hole | | Well ID Tag No. | | Driller | Geologist |
|---|---|---|---------|--|------------|-----------------------|-------------|--------------|-------------------|
| Pmw 4 | | | | | | | | FHD | Richards |
| Water Le | evel Dent | ths | G | PS Coordinates | | Type of Surfa | | | Drill Rig |
| During | | | | | Asphalt | t - Concrete - | | - Gravel | SPEE DST AI2:301 |
| Drilling | | | Lat: | 37.42969 | | Drilling Method / Sa | _ | | Total Depth |
| End of | | | 1.0.00 | -95.10107 | | | | | 140 |
| Drilling | | | Long: | -12. 44.14/ | | Air Rotary | | | |
| | ample Dat | ta | 1 | | scription | and the second second | | We | ell Construction |
| SampleOpthNo. &Ft.Type | % Rcvr. | PID | USCS | Geological Descr (include U Moisture - Plasticity - Co | JSCS class | ification) | Dpth Ft. | Schematic | Details |
| | | | | dry clay ? 14 | MARIC | h bra shale | | | Elevation |
| | | | | and civil i u | 1.000 | 10 10 10 10 10 10 | | | Casing: |
| | | | | | | | | | Pad: |
| 5 | | | | | | | 5 | | Protective Cover |
| -senitorinistini | | ilementeri il | 1 7 | | | 6.4 S A | H | | Туре: |
| | | | | dry snayc | ry i | thin shell | | | Size: |
| 12942946888688887368888736888887 | | | - | 11 addarb | 1 Jaco | | | | Pad Size: |
| | | | | I IT POUVISI | V V X | | | | Well Seal |
| 10 | 22 - P. COMILE (16 (16 17 10 (16 10 | ***** | | | | | 10 | | Туре: |
| | | | | ANA Sa. A. | ch z (| 1. It and/ | TI | | Amount: |
| a Barry popolitik papaga kali Mala Sala | | | | Source of the | Juna | a u real | | | Water: (5g/50lbs) |
| | | | | dry sondu bin to gi | renz, t | unly bedde | | | Well Pack |
| 15 | | | | · · · · · · · · · · · · · · · · · · · | J. | J * | 15 | | Туре: |
| A HILKINGHAMMAN PHY | - Contraction of the second | a an | 1 7 | As a second | | 1 | | | Amount: |
| | | | | dry It bra | to yell | ontro | | , | Riser |
| ID MANAGEMENT OF THE DESIGN OF | ** | | | very sandy | n shal | 1 | | | Туре: |
| | | | | 1 |) | × | | | Schedule: |
| 20 | | 100000510200000000 | | | | | - 20 | | Inside Diam.: |
| | | | | dry If Gra | 12- | 0.10 | | | Length: |
| 1017339976-14217-4411-141117839 | | there and the second | | | 1 pp | ale bri | ~ | | Screen |
| | | | | V. Sondy s | nali, | Massille | | | Туре: |
| 25 | | | | | / | 100000 | 25 | | Schedule: |
| | | | | 1-11 - | 1 1. | | | | Slot: |
| | | | | ary H gr | avy h | pall | | | Inside Diam.: |
| | ** | | 1 | bengellow | 15 10- | 11 01-201 | | | Length: |
| 30 | 110 | | | Mellow | Va Sh | and source | .20 | | End Cap |
| 30 | an marmidzennana | ****** | | | 1.1 | 2 113 In | •30 | | Type: * PVC |
| | | | ~ | de gray to bedded cha | AACI | r thinly | | | Length: 2" |
| PILITERIA MATERIA | | -1244444411009004099099991 | 10 | hadded an | 21 00 | study - | | | Date Drilled: |
| | | | 1 13 | senara cu | nu | 10.01 | | | Date Completed: |
| 35 | | | 12 1 | N. Story | / | | 35 | | •24 |
| | TO | | 2900 N | IW Button Rd, | Project | Name: | Day | light Petrol | leum |
| | JN | | Suite A | -7 | Project | Location: | 1740 | 00 410 Rd, | Neodesha, KS |
| Engi | neer | ing | | a, KS 66618 19-1320 | Signatu | re: Aut | | | |

2.0

18

5

| 3H/ | MW No. | | | | RING LOG / MON | | Well ID Tag No. | T | Driller | | Geologist |
|------------|--|--|---|-----------------------------------|--|--|---|-------------|--|-----------------------|--------------|
| m | 14 | | | | | | | | | | - oologist |
| | Water Le | vel Dep | ths | G | PS Coordinates | | Type of Surfa | | | | Drill Rig |
| _ | uring | | | 1.0.0 | | Asphali | - Concrete - | _ | - Gravel | | Diminiy |
| D | rilling | | | Lat: | 37.42969 | | Drilling Method / Sa | _ | | | Total Dep |
| | nd of rilling | | | Long: | -95.64167 | | | | | | |
| | Sa | mple Da | ta | | Soil De | scription | | | Wel | Il Constr | uction |
| oth Ft. | Sample No. & Type | % Rcvr. | PID | USCS | Geological Descri (include U Moisture - Plasticity - Co | SCS class | ification) | Dpth Ft. | Schematic | | Details |
| | | | | | It gray to | black | thinly | П | | | Elevation |
| | | PM701159-1941-04785 | AND \$10 20 20 20 20 10 10 10 10 10 10 10 10 10 10 10 10 10 | - | bedded'so | 2 ler | thinly 020 | | | Casing: | |
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| 40 | | | | | 1. 00/100 Ils | | | 40 | | Prot | ective Cover |
| | | | *********************** | OURADOON | 11 0001 82 | adu = | h a dh | | | Type: | |
| | | | | | H gray sa massive /th | ing s | nall | | | Size: | |
| ŀ | mmenezetas estecetadaden a | | 94199144444444444 | | MAJSIVE / TH | M.C. | eye D | | | Pad Size | : |
| 5 | | | | 3.0 | | | | 45 | | Well Se | eal |
| | Monthead and a second second | ****** | | And Doorselading and Distance | madam | ca.A. | | | | Type: | |
| | | | | | mean grey | Sonay | shall | | | Amount: | |
| ł | | | **** | | med. grzy | NCVRÍ | broking | | uncurlays a management of any | Water: (59 | |
| | | | | | 2 | | secoury | | | Well Pa | ack |
| 0 | | - | | | | Lan States and Distances and D | | 50 | | Туре: | |
| | | | | | decorrey to 1 bedded stra coel Frzam | drice. | Hunley | | | Amount: | |
| - | | | | | bedded sha | le n | OAC Gmall | | | Riser | |
| | | | | | CO28 Concern | and the | NUT STIECC | | | Type: Schedule: | |
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| | | | | | med grzy t | o blac | v. chall. | | | Length: | |
| - | Managama San San San | HEALTHAIL PROTOCOLOGY | TRANSPORT | | | 91000 | P 310~ | | ANITOR MURAPHIA MURA | Scree | n |
| | | | | | | | | | | Туре: | |
| | | | **** | | anne ann | - | and the second se | 60 | | Schedule: | |
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| | | | | | - Lange de la construcción de la | | 7 | | | Inside Dia | m.:- |
| | | | | | rand s | nall | | | | Length: | |
| 5 | 9(40)00000000000000000000000000000000000 | | | | | | | -65 | | | nd Cap |
| | | | | | dy aroun | ~ 1-1- | er y this | | | Type: | , PVC |
| | | | | | dk grzy ! | N VIG | VE V. MUT | | | Length: Date Drill | 2" ed: |
| T | INTERNAL CONTRACTOR OF THE | 1444 MERCENTRONIS IN CONTRACTOR OF THE | 1 | | bedded st | white | Interface of the second s | | Birgura mananas 19 kaunannas | | |
| | | | | | 2 | and the fait in | 7 | 70 | | Date Cor | mpleted: |
| 4 | | C | 1 2 | 2900 NW | Button Rd, Suite | Project N | ame: | | ght Petrole | eum | |
| | G | | 4 | \-7 | - IE | roject L | ocation: | 17400 |) 410 Rd, N | leodes | ha, KS |
| | ngine | | 0 7 | ⁻ opeka, i '85-409- | KS 66618 1320 | ignature | | × . | | | |
| nive | rsal Engineering | g Sciences Co | mpany | | 1 T T T T | | No: 22T2177.01 | | Date: | | |

|), | | | | n of Drill Hole | 1 | G WELL SCHEN Well ID Tag No. | _ | Driller | G | eologist |
|----------|----------------------------------|----------------------------------|----------------------------------|---|-------------|--|-------------|------------------------------|------------------------------|---------------|
| | | | | | | Type of Surfa | | ALIST | | Drill Rig |
| .e | el Dept | hs | GP | S Coordinates | Aspha | t - Concrete - C | | - Gravel | | Stilling |
| | | | Lat: | | | Drilling Method / Sar | | Method | | Total Depth |
| | | | Long: | | | | | i. | 2. | |
| 2 | nple Dat | .a | | Soil De | scription | | | Wel | I Constru | uction |
| 3 | % Rcvr. | PID | USCS | Geological Descr (include l | iption & Re | emarks sification) olor - Odor - Particulates | Dpth Ft. | Schematic | | Details |
| | | | | V. dk gray | 6 6 | | Π | | Casing: | Elevation |
| 10.000 | | , ar | | Declared St | ril | niuntai (si continvesso et lo a di continuo ni bandana anna anna | 75 | | Pad: Pro | tective Cover |
| | verbleverer verstaad det dan de | | 1466196(1117)2633177146811 | med grey to | ble v | . thinly | | | Type: Size: - Pad Size | |
| | | | | bedded shra | le | | 80 | | Well S | |
| 939 Gard | <u>A</u> | | | dk gray to | | V. thinly | | - tosume pytringite its | Amount: Water: (| |
| Bura | | 3 | | bedded su | | 100000 1000000000000000000000000000000 | 85 | | Well F | |
| | 1 | | 1.4 | dr gizy to | he | this by | | | Amount Ris | er |
| No. | | | 1933 | 5(0000(0) | | 1 h | 90 | | Type: Schedu Inside D | le: |
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| 10.1414 | | 11 | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 100 | ernestaltakannanna artisi | Туре: | End Cap PV |
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| | | | | hedded shu | all | 175 | 105 | | Date | Completed: |

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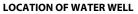
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110 met to de gray limestone 115 \$ light to de gray limestone. light gray unrestone 120 med to de gray shale thinly 25 bedded 130 mil. to black shall thinky bedded nedaray is 135 die gran to bizer limestane 140

WATER WELL RECORD (WWC-5)



| WATER WELL RECORD (WWC-5) | | | WC-5) | DI | R | AF | Origina | KOLAR D al Recor | DOC ID . rd | Correction | _ WELL ID_ Chang | ge in We | ll Use |
|---------------------------|----|-----------|-------|---------|---|----------|---------|---------------------|----------------|------------|---------------------|----------|--------|
| Latitud | le | Longitude | | Section | | Township | | Range | | W Fraction | 1⁄4 | 1⁄4 | 1⁄4 |
| Datur | n | Elevation | | County | | | | | | | | | |

WATER WELL OWNER

| Name | |
|-----------------------|--|
| Business | |
| Address | |
| Well location | |
| at owner's address | |
| | |

CONSTRUCTION

| Borehole interval: | Borehole diameter: |
|--|--------------------|
| fromtoft. | in. |
| fromtoft. | in. |
| Casing height above land su | |
| If casing height is less the has a variance been appr | oved?* Yes No |
| *variance not required fo or environmental remed | U |
| Casing type: | |
| Blank casing interval: | |
| Blank casing diameter: | in. |
| Casing joints: | |
| Weight:lbs | s/ft. |
| Wall thickness or gauge | no.: |
| Blank casing interval: | ft. toft. |
| Blank casing diameter: | in. |
| Casing joints: | |
| Weight:lbs | s/ft. |
| Wall thickness or gauge | no.: |
| Grout interval: ft. to | ft. |
| Grout material: | |
| Grout interval: ft. to | 9ft. |
| Grout material: | |
| | |
| Screen / perforation material | |
| Screen / perforation opening | gs: |
| Screen / perforation intervals | S: |
| Fromft. to | |
| Slot size unit _ | |
| Fromft. to | _ft. |
| Slot size unit _ | |
| Gravel pack intervals: | |
| Gravel pack not used: | Gravel size in |
| From ft. to | ft. |
| Gravel pack not used: | |
| From ft. to | |

