Western Refining Southwest LLC
A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39
Jamestown, NM 87347

March 31, 2021

Mr. Kevin Pierard, Chief
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87SOS-6303

RE: LIF/HP Investigation Report
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest LLC)
EPA ID# NMD000333211

Dear Mr. Pierard:

Marathon Petroleum Company LP (dba Western Refining Southwest LLC) Gallup Refinery is submitting this Laser-Induced Fluorescence/Hydraulic Profiling (LIF/HP) Investigation Report for the Marketing Tank Farm Area.

This investigation was completed to identify areas where residual and/or mobile separate phase hydrocarbons from the 2019 Marketing Tank Farm gasoline release may exist. The investigation took place during the weeks of November 18, 2019 and February 1, 2021.

The LIF/HP lithologic boring logs will be submitted to the New Mexico Environment Department under separate cover letter by April 30, 2021.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. John Moore at 505-879-7643.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc D. Cobrain, NMED HWB
C. Chavez, NMOCD
K. Luka, Marathon Petroleum Company
H. Jones, Trihydro
M. Suzuki, NMED HWB
G. McCartney, Marathon Petroleum Company
J. Moore, Marathon Gallup Refinery

MARATHON PETROLEUM CORPORATION

GALLUP REFINING DIVISION

MARKETING TANK FARM LASER-INDUCED FLUORESCENCE/HYDRAULIC PROFILING INVESTIGATION REPORT

MARCH 31, 2021

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Kateri Luka

3/30/2021
Date

Title: Senior HSE Professional

Executive Summary

The Marathon Petroleum Company (MPC), Gallup Refining Division is submitting this laser-induced fluorescence (LIF) and hydraulic profiling (HP) investigation report for the Marketing Tank Farm to identify areas where residual and/or mobile separate phase hydrocarbons (SPH) from releases may potentially exist. The investigation results will assist in the remedial alternative evaluation. The investigation took place during the weeks of November 18, 2019 and February 1, 2021. The investigation scope was conducted in accordance with a series of verbal discussions and agreements between the New Mexico Environment Department and MPC.

Field work for the LIF/HP Investigation consisted of drilling and probing 54 direct push (DP) boreholes. Utility clearance using ground-penetrating radar was completed by Ground Penetrating Radar Systems (GPRS) in the week prior to the drilling activities. Gallup Pipeline and Compliance Services performed borehole clearance using air-knife excavation. Terracon performed the DP drilling and Dakota Technologies, LLC performed LIF/HP probing activities.

This investigation was conducted to evaluate the migration extent of the 2019 Marketing Tank Farm gasoline release and to assist in preparing the remedial alternatives. However, during the investigation of the gasoline release, diesel and naphtha were discovered and the investigation area expanded to the north and west. This report presents the data collected to date on the western half of the refinery. Figure 3-2 presents the locations and extent of the SPH occurrences. Significant conclusions include:

- The gasoline occurrence splits into two lobes at the west side of the parking lot (Figure 3-2). In the northern lobe, SPH from the north gasoline release has migrated west of monitoring well MKTF-33 and is surfacing in the borrow pit. The leading edge of the north gasoline occurrence appears to be in the area of the borrow pit hydrocarbon seep (between MKTF-LIF-73 and MKTF-LIF-74). SPH is in the near surface (less than 6 feet below ground surface) east of the borrow pit hydrocarbon seep near MKTF-LIF-74. The second, southern lobe is migrating to the southwest towards the 90-day pad but has not reached the water seep located just to the east of the pad (west of MKTF-LIF-90). However, there is an area from the western edge of the parking lot and west where no subsurface data have been collected due to subsurface obstructions and topography. Additional data would confirm that these lobes have a common source.
- A north diesel occurrence emanating from the Marketing Tank Farm appears to be moving through a paleochannel to the north towards the hydrocarbon seep located near monitoring well MKTF-01. The west lobe of the occurrence appears to be comingling in the south with the MKTF gasoline occurrence and in the north with the naphtha occurrence, migrating beneath the road from the east. The east lobe of the occurrence is migrating to the west towards the crude tanks from the process area and is nearing the Marketing Tank Farm complex (MKTF-LIF-66). The waveforms from this occurrence are similar to the waveforms observed in PA-LIF-4.

Based on the information collected during this investigation, the recommendations include:

- Installing a row of five sumps in the borrow pit to cut off the western migration of the north gasoline occurrence.
- Installing a recovery well between MKTF-LIF-77 and MKTF-LIF-90 to intercept migration of the south gasoline occurrence.
- Investigating the Process Area diesel occurrence to evaluate the eastern extent prior to recommending any remediation activities. The scope of the investigation may be limited due to underground utilities in the process area.

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List of Acronyms and Abbreviations

% RE	percent of reference emitter
bgs	below ground surface
cm/sec	centimeters per second
DP	direct push
EC	electrical conductivity
ft	foot or feet
ft/d	feet per day
HP	hydraulic profiling
K	hydraulic conductivity
LIF	laser-induced fluorescence
mg/kg	milligram per kilogram
mL/min	milliliters per minute
MPC	Marathon Petroleum Company
mS/m	millisiemens per meter
NM	New Mexico
P Dwn	downhole hydraulic pressure
SPH	separate phase hydrocarbon
TPH-DRO	Total Petroleum Hydrocarbon-Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocarbon-Gasoline Range Organics
TPH-MRO	Total Petroleum Hydrocarbon-Motor Oil Range Organics

1.0 Introduction and Background

The Marathon Petroleum Company (MPC), Gallup Refining Division (Refinery) is located approximately 17 miles east of Gallup, McKinley County, New Mexico (NM) along the north side of Interstate Highway I-40 (Figure 1-1). The physical address is I-40, Exit #39 Jamestown, NM, 87347. The Refinery property covers approximately 810 acres. The Refinery processed crude oil transported by pipeline or tanker truck from the Four Corners region. Various process units operated at the Refinery included crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. Past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel. Refinery operations were idled in April 2020. The Refinery was officially idled indefinitely on October 9, 2020.

MPC is submitting this investigation report for the laser-induced fluorescence (LIF) and hydraulic profiling (HP) of the Refinery's Marketing Tank Farm area. The investigation was conducted to identify areas where residual and/or mobile separate phase hydrocarbons (SPH) potentially exist due to Marketing Tank Farm hydrocarbon releases. The investigation was expanded to include areas around the Marketing Tank Farm due to the discovery of diesel and naphtha during the LIF/HP investigation. The Refinery location and investigation area are shown on Figure 1-1. Fifty-four direct push (DP) boreholes were installed to collect high-resolution site characterization data using LIF and HP downhole tools. An electrical conductivity (EC) tool was used to record soil conditions for 27 boreholes because the HP tool malfunctioned during the field investigation. To calibrate and benchmark these analyses, nine soil samples were collected at four locations for laboratory analysis. Specific investigation objectives are presented in the next section.

1.1 Investigation Objectives

As determined by the MPC Refinery, the objectives were as follows:

- Identify areas where residual and/or mobile SPH may potentially exist.
- Use the investigation results to assist in the selecting remedial alternatives for evaluation.

1.2 Site Surface and Subsurface Conditions

Site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the refinery property range from 7,040 feet (ft) to 6,860 ft. Surface soils within most of the area of investigation are primarily Rehobeth silty clay loam.

Based on existing boring logs, shallow subsurface fluvial and alluvial soils are comprised of primarily clays and silts with minor inter-bedded sand layers. Very low permeability bedrock (e.g., claystones and siltstones) underlie the surface soils and effectively form an aquitard. The Chinle Group, from the Upper Triassic period, crops out over a large area on the southern margin of the San Juan Basin. The uppermost recognized local Formation is the Petrified Forest Formation. The Sonsela Sandstone Bed is the uppermost recognized regional aquifer. Aquifer tests of the Sonsela Bed northeast of Prewitt indicated a transmissivity of greater than 100 ft^2/day (Stone et al., 1983). The Sonsela Sandstone's

highest point occurs southeast of the site and slopes downward to the northwest as it passes under the Refinery. The Sonsela Sandstone forms a water-bearing reservoir with artesian conditions throughout the central and western portions of the Refinery property. The regional stratigraphy around the Refinery is shown on Figure 1-2.