WELL WATER USE

| COMPLETION | | | | | |
|---|--|--|--|--|--|
| Depth of completed well:ft. | | | | | |
| Depth(s) groundwater encountered: | | | | | |
| (1) ft.; (2) ft.; | | | | | |
| (3) ft.; (4) dry well | | | | | |
| Static water level in well: ft. | | | | | |
| measured below land surface on (mm/dd/yy): | | | | | |
| measured above land surface on (mm/dd/yy): | | | | | |
| Estimated yield: gpm | | | | | |
| Water level was: ft. afterhours | | | | | |
| pumping gpm | | | | | |
| Pump installed? Yes No | | | | | |
| Water well disinfected? Yes No | | | | | |
| Date disinfected (mm/dd/yy): | | | | | |
| | | | | | |

| | POTENTIAL CONTAMINAT | |
|--------------------------------------|----------------------|----|
| Source | | |
| Distance from well: | Direction | _ |
| Source description: | | |
| Source: | | |
| Distance from well: | Direction | |
| Source description: | | |
| No potential source within 100 feet. | ce of contamination | |
| PERMIT & ID NUMBE | RS (AS REQUIRED) | |
| DWR Application No | .: | |
| | Code: | |
| Site Name: | | |
| KDHE UIC Class V F | | Nc |
| County Permit: Yes | No Permit ID: | |

of boreholes: _____ # of dewatering wells: ____

Lease Name & Well #:

Aquifer, if known:

LITHOLOGIC LOG

| FROM | то | LITHOLOGY INTERVALS |
|------|----|---------------------|
| | | |
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COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

| This water well was constructed | reconstructed | pursuant to the stated water well |
|---------------------------------------|------------------------|---|
| contractor's license and was complete | ed on | I certify that this record is true to |
| the best of my knowledge and belief. | This water well rec | ord was completed on |
| under the business name of | | , |
| Kansas Water Well Contractor's Lice | nse No | under the authority of the designated |
| person as defined in K.A.R. 28-30-2(| j) and signed and c | ertified by the electronic signature of the |
| designated person at its submittal: | | |
| Send one copy to WATER WELL OWNER | and retain one for you | r records. Fee of \$5.00 for each constructed well. |
| KANSAS DEPAR | TMENT 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

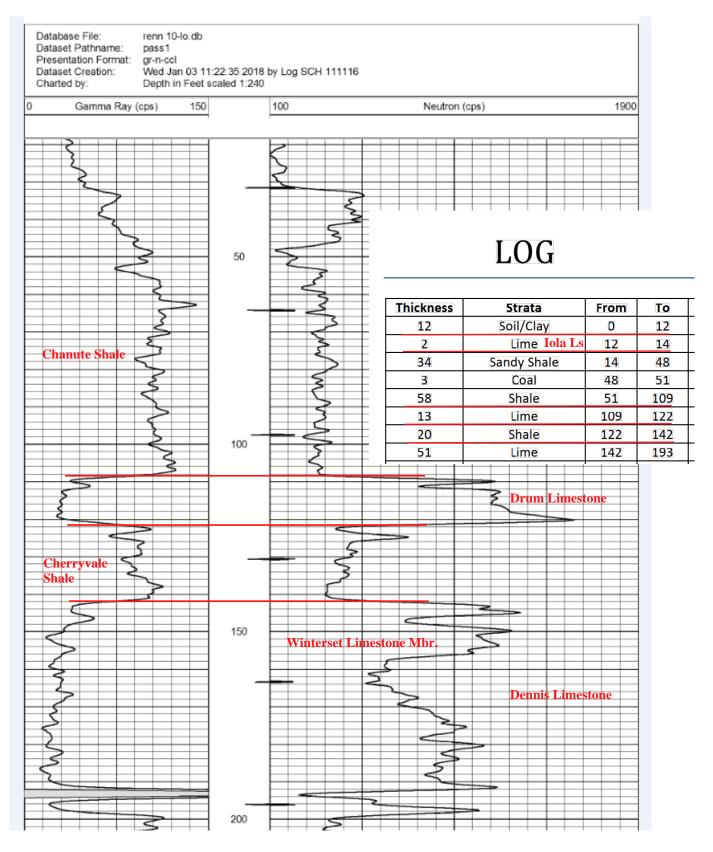
| Form | WWC5.2 - Water Well Record |
|------------|----------------------------|
| Doc ID | 1742182 |
| Well Owner | Daylight Petroleum |
| Contractor | Flint Hills Drilling #914 |

| From | То | Lithology Intervals |
|------|----|---|
| 0 | 5 | clay,sandy,reddish,brown,dry, stiff |
| 5 | 10 | clay,sandy,yellowish,brown,dr y,soft |
| 10 | 15 | sand,fine,reddish,brown,dry,wi th a little shale at bottom |
| 15 | 20 | sandstone,unweathered,light, yellowish,brown |
| 20 | 25 | sandstone,unweathered,reddi sh,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,t o black thin bedded shale |
| 75 | 80 | shale,unweathered,dark,gray,t hinly bedded to black |
| 80 | 85 | shale,unweathered,light,gray,t o black thinly bedded |

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

| From | То | Lithology Intervals |
|------|-----|---|
| 85 | 95 | shale,unweathered,gray,to black |
| 95 | 100 | shale,unweathered,dark,gray,t o black |
| 100 | 105 | shale,unweathered,light,gray |
| 105 | 115 | limestone,unweathered,light,g ray |
| 115 | 120 | shale,unweathered,light,gray |
| 120 | 130 | shale,unweathered,light,gray,t o black |
| 130 | 135 | shale,unweathered,dark,gray,t o black |
| 135 | 140 | limestone,unweathered,light,g ray |

-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)



Daylight Petroleum

Johnson Lease Breakout Well Under Commercial Building Sec. 16-T30S-R16E Wilson Co.

Legend

Proposed Monitoring Wells

OInhausen Farms #6

Johnson # 6 CPMW-03

Johnson #103

Verdigris River

Google Earth

PMW-01

PMW-02

BOW-Anomoly

PMW 04

Johnson #106

Johnson #101

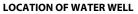
Johnson #7®

Renn #LO-10 (Strat Log Reference Well) N

700 ft

410 Rd

WATER WELL RECORD (WWC-5)



| WATER WELL RECORD (WWC-5) | | WC-5) | DI | R | AF | Origina | KOLAR D al Recor | DOC ID . rd | Correction | _ WELL ID_ Chang | ge in We | ll Use | |
|---------------------------|----|-----------|----|---------|----|----------|---------------------|----------------|------------|---------------------|----------|--------|-----|
| Latitud | le | Longitude | | Section | | Township | | Range | | W Fraction | 1⁄4 | 1⁄4 | 1⁄4 |
| Datur | n | Elevation | | County | | | | | | | | | |

WATER WELL OWNER

| Name | |
|-----------------------|--|
| Business | |
| Address | |
| Well location | |
| at owner's address | |
| | |

CONSTRUCTION

| Borehole interval: | Borehole diameter: |
|--|--------------------|
| fromtoft. | in. |
| fromtoft. | in. |
| Casing height above land su | |
| If casing height is less the has a variance been appr | oved?* Yes No |
| *variance not required fo or environmental remed | U |
| Casing type: | |
| Blank casing interval: | |
| Blank casing diameter: | in. |
| Casing joints: | |
| Weight:lbs | s/ft. |
| Wall thickness or gauge | no.: |
| Blank casing interval: | ft. toft. |
| Blank casing diameter: | in. |
| Casing joints: | |
| Weight:lbs | s/ft. |
| Wall thickness or gauge | no.: |
| Grout interval: ft. to | ft. |
| Grout material: | |
| Grout interval: ft. to | 9ft. |
| Grout material: | |
| | |
| Screen / perforation material | |
| Screen / perforation opening | gs: |
| Screen / perforation intervals | S: |
| Fromft. to | |
| Slot size unit _ | |
| Fromft. to | _ft. |
| Slot size unit _ | |
| Gravel pack intervals: | |
| Gravel pack not used: | Gravel size in |
| From ft. to | ft. |
| Gravel pack not used: | |
| From ft. to | |

WELL WATER USE

| COMPLETION | | | | | |
|---|--|--|--|--|--|
| Depth of completed well:ft. | | | | | |
| Depth(s) groundwater encountered: | | | | | |
| (1) ft.; (2) ft.; | | | | | |
| (3) ft.; (4) dry well | | | | | |
| Static water level in well: ft. | | | | | |
| measured below land surface on (mm/dd/yy): | | | | | |
| measured above land surface on (mm/dd/yy): | | | | | |
| Estimated yield: gpm | | | | | |
| Water level was: ft. afterhours | | | | | |
| pumping gpm | | | | | |
| Pump installed? Yes No | | | | | |
| Water well disinfected? Yes No | | | | | |
| Date disinfected (mm/dd/yy): | | | | | |
| | | | | | |

| | POTENTIAL CONTAMINAT | |
|--------------------------------------|----------------------|----|
| Source | | |
| Distance from well: | Direction | _ |
| Source description: | | |
| Source: | | |
| Distance from well: | Direction | |
| Source description: | | |
| No potential source within 100 feet. | ce of contamination | |
| PERMIT & ID NUMBE | RS (AS REQUIRED) | |
| DWR Application No | .: | |
| | Code: | |
| Site Name: | | |
| KDHE UIC Class V F | | Nc |
| County Permit: Yes | No Permit ID: | |

of boreholes: _____ # of dewatering wells: ____

Lease Name & Well #:

Aquifer, if known:

LITHOLOGIC LOG

| FROM | то | LITHOLOGY INTERVALS |
|------|----|---------------------|
| | | |
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COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

| This water well was constructed | reconstructed | pursuant to the stated water well | | | | | |
|--|---------------------------------------|---|--|--|--|--|--|
| contractor's license and was complete | 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 | | , | | | | | |
| Kansas Water Well Contractor's License No 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: | | | | | | | |
| Send one copy to WATER WELL OWNER | and retain one for you | r records. Fee of \$5.00 for each constructed well. | | | | | |
| KANSAS DEPAR | TMENT 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

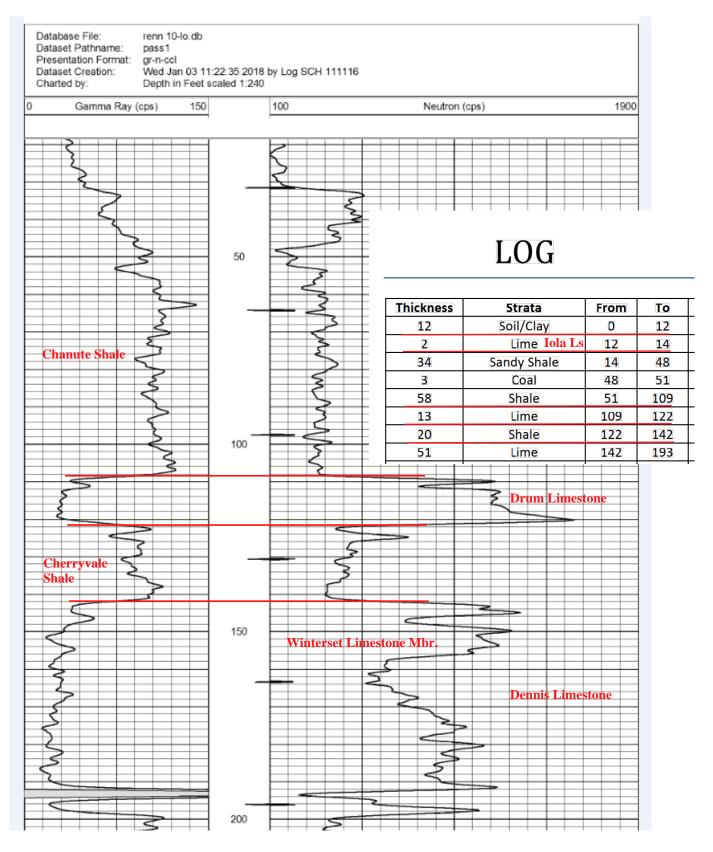
| Form | WWC5.2 - Water Well Record |
|------------|----------------------------|
| Doc ID | 1742187 |
| Well Owner | Daylight Petroleum |
| Contractor | Flint Hills Drilling #914 |

| From | То | Lithology Intervals |
|------|----|---|
| 0 | 5 | clay,light,yellowish,brown,slig htly moist |
| 5 | 10 | shale,unweathered,clayey,red dish,brown |
| 10 | 15 | shale,unweathered,sandy,light ,yellowish,brown |
| 15 | 20 | shale,unweathered,sandy,light ,grayish,brown |
| 20 | 25 | shale,unweathered,sandy,yell owish,brown |
| 25 | 32 | shale,unweathered,sandy,gra y,more bedded |
| 32 | 40 | shale,unweathered,dark,gray,t hinly bedded |
| 40 | 45 | shale,unweathered,sandy,light ,gray,thinly bedded |
| 45 | 50 | shale,unweathered,dark,gray,t o 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,t o black thinly bedded shale |
| 65 | 70 | shale,unweathered,gray,thinly bedded shale |
| 70 | 80 | shale,unweathered,gray |
| 80 | 90 | shale,unweathered,light,gray |

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

| From | То | 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,g ray |
| 115 | 120 | limestone,unweathered,dark,g ray |
| 120 | 125 | shale,unweathered,gray |
| 125 | 135 | limestone,unweathered,gray |
| 135 | 140 | limestone,unweathered,dark,g ray |

-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)



Daylight Petroleum

Johnson Lease Breakout Well Under Commercial Building Sec. 16-T30S-R16E Wilson Co.

Legend

Proposed Monitoring Wells

OInhausen Farms #6

Johnson # 6 CPMW-03

Johnson #103

Verdigris River

Google Earth

PMW-01

PMW-02

BOW-Anomoly

PMW 04

Johnson #106

Johnson #101

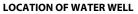
Johnson #7®

Renn #LO-10 (Strat Log Reference Well) N

700 ft

410 Rd

WATER WELL RECORD (WWC-5)



| WATER WELL RECORD (WWC-5) | | | WC-5) | DI | R | AF | Origina | KOLAR D al Recor | DOC ID . rd | Correction | _ WELL ID_ Chang | ge in We | ll Use |
|---------------------------|----|-----------|-------|---------|---|----------|---------|---------------------|----------------|------------|---------------------|----------|--------|
| Latitud | le | Longitude | | Section | | Township | | Range | | W Fraction | 1⁄4 | 1⁄4 | 1⁄4 |
| Datur | n | Elevation | | County | | | | | | | | | |

WATER WELL OWNER

| Name | |
|-----------------------|--|
| Business | |
| Address | |
| Well location | |
| at owner's address | |
| | |

CONSTRUCTION

| Borehole interval: | Borehole diameter: | | | | | | | | |
|---|--------------------|--|--|--|--|--|--|--|--|
| fromtoft. | in. | | | | | | | | |
| fromtoft. | in. | | | | | | | | |
| Casing height above land surface: | | | | | | | | | |
| If casing height is less than 12 in. has a variance been approved?* Yes | | | | | | | | | |
| *variance not required for monitoring or environmental remediation wells | | | | | | | | | |
| Casing type: | | | | | | | | | |
| Blank casing interval: | | | | | | | | | |
| Blank casing diameter: | in. | | | | | | | | |
| Casing joints: | | | | | | | | | |
| Weight:lbs | s/ft. | | | | | | | | |
| Wall thickness or gauge | no.: | | | | | | | | |
| Blank casing interval: | ft. toft. | | | | | | | | |
| Blank casing diameter: | in. | | | | | | | | |
| Casing joints: | | | | | | | | | |
| Weight:lbs | s/ft. | | | | | | | | |
| Wall thickness or gauge | no.: | | | | | | | | |
| Grout interval: ft. to | ft. | | | | | | | | |
| Grout material: | | | | | | | | | |
| Grout interval: ft. to | 9ft. | | | | | | | | |
| Grout material: | | | | | | | | | |
| | | | | | | | | | |
| Screen / perforation material | | | | | | | | | |
| Screen / perforation opening | gs: | | | | | | | | |
| Screen / perforation intervals | S: | | | | | | | | |
| Fromft. to | | | | | | | | | |
| Slot size unit _ | | | | | | | | | |
| Fromft. to | _ft. | | | | | | | | |
| Slot size unit _ | | | | | | | | | |
| Gravel pack intervals: | | | | | | | | | |
| Gravel pack not used: | Gravel size in | | | | | | | | |
| From ft. to | ft. | | | | | | | | |
| Gravel pack not used: | | | | | | | | | |
| From ft. to | | | | | | | | | |

WELL WATER USE

| COMPLETION | | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| Depth of completed well:ft. | | | | | | | | |
| Depth(s) groundwater encountered: | | | | | | | | |
| (1) ft.; (2) ft.; | | | | | | | | |
| (3) ft.; (4) dry well | | | | | | | | |
| Static water level in well: ft. | | | | | | | | |
| measured below land surface on (mm/dd/yy): | | | | | | | | |
| measured above land surface on (mm/dd/yy): | | | | | | | | |
| Estimated yield: gpm | | | | | | | | |
| Water level was: ft. afterhours | | | | | | | | |
| pumping gpm | | | | | | | | |
| Pump installed? Yes No | | | | | | | | |
| Water well disinfected? Yes No | | | | | | | | |
| Date disinfected (mm/dd/yy): | | | | | | | | |
| | | | | | | | | |

| | POTENTIAL CONTAMINAT | |
|--------------------------------------|----------------------|----|
| Source | | |
| Distance from well: | Direction | _ |
| Source description: | | |
| Source: | | |
| Distance from well: | Direction | |
| Source description: | | |
| No potential source within 100 feet. | ce of contamination | |
| PERMIT & ID NUMBE | RS (AS REQUIRED) | |
| DWR Application No | .: | |
| | Code: | |
| Site Name: | | |
| KDHE UIC Class V F | | Nc |
| County Permit: Yes | No Permit ID: | |

of boreholes: _____ # of dewatering wells: ____

Lease Name & Well #:

Aquifer, if known:

LITHOLOGIC LOG

| FROM | то | LITHOLOGY INTERVALS |
|------|----|---------------------|
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COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

| This water well was constructed | reconstructed | pursuant to the stated water well | | | | | | | | |
|---|---------------------------------------|-----------------------------------|--|--|--|--|--|--|--|--|
| contractor's license and was complete | 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, | | | | | | | | | | |
| Kansas Water Well Contractor's License No 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: | | | | | | | | | | |
| Send one copy to WATER WELL OWNER and retain one for your records. Fee of \$5.00 for each constructed well. | | | | | | | | | | |
| KANSAS DEPAR | TMENT 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

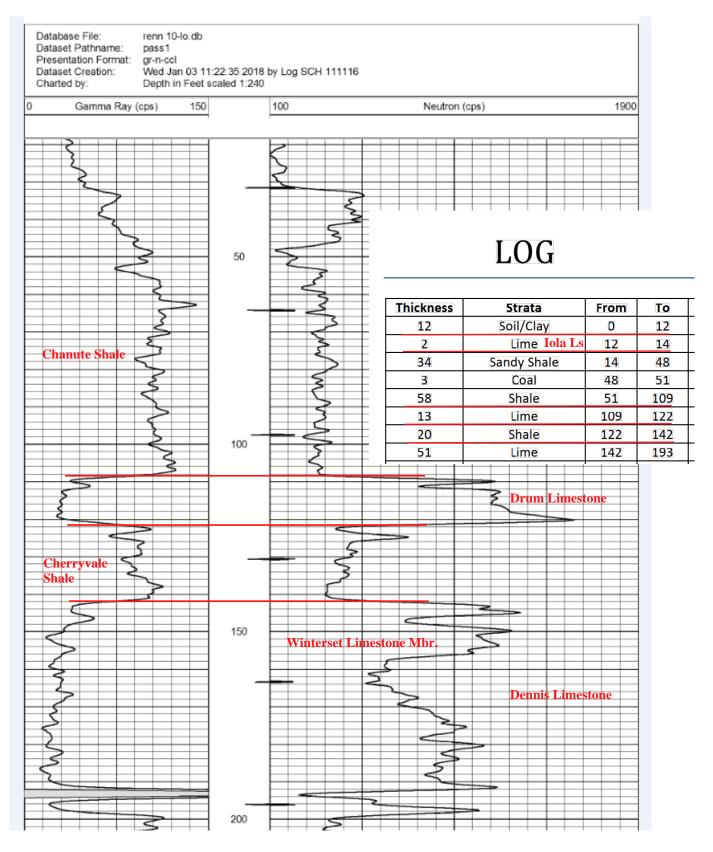
| Form | WWC5.2 - Water Well Record |
|------------|----------------------------|
| Doc ID | 1742198 |
| Well Owner | Daylight Petroleum |
| Contractor | Flint Hills Drilling #914 |

| From | То | 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,reddi sh,brown,and sandy shale |
| 15 | 20 | shale,unweathered,sandy,red dish,brown,with gray |
| 20 | 25 | shale,unweathered,sandy,gra y,with red and brown |
| 25 | 30 | sandstone,unweathered,light, gray,very competent/massive |
| 30 | 35 | shale,unweathered,sandy,gra y,layered |
| 35 | 40 | shale,unweathered,dark,gray,t hinly bedded,to black |
| 40 | 45 | shale,unweathered,sandy,light ,gray |
| 45 | 50 | shale,unweathered,sandy,dar k,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 |

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

| From | То | Lithology Intervals |
|------|-----|---|
| 70 | 110 | shale,unweathered,dark,gray,t hinly bedded,to black |
| 110 | 115 | shale,unweathered,sandy,dar k,gray |
| 115 | 120 | sandstone,unweathered,light, gray |
| 120 | 125 | shale,unweathered,sandy,dar k,gray,with some thin bedded pieces |
| 125 | 130 | limestone,unweathered,dark,g ray |
| 130 | 140 | shale,unweathered,dark,gray,t hinly 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)



Daylight Petroleum

Johnson Lease Breakout Well Under Commercial Building Sec. 16-T30S-R16E Wilson Co.

Legend

Proposed Monitoring Wells

OInhausen Farms #6

Johnson # 6 CPMW-03

Johnson #103

Verdigris River

Google Earth

PMW-01

PMW-02

BOW-Anomoly

PMW 04

Johnson #106

Johnson #101

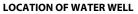
Johnson #7®

Renn #LO-10 (Strat Log Reference Well) N

700 ft

410 Rd

WATER WELL RECORD (WWC-5)



| WATER WELL RECORD (WWC-5) | | | WC-5) | DI | R | AF | Origina | KOLAR D al Recor | DOC ID . rd | Correction | _ WELL ID_ Chang | ge in We | ll Use |
|---------------------------|----|-----------|-------|---------|---|----------|---------|---------------------|----------------|------------|---------------------|----------|--------|
| Latitud | le | Longitude | | Section | | Township | | Range | | W Fraction | 1⁄4 | 1⁄4 | 1⁄4 |
| Datur | n | Elevation | | County | | | | | | | | | |

WATER WELL OWNER

| Name | |
|-----------------------|--|
| Business | |
| Address | |
| Well location | |
| at owner's address | |
| | |

CONSTRUCTION

| Borehole interval: | Borehole diameter: | | |
|---|--------------------|--|--|
| fromtoft. | in. | | |
| fromtoft. | in. | | |
| Casing height above land surface:i | | | |
| If casing height is less the has a variance been appr | oved?* Yes No | | |
| *variance not required fo or environmental remed | U | | |
| Casing type: | | | |
| Blank casing interval: | | | |
| Blank casing diameter: | in. | | |
| Casing joints: | | | |
| Weight:lbs | s/ft. | | |
| Wall thickness or gauge | no.: | | |
| Blank casing interval: | ft. toft. | | |
| Blank casing diameter: | in. | | |
| Casing joints: | | | |
| Weight:lbs | s/ft. | | |
| Wall thickness or gauge | no.: | | |
| Grout interval: ft. to | ft. | | |
| Grout material: | | | |
| Grout interval: ft. toft. | | | |
| Grout material: | | | |
| | | | |
| Screen / perforation material | | | |
| Screen / perforation openings: | | | |
| Screen / perforation intervals: | | | |
| Fromft. toft. | | | |
| Slot size unit _ | | | |
| From ft. to ft. | | | |
| Slot size unit _ | | | |
| Gravel pack intervals: | | | |
| Gravel pack not used: | Gravel size in | | |
| From ft. to | ft. | | |
| Gravel pack not used: | | | |
| From ft. to | | | |