The diverse properties and complex, irregular stratigraphy of the surface soils across the Refinery cause a wide range of hydraulic conductivity ranging from less than 10^{-2} centimeters per second (cm/sec) for gravel-like sands immediately overlying the Petrified Forest Formation to 10^{-8} cm/sec in the clay soils located near the surface. Generally, shallow groundwater at the Refinery follows the upper contact of the Petrified Forest Formation (Chinle Group) with prevailing flow from the southeast to the northwest, although localized areas may have varying flow directions based on the subsurface geology.

1.3 Existing Data

Historically, several releases have occurred in the investigation area, including an October 2019 gasoline release from a subsurface pipeline between the Truck Loading Rack and the marketing tank farm. During this investigation, the project scope was expanded from the 2019 gasoline release to evaluate other releases in the area, including diesel and naphtha occurrences. SPH have been detected in monitoring wells MKTF-01, MKTF-03, MKTF-05 to MKTF-09, MKTF-11 to MKTF-15, MKTF-17, MKTF-19 to MKTF-23, MKTF-26, MKTF-33, MKTF-36 to MKTF-37, MKTF-39, MKTF-45, MKTF-48, and MKTF-48. Those monitoring wells with intermittent measurements of 0.02 ft or less are not included in the above list. Historical measurements of SPH thickness and depth in these monitoring wells were used to develop the scope of work for the investigation. SPH thicknesses in the Marketing Tank Farm monitoring wells are shown on Figure 1-3. Measurements of SPH thickness and depth in these monitoring wells are in Appendix A.

2.0 Investigation Methods

During this investigation, site characterization was conducted utilizing LIF combined with HP and LIF combined with EC. The LIF/HP probing output provides a comparison of the LIF response to that of a known reference standard and is presented as percent of the reference emitter (% RE). LIF response intensity (i.e., % RE) is influenced by the quantity of hydrocarbons present and the waveform pattern is a function of the relative proportions of the polycyclic aromatic hydrocarbons present. Additional details on the LIF/HP technique are described in Appendix B. The investigation results are presented in Section 3.0. The concepts of mobility and migration are discussed with respect to the investigation results in Sections 3.0 and 4.0.

For clarity, in discussing the migration potential of SPH, a distinction should be drawn between potential SPH mobility and migration, as these terms can be confused (ITRC 2009). In this report, mobility and mobility potential refer to the potential of SPH to gravity drain from the soil pore space, which can only occur if the residual saturation is exceeded. This gravity drainage typically manifests itself as SPH in a monitoring well. In contrast, SPH migration refers to the lateral spread of SPH under the influence of SPH characteristics, the prevailing groundwater hydraulic gradient, and permeability, as governed by Darcy's Law. Exceedance of local residual saturation is a necessary condition for migration, but it is not alone sufficient for migration. Sufficient SPH head and other conditions described in this report must be present for SPH to migrate downgradient.

3.0 Investigation Results

The initial investigation in the area of the Marketing Tank Farm began the week of November 18, 2019. Due to the delays caused by the COVID-19 pandemic, the investigation fieldwork for the Marketing Tank Farm and surrounding areas was completed the week of February 1, 2021. LIF/HP investigation locations are presented on Figure 3-1 and the LIF/HP logs are provided in Appendix C.

In the December 18, 2020 "Response to Comments Approval with Modifications OW-61 through OW-65 Well Installation Report" submitted to the New Mexico Environment Department (NMED), MPC proposed to hydro-excavate V-trenches to locate subsurface utilities as requested by NMED. The advantage of V-trenching is that undisturbed shallow soils can be evaluated for potential impacts. NMED approved the method and requested additional information in the "Approval, Response to Comments Approval with Modifications OW-61 through OW-65 Well Installation Report" letter dated January 13, 2021. Per the NMED approval letter, V-trenching was to be performed during the LIF Investigation and presented in this report. The NMED approval letter was received after planning and scheduling for the February 2021 LIF investigation; therefore, V-trenching was not used in the February 2021 investigation. V-trenching will be used in future subsurface investigations where shallow soil evaluation is necessary. Appendix D provides a description of the V-trench method and includes a schematic of the V-trench.