WELL WATER USE

| COMPLETION | | | |
|---|--|--|--|
| Depth of completed well:ft. | | | |
| Depth(s) groundwater encountered: | | | |
| (1) ft.; (2) ft.; | | | |
| (3) ft.; (4) dry well | | | |
| Static water level in well: ft. | | | |
| measured below land surface on (mm/dd/yy): | | | |
| measured above land surface on (mm/dd/yy): | | | |
| Estimated yield: gpm | | | |
| Water level was: ft. afterhours | | | |
| pumping gpm | | | |
| Pump installed? Yes No | | | |
| Water well disinfected? Yes No | | | |
| Date disinfected (mm/dd/yy): | | | |
| | | | |

| | POTENTIAL CONTAMINA | τιο |
|--------------------------------------|---------------------|-----|
| Source | | |
| Distance from well: | Direction | |
| Source description: | | |
| Source: | | |
| Distance from well: | Direction | |
| Source description: | | |
| No potential source within 100 feet. | ce of contamination | |
| PERMIT & ID NUMBER | RS (AS REQUIRED) | |
| DWR Application No | .: | |
| | Code: | |
| Site Name: | | |
| KDHE UIC Class V F | | No |
| County Permit: Yes | No Permit ID: | |

of boreholes: _____ # of dewatering wells: ____

Lease Name & Well #:

Aquifer, if known:

LITHOLOGIC LOG

| FROM | то | LITHOLOGY INTERVALS |
|------|----|---------------------|
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COMMENTS

CONTRACTOR'S OR LANDOWNERS CERTIFICATION

| This water well was constructed | reconstructed | pursuant to the stated water well | |
|--|------------------------|---|--|
| contractor's license and was complete | ed on | 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, | | | |
| Kansas Water Well Contractor's License No 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: | | | |
| Send one copy to WATER WELL OWNER | and retain one for you | r records. Fee of \$5.00 for each constructed well. | |
| KANSAS DEPAR | TMENT 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

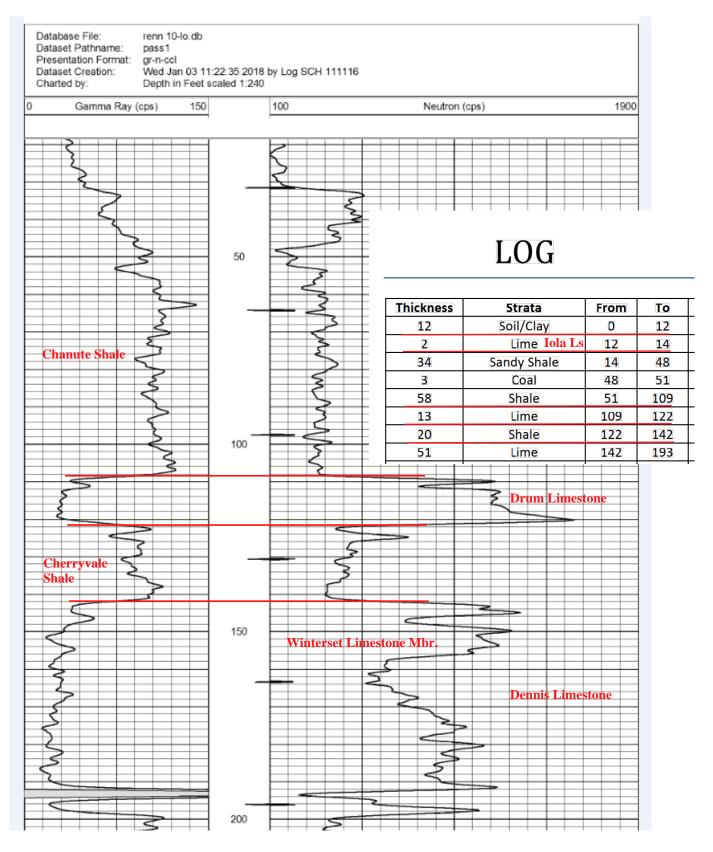
| Form | WWC5.2 - Water Well Record |
|------------|----------------------------|
| Doc ID | 1742203 |
| Well Owner | Daylight Petroleum |
| Contractor | Flint Hills Drilling #914 |

| From | То | 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,dar k,gray,thinly bedded,with black |
| 35 | 40 | shale,unweathered,light,gray,t hinly bedded,to black, with coal fragments |
| 40 | 45 | shale,unweathered,sandy,light ,gray,with massive, thick layers |
| 45 | 50 | shale,unweathered,sandy,gra y,massive/thicker bedding |
| 50 | 55 | shale,unweathered,dark,gray,t o black, with minor small coal fragments |
| 55 | 60 | shale,unweathered,gray |

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

| From | То | Lithology Intervals |
|------|-----|--|
| 60 | 65 | shale,unweathered,dark,gray,t hinly 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,t hinly bedded |
| 90 | 105 | shale,unweathered,dark,gray,t hinly bedded |
| 105 | 110 | limestone,unweathered,gray |
| 110 | 115 | limestone,unweathered,light,g ray |
| 115 | 120 | limestone,unweathered,light,g ray |
| 120 | 125 | shale,unweathered,dark,gray,t hinly 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)



Daylight Petroleum

Johnson Lease Breakout Well Under Commercial Building Sec. 16-T30S-R16E Wilson Co.

Legend

Proposed Monitoring Wells

OInhausen Farms #6

Johnson # 6 CPMW-03

Johnson #103

Verdigris River

Google Earth

PMW-01

PMW-02

BOW-Anomoly

PMW 04

Johnson #106

Johnson #101

Johnson #7®

Renn #LO-10 (Strat Log Reference Well) N

700 ft

410 Rd



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-3 85' | Lab ID: 6044 | 3738002 | Collected: 12/07/2 | 3 10:10 | Received: 12 | 2/08/23 16:00 | Matrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 60.0 | mg/L | 20.0 | 20 | | 12/19/23 16:11 | 1 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-3 139' | Lab ID: 6044 | 13738003 | Collected: 12/07/2 | 3 10:00 | Received: 12 | 2/08/23 16:00 | Matrix: Water | |
|-------------------------|------------------------------------|----------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 262 | mg/L | 20.0 | 20 | | 12/19/23 16:23 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-1 85' | Lab ID: 604 | 43738004 | Collected: 12/07/2 | 3 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 Meth Pace Analytica | | | | | | | |
| Chloride | 34.9 | mg/L | 5.0 | 5 | | 12/21/23 00:42 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60443738

| Sample: PMW-1 139' | Lab ID: 6044 | 3738005 | Collected: 12/07/2 | 3 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 Meth Pace Analytica | | | | | | | |
| Chloride | 848 | mg/L | 100 | 100 | | 12/21/23 00:54 | 16887-00-6 | |



QUALITY CONTROL DATA

| Pace Project No.: 60443738 | | | | | | | | | | | |
|-------------------------------|---------------------|----------------|-------------|--------------------|------------|--------------|------------|------------|-------|-----|------|
| QC Batch: 877650 | | Analys | sis Method | d: | EPA 300.0 | | | | | | |
| QC Batch Method: EPA 300.0 | | Analys | sis Descrij | ption: | 300.0 IC A | nions | | | | | |
| | | Labora | atory: | | Pace Analy | tical Servic | es - Kansa | s City | | | |
| Associated Lab Samples: 60443 | 3738001, 6044373800 | 2, 60443738 | 8003, 604 | 43738004, | 60443738 | 005 | | | | | |
| METHOD BLANK: 3476253 | | Ν | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: 60443 | 3738001, 6044373800 | 2, 60443738 | | | 60443738 | 005 | | | | | |
| Parameter | Units | Blank Resul | | Reporting Limit | Ana | lyzed | Qualifier | s | | | |
| Chloride | mg/L | | ND | 1. | | 23 15:25 | Qualifier | | | | |
| | | | | | | | | | | | |
| METHOD BLANK: 3477927 | | Ν | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: 60443 | 3738001, 6044373800 | 2, 60443738 | 8003, 604 | 43738004, | 60443738 | 005 | | | | | |
| _ | | Blank | | Reporting | | | | | | | |
| Parameter | Units | Resu | lt | Limit | Ana | lyzed | Qualifier | S | | | |
| Chloride | mg/L | | ND | 1. | 0 12/20/2 | 23 23:28 | | | | | |
| LABORATORY CONTROL SAMPL | E: 3476254 | | | | | | | | | | |
| | 2. 0470204 | Spike | LC | S | LCS | % R | ec | | | | |
| Parameter | Units | Conc. | Res | sult | % Rec | Lim | its (| Qualifiers | | | |
| Chloride | mg/L | 5 | 5 | 4.7 | 9 | 95 | 90-110 | | _ | | |
| LABORATORY CONTROL SAMPL | E: 3477928 | | | | | | | | | | |
| | | Spike | LC | S | LCS | % R | ec | | | | |
| Parameter | Units | Conc. | Res | sult | % Rec | Lim | its (| Qualifiers | | | |
| Chloride | mg/L | 5 | 5 | 4.8 | 9 | 96 | 90-110 | | _ | | |
| MATRIX SPIKE & MATRIX SPIKE | DUPLICATE: 3476 | 255 | | 3476256 | | | | | | | |
| WATKIN OF INE & WATKIN OPINE | DUFLICATE. 34/0 | Zəə MS | MSD | 5410230 | , | | | | | | |
| | 60443252002 | Spike | Spike | MS | MSD | MS | MSD | % Rec | | Max | |
| Parameter | Units Result | Conc. | Conc. | Result | Result | % Rec | % Rec | Limits | RPD | RPD | Qual |
| Chloride | mg/L 22.1 | 25 | 25 | 47.7 | 47.4 | 102 | 101 | 80-120 | 1 | 15 | |
| SAMPLE DUPLICATE: 3476257 | | | | | | | | | | | |
| | | 60443252 | 2002 | Dup | | | Max | | | | |
| Parameter | Units | Resu | | Result | RF | D | RPD | Quali | fiers | | |
| Chloride | mg/L | | 22.1 | 21. | | 1 | 1: | | | | |

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.



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.



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 | | |

| | | WO#:60443738 |
|--|------------------------------|--|
| Pace DC#_Title: ENV-FRM | -LENE-0009_Samp | ole Co 50443738 |
| AMALYHICAL SERVICES Revision: 2 Eff | fective Date: 01/12/20 | 022 Issued By: Lenexa |
| Client Name: UE9_091 Topeka | | |
| Courier: FedEx 🗆 UPS 🗆 VIA 🗆 Clay 🗆 | PEX 🗆 ECI 🗆 | Pace 🗗 Xroads 🗆 Client 🗆 Other 🗆 |
| Tracking #: Pa | ace Shipping Label Use | d? Yes □ No I |
| Custody Seal on Cooler/Box Present: Yes 🕼 No 🗆 | Seals intact: Yes 🖆 | No 🗆 |
| Packing Material: Bubble Wrap D Bubble Bags | | None 🗗 Other 🗆 |
| . ~ ~ | of Ice: MeD Blue No | |
| Cooler Temperature (°C): As-read Corr. Fac | ctor Correc | ted <u>1,4</u> Date and initials or person examining contents: |
| Temperature should be above freezing to 6°C | | AF 12/12 |
| Chain of Custody present: | | |
| Chain of Custody relinquished: | Ves No N/A | |
| Samples arrived within holding time: | | |
| Short Hold Time analyses (<72hr): | □Yes <mark>12</mark> No □N/A | |
| Rush Turn Around Time requested: | □Yes ⊡No □N/A | |
| Sufficient volume: | | |
| Correct containers used: | Dres □No □N/A | |
| 146/2 | | |
| Pace containers used: | . / | |
| Containers intact: | | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | Yes No DATA | |
| Filtered volume received for dissolved tests? | □Yes □No □ N/A | |
| Sample labels match COC: Date / time / ID / analyses | | |
| Samples contain multiple phases? Matrix: WT | | |
| Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT Cyanide water sample checks: | □Yes □No NGHATA #: | List sample IDs, volumes, lot #'s of preservative and the date/time added. |
| Lead acetate strip turns dark? (Record only) | □Yes □No | |
| Potassium iodide test strip turns blue/purple? (Preserve) | □Yes □No | |
| Trip Blank present: | | |
| Headspace in VOA vials (>6mm): | | |
| Samples from USDA Regulated Area: State: | | |
| Additional labels attached to 5035A / TX1005 vials in the field | | |
| Client Notification/ Resolution: Copy COC | | Field Data Required? Y / N |
| Person Contacted: Date/ | /Time: | |
| Comments/ Resolution: | | |
| Project Manager Review: | Date | |

| (Pace* | eace - uocation requesteo (Litty/State): Pace Analytical Xansas 9608 Loiret Bivd. Lenexa, KS 66219 | | | CHAIN-OF-CI Chain-of-Cu | USTODY stody is a LEGA | CHAIN-OF-CUSTODY Analytical Request Document Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields | tument | | LAB USE ONLY- Affix Workorder/Login Label Here | orkorder/Login Label | Hars | |
|---|--|----------------------------|------------|--|---------------------------|---|-------------------|---------------------------------------|--|-------------------------|--|----------|
| Company Name: | UES_GSI Topeka | | | Contact/Report To: | Alexandra Richards | chards | | | | | | |
| Street Address: | 2900 NW Button Rd, Ste. A-7, Topeka, KS 66618 | 518 | | Phone #: | 785-409-1320 | 0 | | | 642 | | | - |
| | | | | E-Mail: | arichards@t | arichards@teamues.com | | | Scan QR Code for instructions | instructions | | |
| | | | | Cc E-Mail: | kwheeler@t | kwheeler@teamues.com | | | | | | - |
| Project Name: | 23T2177.01 Davlicht Petroleum | | | Invoice To: | Accounts Payable | yable | | | | | | - |
| | | | | Invoice E-Mail: | ap@gsinetwork.com | ork.com | | S | Specify Container Size ** | **Con | **Container Size: (1) 1L, (2) 500mL, (3) 250mL (4) 125mL (5) 100mL (6) 40mL vial (7) 5nCore (e) | a |
| Site Collection Info/Fa | Site Collection Info/Facility ID (as applicable): | | | Purchase Order # (if | UES Rates | | | I I I I I I I I I I I I I I I I I I I | dentify Container Preservative Type*** | Terrad | TerraCore, (9) Other *** Precentative Tunes: (1) None (2) HNO2 (2) | T |
| | | | | | | | | | | H2SO4 NaHSC | H2SO4, (4) HCl, (5) NaOH, (6) Zh Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) | 10) |
| Time Zone Collected: | []AK []PT []MT [X]CT [| | | County / State origin of sample(s): | f sample(s): | | | | Analysis Kequested | MeoH | MeOH, (11) Other Proj. Mgr: | Т |
| ples: | | Regulatory | Program | Regulatory Program (DW, RCRA, etc.) as applicable: | plicable: | | | Ĩ | | <u>A</u> | AcctNum / Client ID: | |
| [] Level II | [] Level III [] Level IV | | Rush (| Rush (Pre-approval required): | :(p; | DW PWSID # or WW Permit # as applicable | cable: | | | AlnO | | |
| | | [] 2 Day | []3di | []2Day []3day []5day []Other_ | ler | | | | | | | |
| [] Other | | Date Results Requested: | d: d: | | | Field Filtered (if applicable): [] Yes | Yes [] No | | | | :mplate: | dwes |
| * Matrix Codes (Insert (V), Other (OT), Surfac | * Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Gaulk | d Water (G | tW), Wast | te Water (WW), Produc | tt (P), Soil/Solic | S | oassay (B), Vapor | Iroide | | H <u>E</u> | Prelog / Bottle Ord, ID: | |
| | Customer Sample ID | Matrix * Comp / | Comp / | Collected | Start) | Composite End | ž | _ | | | | |
| | | | Grab | Date Time | Time | Date Time CL2 | Plastic Glass | | | | Sample Comment | - |
| PMW-2 139' | | > | U | 12/7/2023 | 9:05 | | F | 2 | | 9 | 041373B | T |
| PMW-3 85' | | > | σ | 12/7/2023 | 10:10 | | H | | | | | 1 |
| PMW-3 139' | | 3 | σ | 12/7/2023 | 10:00 | | FT | | | | | |
| PMW-1 85' | | 3 | υ | 12/7/2023 | 11:07 | | F | | | | | 1 |
| PMW-1 139' | | 3 | σ | 12/7/2023 | 10:57 | | F | | | | | T |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | |
| Customer Remarks / | customer Remarks / Special Conditions / Possible Hazards: | | 1 | | | Collected By: Printed Name: | · Rich rude | | Additional Instructions from Pace®: | | | T |
| | | | | | | Te | | # Coolers: | Thermometer ID: Corre | Correction Factor (°C): | Obs. Temp. (°C) Corrected Temp. (°C) | n |
| Belingurhed by/Commit | an Sol As Commences | S | Date/Ti | 18/23 | 300 | Received by/Company: (Signature) | | Parel - | ATT 1219 161 | 06 Tracking Number | er: | 1 |
| the net 14 | (a)fuernes | | Date/1 | Time: | | Received by/Compan y: (S ignature) | | Date/fime | /ime: | Delivered by: | [] In- Person [] Courier | - |
| Heinquiched by/Company: (Signature) | y: (Signature) | | Date/Time: | Time: | | Received by/Company: (Signature) | | Date/ | Date/Time: | |] FedEX [] UPS [] Other | |
| Reinguished by/Company: (Signature) | yr (Signature) | | Date/Time: | Time: | | Received by/Company: (Signature) | | Date/ | Date/Time: | Page: | of | r – |
| Submitting a sample | 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/ | dgment ar | nd accep | tance of the Pace [®] T | erms and Col | iditions found at https://www.pacelab | os.com/resource | -library/resource/pace-terms | and-conditions/ | ENV-FRM-C | ENV-FRM-CORQ-0019_v01_082123 © | ĩ |

| 2 | Other Other Other Other D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D | | Misc. | Wipe/Swab 120ml Coliform Na Thiosulfate | Ziploc Baq | Air Filter | Air Cassettes | Summa Can | | | Matrix | | Water | Non-animalis Linuid | DII | Wipe | Drinking Water | | | |
|---|---|-----------------|-------------------------|--|----------------------|--|------------------------|------------------------|-------------------------------------|---------------------------|-----------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|---------------------------|--------------------|---------------------|--------------------|
| 2428-1 | SE48 | | | l SP51 | ZPLC | ÅΓ | 5 B | | | | | | N | NAI | | WP | DW | | | |
| 321 | Bb3E | | | | | | | | | | | | ed | | | | | | | |
| 2 | ВРЗИ | | | | | | | | | tic | a a | | 250mL HNO3 plastic - field filtered | cit. | 2 | 0 | Ę | | | |
| - | ВР1И | | | | | astic | ate | tic . | Istic | 500mL unpreserved plastic | 500mL NaOH, Zn Acetate | : ti | tic - fie | 250ml Innreened plastic | istic | 250mL NaOH, Zn Acetate | 125mL unpreserved plastic | tic | 125mL H2SO4 plastic | 1 |
| # v | | | Plastic | lastic astic | olastic | 1L unpreserved plastic | 500ml NAOH plastic | 500mL HNO3 plastic | 500mL H2SO4 plastic | reserve | NH, Zn | 250mL NaOH plastic | 250mL HNO3 plastic | spid cr | 250mL H2SO4 plastic | JH, Zn | eserve | 125mL HNO3 plastic | 125mL H2SO4 plastic | |
| Profile # | BP2U | | B | 1L NAOH plastic 1L HNO3 plastic | 1L H2SO4 plastic | prese | | | L H2S | IL unpi | IL NaC | IL NaC | | | I H2S | IL NaC | IL unpr | IL HNC | IL H2S | |
| îĨĨ | 0148 | | 1 | 1 1 1 1 1 1 | 1L H | 11 ur | 500m | 500r | 500rr | 500rr | 500m | 250m | 2500 | 250m | 250m | 250m | 125rr | 125r | 125r 16oz | |
| | M@DN | | | | | | | | | | | | | | | | | _ | = | , |
| | Mekn | | | BP1N | BP1S | BP1U | BP 12 | BP2N | BP2S | BP2U | BP2Z | BP3C | BP3F BP3N | BP311 | BP3S | BP3Z | BP4U | BP4N | BP4S WPDU | |
| | 1GEU | | | | | | | | glass | | | | | | | | | | | |
| | VG2D | | | | | wide | 201 | | 1L Na Thiosulfate clear/amber glass | | SS | ass | ass | 200 | SS | ISS | | | | |
| | ₩94U | | | | | amber wide | 1L HCI amber glass | glass | clear/a | 1liter unpres amber glass | 500mL HNO3 amber glass | 500mL H2SO4 amber glass | 500mL HZ504 amber glass 500ml unnres amher risse | 250mL unpres amber glass | 125mL unpres amber glass | 100mL unpres amber glass | 5 | | | |
| S S | SEDA | | | | oil jar | erved a | er das | amber | sulfate | s ambe | 03 amt | 04 ar | Tes an | tes am | es am | es am | | | | |
| leu . | Vesn | | | 402 clear soil jar | 2oz clear soil jar | 4oz unpreserved | 1L HCI amber glass | 1L H2SO4 amber glass | a Thios | unpre: | IL HN | IL H2S | | | | IL unpr | | | | |
| 552 Topeka aht Vetroleum | Negi | | 001 | 402 G | 20Z (| 402 L | | 1 | 1L N | 1liter | 5001 | 500 | | 250n | 125n | 100n | | | | _ |
| de d | нгөа | | - | | ∍ | _ _ | | 0 | | | _ | | | | | | | | | k |
| 4 L | 861U | | Glass | WGFU | WG2U | JGFU | AG1H | AG1S | AG1T | AG1U | AG2N | AG2S | AG211 | AG3U | AG4U | AG5U | | | | 0 |
| gh G | DG9B | | Ű | | | | | | | | | | | | | | | | | 5 |
| S S | W690 | | | | | | | q | | | vial | | | SS | E | | | | 93 | - |
| D C | n690 | | loin a | 40mL HCI amber voa via | vial | 40mL TSP amber vial 40mL H2SO4 amber vial | 40mL Na Thio amber via | 40mL amber unpreserved | 15 | ar vial | 40mL unpreserved clear vial | glass | glass | 250mL Unpres Clear glass | | | | | | 10000100 |
| | ∩6Ð∧ | | 40ml hisulfata daar via | mber / | 40mL MeOH clear vial | 40mL TSP amber vial 40mL H2SO4 amber | nio am | r unpre | 40mL HCI clear vial | 40mL Na Thio. clear vial | served | 1liter H2SO4 clear glass | 250mL HCL Clear plass | res Cle | oil jar | | | | | |
| ve Date: Client: Site: | DG90 | | hieuff | HCIa | MeO | H2SP 8 | Na Tr | ambe | HCIO | Na Tr | unpre | HZSO | | L Unpi | 16oz clear soil jar | | | | | |
| Effect | DC9H | | 40ml | 40mL | 40mL | 40mL | 40m | 40mL | 40m | 40mL | 40mL | 1 liter | 250m | 250m | 16oz | | | | | Imber: |
| Revision: 3 Effective Date: Issued by: Lenexa Client: | Н6ЭЛ | | | | _ | | | | | | | | | | 5 | | | | | Work Order Number: |
| Ke | xham Zana and Andrews | Container Codes | DG9R | DG9H | DG9M | D690 | DG9T | DG9U | VG9H | VG9T | VG9U | | BG3H | BG3U | WGDU | | | | | Work C |
| | COC Line Item 1 5 5 6 6 8 8 8 9 9 9 10 11 | aine | | | | | | | | | | | | | | | | | | |

941414AD

Qualtrax Document ID: 30422



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,

Astantos m. Wilson

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

Enclosures





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



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 |



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



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-2GP | Lab ID: 6044 | 4220001 | Collected: 12/18/2 | 3 11:30 | Received: 12 | /19/23 08:45 N | Aatrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 260 | mg/L | 20.0 | 20 | | 12/21/23 20:04 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-1GP | Lab ID: 6044 | 4220002 | Collected: 12/18/2 | 23 12:50 | Received: 12 | 2/19/23 08:45 M | Matrix: Water | |
|-------------------------|------------------------------------|---------|--------------------|----------|--------------|-----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytical | | | | | | | |
| Chloride | 71.9 | mg/L | 20.0 | 20 | | 12/21/23 20:16 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-4D | Lab ID: 6044 | 14220003 | Collected: 12/18/2 | 3 12:00 | Received: 12 | 2/19/23 08:45 | Matrix: Water | |
|-------------------------|-----------------------------------|----------|--------------------|---------|--------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytica | | | | | | | |
| Chloride | 546 | mg/L | 100 | 100 | | 12/22/23 14:21 | 1 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-4I | Lab ID: 604 | 44220004 | Collected: 12/18/2 | 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 Met Pace Analytica | | | | | | | |
| Chloride | 680 | mg/L | 100 | 100 | | 12/22/23 14:33 | 16887-00-6 | |



Project: 23T2177.01 DAYLIGHT PETROLEUM

Pace Project No.: 60444220

| Sample: PMW-4S | Lab ID: 6044 | 14220005 | Collected: 12/18/2 | 23 12:30 | Received: 12 | 2/19/23 08:45 M | Matrix: Water | |
|-------------------------|-----------------------------------|----------|--------------------|----------|--------------|-----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 300.0 IC Anions 28 Days | Analytical Meth Pace Analytica | | | | | | | |
| Chloride | 523 | mg/L | 100 | 100 | | 12/22/23 14:44 | 16887-00-6 | |



QUALITY CONTROL DATA

| Project: 23T217 Pace Project No.: 604442 | | GHT PETROLEU | JM | | | | | | | | | |
|---|-----------|-----------------------|----------------|------------------------|--------------------|----------------------------|-------------|--------------|-----------------|------|------------|------|
| QC Batch: 87800 |)3 | | Anal | ysis Metho | d: | EPA 300.0 | | | | | | |
| QC Batch Method: EPA 3 | 800.0 | | Anal | ysis Descri | ption: | 300.0 IC Ani | ons | | | | | |
| Associated Lab Samples: | 604442200 | 001, 6044422000 | | oratory: 20003, 604 | | Pace Analyti 6044422000 | | es - Kansas | s City | | | |
| METHOD BLANK: 347787 | 2 | | | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: | 604442200 | 001, 6044422000 | 2, 6044422 | 20003, 604 | 44220004, | 6044422000 |)5 | | | | | |
| Parameter | | Units | Bla Res | | Reporting Limit | Analy | zed | Qualifiers | 6 | | | |
| Chloride | | mg/L | | ND | 1 | .0 12/21/23 | 3 17:36 | | | | | |
| METHOD BLANK: 347871 | 6 | | | Matrix: W | ater | | | | | | | |
| Associated Lab Samples: | 604442200 | 001, 6044422000 | 2, 6044422 | 20003, 604 | 44220004, | 6044422000 |)5 | | | | | |
| | | | Bla | | Reporting | | | | | | | |
| Parameter | | Units | Res | ult | Limit | Analy | zed | Qualifiers | 6 | | | |
| Chloride | | mg/L | | ND | 1 | .0 12/22/23 | 3 13:11 | | | | | |
| LABORATORY CONTROL | SAMPLE: | 3477873 | | | | | | | | | | |
| Parameter | | Units | Spike Conc. | LC Res | | LCS % Rec | % R Limi | | Qualifiers | | | |
| Chloride | | mg/L | | 5 | 4.9 | 97 | , (| 90-110 | | _ | | |
| LABORATORY CONTROL S | SAMPLE: | 3478717 | | | | | | | | | | |
| Parameter | | Units | Spike Conc. | LC Res | | LCS % Rec | % R Limi | | Qualifiers | | | |
| Chloride | | mg/L | | 5 | 4.8 | 95 | 5 9 | 90-110 | | _ | | |
| MATRIX SPIKE & MATRIX | SPIKE DUP | LICATE: 3477 | 874 MS | MSD | 347787 | 5 | | | | | | |
| Parameter | Units | 60444191001 Result | Spike Conc. | 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 | | |
| MATRIX SPIKE SAMPLE: | | 3477876 | | | | | | | | | | |
| Parameter | | Units | | 8752002 esult | Spike Conc. | MS Result | | MS 6 Rec | % Rec Limits | | Qualit | iers |
| 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

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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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:23T2177.01 DAYLIGHT PETROLEUMPace 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 | | |

| | | | | | | | WO# | :604 | 442 | 20 |
|---|--|--|--------------|-------------------------|------------------|-----------------------|-------------------------------|-----------------|----------------|-----------|
| | Pace | DC#_Title: El | NV-FRM-L | -ENE-000 | €]Sam | ple Co | 6044422 | | | |
| | I AMALYTICAL SERVICES | Revision: 2 | Effe | ctive Date: (|)1/12/2 | 022 | Issued By: Le | пеха | | |
| Client Nar | ne: Univer | sal Eng | GSE | | | | | | | |
| Courier: Tracking #: | FedEx UPS | VIA CO VI | ~ | PEX □ E e Shipping L | CI □ abel Use | Pace d? Ye | | Client 🗆 | Other 🗆 | |
| Custody Sea | I on Cooler/Box | Present: Yes | No 🗆 | Seals inta | ct: Yes [| No | | - | | |
| Packing Mate | | | ibble Bags 🛛 | \sim | oam □ | | lone 🗗 Of | her 🗆 | | |
| Thermomete | - | al g a c | | | Blue No | | | Date and ir | nitials of per | son |
| | ., | | Corr. Facto | or -0.3 | Correc | ted $\underline{\nu}$ | .7 | examining | | |
| Temperature st | nould be above free: | zing to 6°C | | 1 | - | T | | TF | 141º1 | |
| Chain of Cust | tody present: | | | | b □N/A | | | | | |
| Chain of Cust | tody relinquished: | | | Ves DN | ⊳ □N/A | | | | | |
| Samples arriv | ved within holding | time: | | | DN/A | | | | | |
| Short Hold T | ime analyses (<7 | '2hr): | | 🗆 Yes 🕅 | 5 □n/a | | | | | |
| Rush Turn A | round Time requ | ested: | | 🗆 Yes 🖿 | | | | | | |
| Sufficient volu | ime: | | | | ⊳ □n/A | | | | | |
| Correct contai | iners used: | | | | D □N/A | | | | | |
| Pace containe | ers used: | | _ | | D □N/A | | | | | |
| Containers int | tact: | | | | ⊳ □n/A | | | | | |
| Unpreserved : | 5035A / TX1005/1 | 006 soils frozen in | 48hrs? | □Yes □N | | | | | | |
| Filtered volum | ne received for dis | solved tests? | | □Yes □N | | | | | | |
| Sample labels | s match COC: Dat | e / time / ID / analy | ses | | o □n/a | | | | | |
| Samples cont | ain multiple phase | es? Matrix: | WT | DYes N | N/A | | | | | |
| (HNO ₃ , H ₂ SO ₄ , (Exceptions: V0 | HCI<2; NaOH>9 Su OA, Micro, O&G, KS | /ation ìn complianc lfide, NaOH>10 Cyar s TPH, OK-DRO) | | □Yes □Ne | | | ample IDs, volun me added. | nes, lot #`s of | preservativ | e and the |
| l . | r sample checks: strip turns dark? (l | Record only) | | |) | | | | | |
| | | blue/purple? (Pre | serve) | □Yes □N |) | | | | | |
| Trip Blank pre | sent: | | | □Yes □No | | | | | | |
| Headspace in | VOA vials (>6mr | n): | | □Yes □No | | | | | | |
| Samples from | USDA Regulated | Area: State: | | □Yes □No | | 2 | | | | |
| | | 35A / TX1005 vials | | | 1 | | | | | |
| | ation/ Resolution | | Copy COC to | | / N | Fi | ield Data Required | 1? Y / N | | |
| Person Contac | cted: | | Date/T | ime: | | | | | | |
| Comments/ Re | esolution: | | | -3 | | | | | | |
| Project Manag | ger Review: | | | | Dat | e: | | | | |

| Pace [®] Location Requested (City/State): Pace Analytical Kanasa 9608 Loiret Blvd., Lenexa, KS 66219 | | CHAIN-OF-CUS | CHAIN-OF-CUSTODY Analytical Request Document Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields | ■ 1 AB USE ONLY- Affix W | LAB USE ONLY- Affix Workerder/Login Label Here |
|---|---|--|--|--|--|
| Company Name: Universal Engineering-dba GSI_Topeka Street Address: 2900 NW Button Rd, Topeka, KS 66618 | | Contact/Report To: Ale Phone #: (78 E-Mail: arii Cc E-Mail: | Alexandra (Alex) Richards (785)409-1320 arichards@gsinetwork.com | E Scan QR Code for instructions | instructions |
| Customer Project #: Project Name: 2372177.01 Daylight Petroleum | | | Alexandra (Alex) Richards arichards@gsinetwork.com | Specify Container Size ** | **Container Size: (1) 11, (2) 500mL (3) 250mL (4) 125mL, (5) 100mL (6) 40mL vial, (7) EnCore, (8) TerraGore, (9) other |
| Site Collection Info/Facility ID (as applicable): | | Purchase Order # (if applicable): Quote #: | | Identify Container Preservative Type*** Analysis Requested | *** Preservaive Types (1) None, (2) HND3, (3) H3504, (4) H40, (5) NaDH, (6) Zn Areatae, (7) NAHS04, (8) Sod, Thiosuffate, (9) Ascorbit Acid, (10) MeOH (11) Other |
| lected: [] AK [] PT bles: |] ET Regulatory Progra |] ET County / State origin of sample(s): Regulatory Program (DW, RCRA, etc.) as applicable: | mple(s): Kansas able: | | Proj. Mgr. Heather Wilson AcctNum / Client ID: |
| [] Level II [] Level III [] Level IV [] EQUIS | Rus []2 Day []3 | Rush (Pre-approval required): []2 Day []3 day [] Other_ | DW PWSID # or WW Permit # as applicable: | | ormance ide |
|] Qther. * Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Grou | Date Results Requested: und Water (GW), W | /aste Water (WW), Product (P | [] Other Ereld Filtered (if applicable): [] Yes [] No * Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WV), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), | | Profile / Template: 15928 Prelog / Bottle Ord ID: |
| Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk Customer Sample ID | Matrix * Comp / Grab | Collected (or Composite Start) | True Composite End Res. Number & Type of Composite End Composite End Composite End Composite End Composite End Composite Compo | 100°0 CHI | EZ 3032416 Sample Comment |
| PMM-26P | 6W 6 | 12.14.23 | 11:30 Jack IIIC 11:00 | | ocenth 09 |
| DMM-IGP | 6W 6 | 12.18.23/2:50 | 2:50 2 | | |
| Pinn-40 | GW G | 12.18.23 12:00 | | | |
| IH-MUC | 6W 6 | 12.18.23 22:15 | | X | |
| pmm-45 | 6W 6 | 12.18.2312:30 | 2:30 Z | × | |
| | | | | | |
| | | | | | |
| | | | | | |
| Customer Remarks / Special Conditions / Possible Hazards: | t | | Collected By: Monte Brcon | Additional Instructions from Pace®: | |
| / | 18 | | 11 | TJSE ID: | Correction Factor ("C): Obs Temp. ("C) Corrected Temp. ("C) |
| The figure | | Date/Time: 12.18.25 15. | 30 Received by Conpany (Schopure) | 12.15,23 O&4 | Tracking Number: |
| Relinquished by/Company: (Neargure) | <u> </u> | ate/Time: | Received by/Company: (Signature) | Date/Time: | Delivered by: [] In- Person [] Courier |
| Binquished by/Company: (Signature) | Ó | Date/Time: | Received by/Company: (Signature) | Date/Time: | [] FedEX [] UPS [] Other |
| Refinquished by/Company: (Signature) Jo | 0 | Date/Time: | Received by/Company: (Signature) | Date/Time: | Page: 1 of 1 |
| submitting a sample via this chain of custody constitutes acknow | wledgment and ac | ceptance of the Pace® Terr | Sommitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-libran/resource-terms-and-conditions/ | library/resource/pace-terms-and-conditions/ | ENV-FRM-CORQ-0019_v01_082123 © |

| | | μμει brc hbD∩ bb3Σ | z | | | | | | | | | | | | | | MISC. | 120mL Coliform Na Thiosulfate | Ziploc Baq | Air Filter | Air Cassettes | Terracore Kit | Summa Can | | | Matrix | | Water | Solid | Non-aqueous Liquid | OIL | Wipe | Drinking Water | | | |
|--|-----------------|-----------------------------|----|---|---|---|---|---|---|----|---|----|----|----|-----------------|---------|---------------------------|-------------------------------|----------------------|------------------------|--------------------------|--------------------------|----------------------|-------------------------------------|---------------------------|-----------------------------|--------------------------|-------------------------------------|--------------------------|---------------------------|--------------------------|--------------------------|---------------------------|--------------------|---------------------|--------------------------|
| 5028 | | 863C 8632 | + | | | | | | | | | | | | | | - | SP51 | ZPLC | AF | o | ж | _ | _ | | | | WT | SL | NAL | ОГ | WP | DW | | | - |
| 1 | | 363E | | | | | | | | - | | | | | | | | | | | | | | | | | | 250mL HNO3 plastic - field filtered | | | | | | | | |
| | | NIde | 3 | | | | | | | | | | | | 1 | | | | | ţi. | e | 0 | | <u>.0</u> | plastic | cetate | | : - field | | plastic | <u>0</u> | cetate | plastic | | 0 | OISTIC |
| | | 3b30 | | - | L | - | ~ | Ļ | T | T | | T | | | 1 | .e | | tic | stic | ed plas | Acetat | plastic | plastic | 4 plast | served | , Zn Ac | plastic | plastic | plastic | served | 4 plast | , Zn Ac | served | plastic | 4 plast | navia |
| Profile # | Notes | BP2U | 3 | T | T | T | Ī | | | T | | T | T | | 1 | Disetic | DH nlas | 03 plas | O4 pla | eserve | H, Zn | NAOH | HNO3 | H2SQ | unpres | NaOH | NaOH | HN03 | HN03 | unpres | H2SO | NaOH | unpres | HN03 | HZSO | press |
| ā. | | 0148 | 9 | | | Γ | | | T | | | | T | | 1 | | 11 NAC | 1L HNO3 plastic | 1L H2SO4 plastic | 1L unpreserved plastic | 1L NaOH, Zn Acetate | 500mL NAOH plastic | 500mL HNO3 plastic | 500mL H2SO4 plastic | 500mL unpreserved plastic | 500mL NaOH, Zn Acetate | 250mL NaOH plastic | 250mL | 250mL HNO3 plastic | 250mL unpreserved plastic | 250mL H2SO4 plastic | 250mL NaOH, Zn Acetate | 125mL unpreserved plastic | 125mL HNO3 plastic | 125mL H2SO4 plastic | 1002 Unpresserved pistic |
| 1 | 1 | NGDN | N | | | Γ | | × | | | | | T | | 1 | | ľ | | Ì | Ì | | | - | | | | | | | | | | Ì | | Ť | 1 |
| | | NGKN | | | | | | | | | | | | | 1 | | BP1C | BP1N | BP1S | BP1U | BP1Z | BP2C | BP2N | BP2S | BP2U | BP2Z | BP3C | BP3F | BP3N | BP3U | BP3S | BP3Z | BP4U | BP4N | BP4S | |
| | Vetraleum | IGFU | | | | | | | | | | | | | 1 | | Ī | | - | | - | | | | | | | | 1 | | | | | =. | _12 | |
| | 461 | ves∪ | 1 | | | | | | | | | | | | | | | | | qe | s | | | 1L Na Thiosultate clear/amber glass | | | ŝ | S | s | s | s | s | | | | |
| ÷ | m- | ∩≯ອ∀ | 1 | | | | | | | | | | | | | | | | | amber wide | 100mL unores amber glass | | ass | ear/an | glass | 500mL HNO3 amber glass | 500mL H2SO4 amber glass | 250mL H2SO4 amber glass | 500mL unpres amber glass | nber glass | 125mL unpres amber glass | 100mL unpres amber glass | | | | |
| | p | ¥G32 | 1 | | | | | | | | | | | | 1 | | lar | Jar | jar | ved an | s amb | 1L HCI amber glass | 1L H2SO4 amber glass | litate cl | Tliter unpres amber glass | 3 ambe | 04 amb | 04 amp | s amb | s amp | s amb | s amb | | | | |
| a | + 42 | ₹G2U | / | | | | | | | | | | | | | | ar soil | ar soil | ar soil | preser | unore | ambe | C4 ar | I hiosu | npres | ÖNH | H2SC | H2SC | unpre | nnpre | unpre | unpre | | | | |
| Eng. 69] | 112 | ∩ເອ∀ | | | | | | | | | | | | | | | 8oz clear soil iar | 4oz clear soil jar | 2oz clear soil jar | 4oz unpreserved | 100mL | | | 1L Na | Titter u | 500mL | 500mL | 250mL | 200mL | 250mL unpres ar | | 100mL | | | | |
| | Dag | нгәА | | | | | | | | | | | | | 1 | | Γ | | | | | | | | | | | | | | | | | | | $\left[\right]$ |
| | 237217201 Dayli | U198 | | | | | | | | | | | | | 1 | SS | NGKL | WGFU | WG2U | JGFU | AGOU | AG1H | AGIU | AGT | AGTU | AG2N | AG2S | AG3S | AG2U | AG3U | AG4U | AG5U | | | | 5 |
| er Count | 77. | 8690 | | | | | | | | | | | | | 1 | Glass | ſ | | | | | | | | Ì | | | 1 | | | | | | | | O CLITINI O |
| ample Container Co by: Lenexa Mniversal | 121 | M6ĐQ | | | | | | | | | | | | | 1 | | | | | | | | | | | 8 | | | | | | | | | | 11K |
| by: Len | R | DG9U | | | | | | | | | | | | | 1 | | vial | a vial | <u>a</u> | - | | | erved | - | Nai | clear vi | ass | | ass | r glass | | | | | | 1 |
| 0001_S | | ∩6Ð∧ | | | | | | | | | | | | | 11 | | 40mL bisultate clear vial | 40mL HCI amber voa vial | 40mL MeOH clear vial | 40mL TSP amber vial | 40mL H2SO4 amber vial | 40mL Na I hio amber vial | | ar vial | 40mL Na Trio. Clear Vial | 40mL unpreserved clear vial | 1liter H2SO4 clear glass | lass | 250mL HCL Clear glass | ZDUML Unpres Clear glass | ar | | | | | 2 |
| A-LENE- | Site: | 0690 | | | | | | | | | | | | | | | Disultat | HCI am | JeOH | SP an | 12504 | | | 40mL HUI Clear Vial | | inprese | 2S04 | 1liter unpres glass | | Unpre | Tooz clear soll jar | | | | | |
| NV-FRN Effective | | DG9H | | | | | | | | | | | | | 11 | | t0mL t | 10mL F | | | | | | | | | lliter H | liter u | | | DOZ CI | | | | | Ther: |
| DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 Effective Date: | | H69A | | | | | | | | | | | | | | | F | | | | Ť | | T | T | T | Ì | | ľ | | | | | | | | der Nun |
| DC#_ Revis | Î | xinteM | ty | _ | | | | _ | | | | | | | Codes | | DG9B | DG9H | DG9M | DG90 | 2655 | 1900 | | HSD/ | 1897 | VG9U | BG1S | BG1U | BG3H | BG3U | Menn | | | | | Work Order Number: |
| | | COC Line Item | Ŧ | 2 | ε | 4 | S | 9 | 7 | 00 | ი | 10 | 11 | 12 | Container Codes | | | -1 | | -1 | -15 | | | | -1- | <u> </u> | | -15 | -15 | | | _ | | | | - |

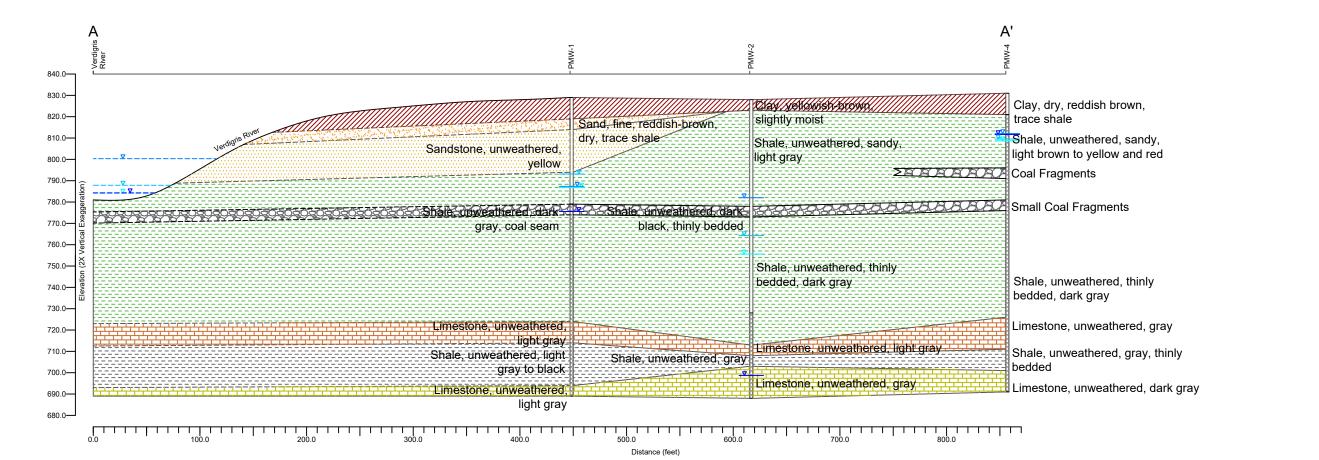
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Cross-Section A-A'



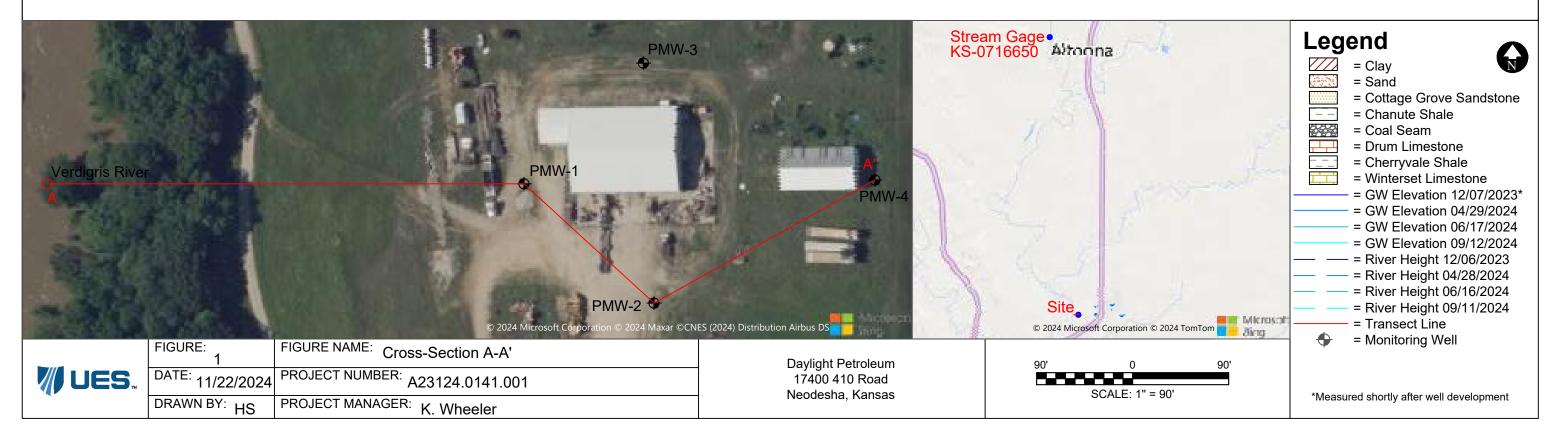
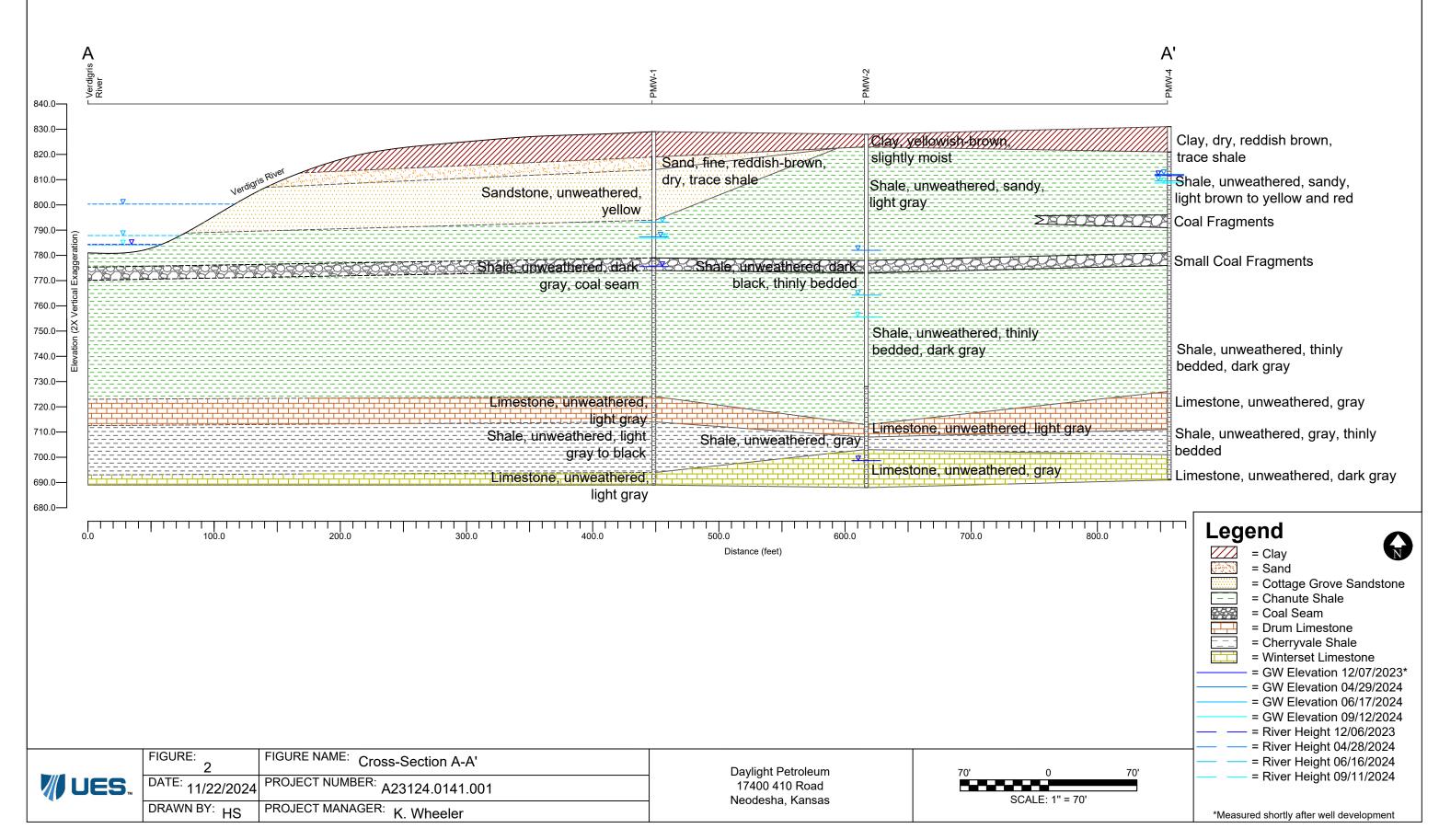
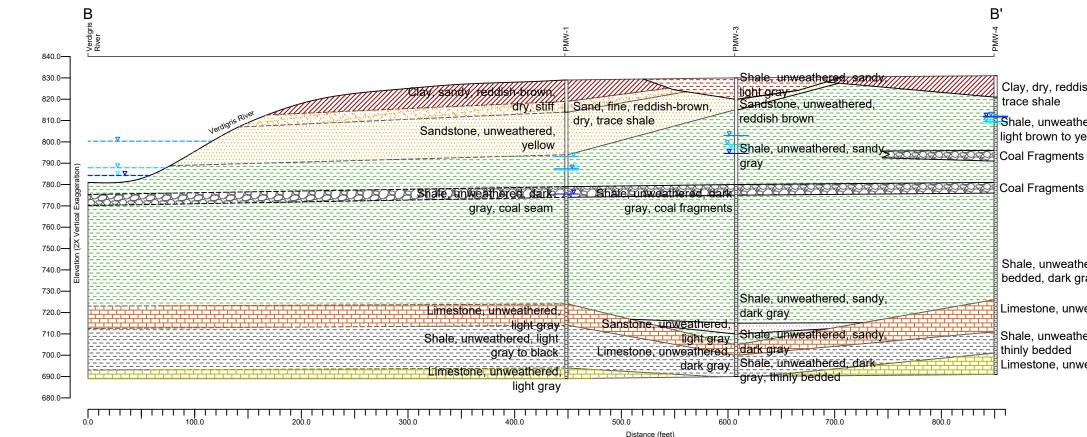


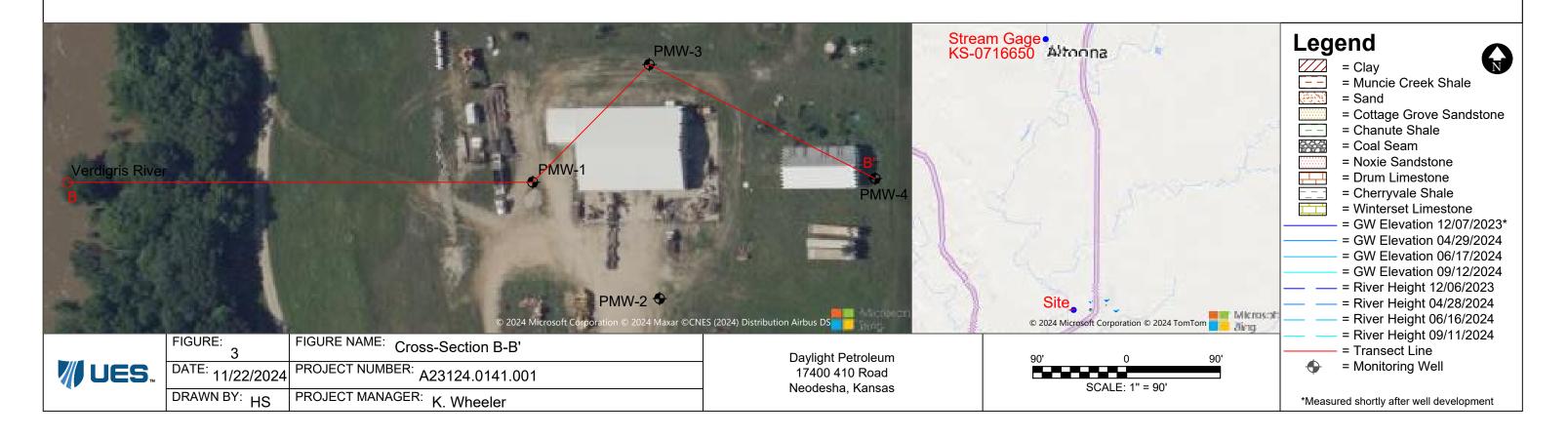
EXHIBIT B

Cross-Section A-A'



Cross-Section B-B'







Clay, dry, reddish brown, trace shale

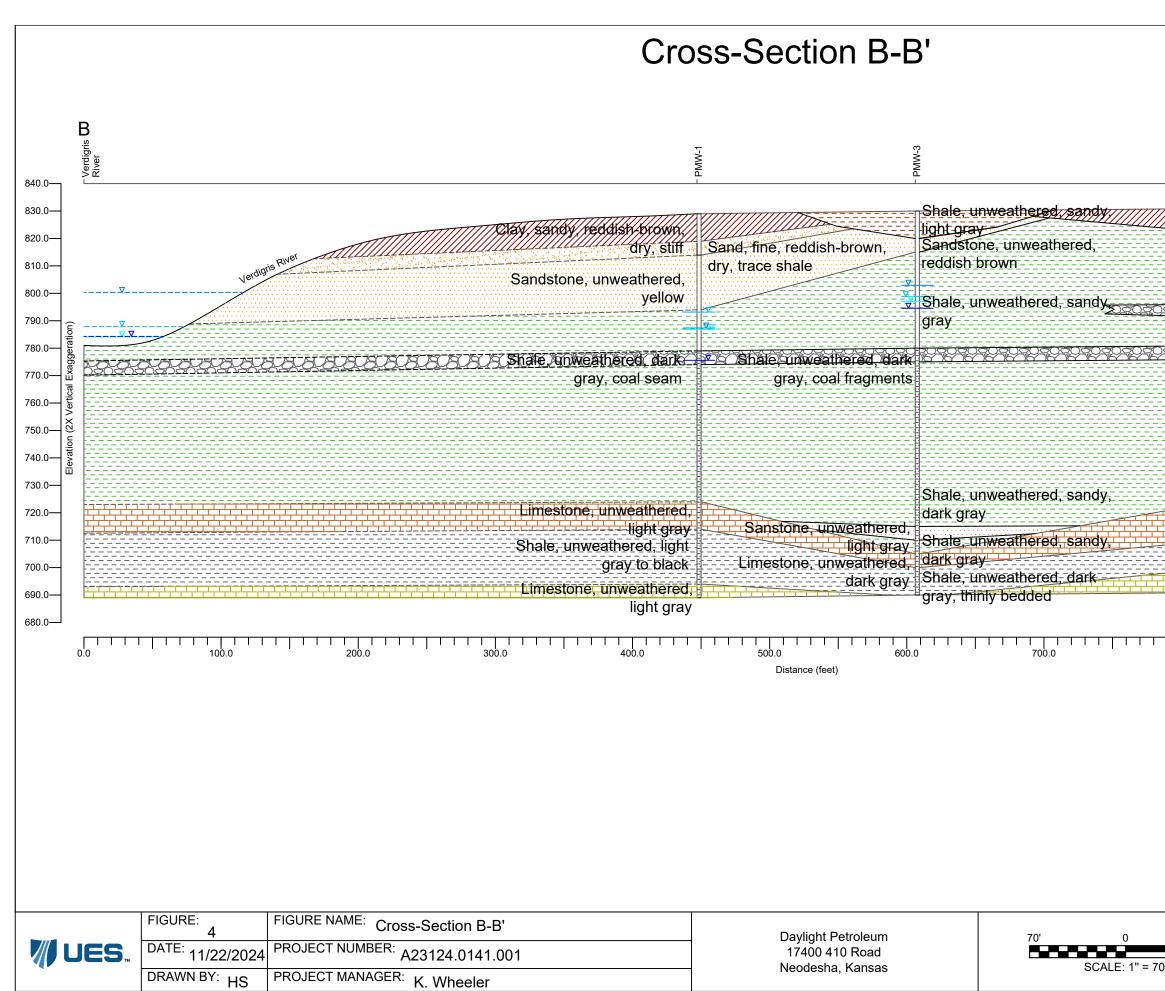
Shale, unweathered, sandy, light brown to yellow and red Coal Fragments

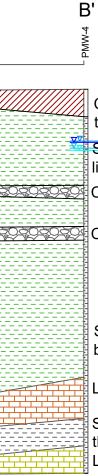
Shale, unweathered, thinly bedded, dark gray

Limestone, unweathered, gray

Shale, unweathered, gray, thinly bedded Limestone, unweathered, dark gray







Clay, dry, reddish brown, trace shale

Shale, unweathered, sandy, light brown to yellow and red

Coal Fragments

Coal Fragments

Shale, unweathered, thinly bedded, dark gray

Limestone, unweathered, gray

Shale, unweathered, gray, thinly bedded Limestone, unweathered, dark gray

| T T T T T T T T T T | 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 06/17/2024 = GW Elevation 09/12/2024 = River Height 12/06/2023 = River Height 04/28/2024 |
| 70' | — = River Height 04/28/2024 — = River Height 06/16/2024 — = River Height 09/11/2024 |
| | *Measured shortly after well development |