During the 2019 and 2021 investigations, each location was first cleared by Ground Penetrating Radar Systems for pipelines, subsurface electrical lines, and water lines. Gallup Pipeline and Compliance Services then performed the utility clearance using air-knife excavation to a depth of 5 ft below ground surface (bgs). The air knife excavations were backfilled with dry cuttings prior to installing the LIF/HP boreholes. Therefore, the LIF/HP interval of 0-5 ft was not representative of undisturbed subsurface conditions.

Terracon performed the DP drilling and Dakota Technologies, LLC performed LIF/HP probing activities. Soil borings with no LIF response were abandoned with soil cuttings from the borehole, and a bentonite plug was placed from 2 ft bgs to ground surface. Contaminated borings were abandoned using bentonite chips.

3.1 Laser-Induced Fluorescence Results

The initial focus of this investigation was to determine the extent of SPH migration resulting from the MKTF gasoline release from the underground gasoline transfer line between the Marketing Tank Farm and the truck loading rack. The MKTF gasoline release migrated to the southwest, then west under the truck parking lot. During the investigation, diesel and naphtha occurrences were discovered in the LIF results in the area to the north of Marketing Tank Farm. Figure 3-2 presents the locations of the occurrences and their estimated extents.

LIF borings MKTF-LIF-46, MKTF-LIF-45, MKTF-LIF-44, and MKTF-LIF-37 show the initial advancement of the MKTF gasoline occurrence to the southwest from the gasoline release area. MKTF-LIF-57 and

MKTF-LIF-53 show the presence of an old diesel occurrence. The waveform for the various depths in MKTF-LIF-46 indicate that the gasoline has mixed with diesel, which is shown on Figure 3-2 with the two occurrences overlapping. This is evident by the shortening of the retention time in the 350-nanometer wavelength (blue) at all depths. MKTF-LIF-45 and MKTF-LIF-44 also show indications of a mixture of gasoline with diesel (Figure 3-2). A classic gasoline waveform appears in MKTF-LIF-37 below approximately 6 ft bgs. Above this depth the waveform appears to be a weathered gasoline.

Moving west to MKTF-LIF-42 and MKTF-LIF-43, the MKTF gasoline occurrence appears to bifurcate along western and southwestern paths (Figure 3-2). In MKTF-LIF-42, the SPH is following lower permeability zones at 11.0 to 11.5 ft bgs, 15.5 to 16.0 ft bgs, and at the alluvium/Chinle Group interface at 20.0 ft bgs. The predominant SPH pathway appears to be from 15.5 to 18.5 ft bgs where % RE responses of up to 367 % were recorded. The north gasoline occurrence appears to move more to the northwest at MKTF-LIF-54 (MKTF-33) as the response is attenuated to almost residual saturation even though MKTF-33 had 6.08 ft of SPH on December 4, 2020. The residual response in MKTF-LIF-54 is in a sand or more permeable lens at approximately 25 ft bgs. In MKTF-LIF-62, to the northwest, there is a strong % RE at depths of 23.5 to 26.35 ft bgs with a gasoline signature. MKTF-LIF-61 marks the northern edge of the north gasoline occurrence with a peak response at 23.73 ft bgs, similar to the depths at MKTF-LIF-62 and MKTF-LIF-54 to the south. The north gasoline occurrence is found further to the west in MKTF-LIF-72 and MKTF-LIF-74 at depths of less than six ft bgs. The SPH surfaces at a borrow pit hydrocarbon seep located between MKTF-LIF-74 and MKTF-LIF-73. There is also some staining to the northeast of MKTF-LIF-74.

The south gasoline occurrence forms a path between MKTF-LIF-43 and MKTF-LIF-90 (Figure 3-2). This portion occurs as a very thin interval where potential product was identified in the LIF pushes. The maximum response signal is 56.4% RE at 19.91 ft bgs and is centered on a less permeable zone between 18.5 and 20.0 ft bgs. The maximum peak may possibly be potentially mobile or just at maximum residual saturation. Further to the southwest, MKTF-LIF-77 has a strong response of 321% RE at 18.03 ft bgs with the SPH filling a less permeable zone between 17.0 and 19.0 ft bgs. This permeable zone appears to resemble the permeable zone in MKTF-LIF-67. MKTF-LIF-90 has a similar permeable zone between 16.64 and 17.92 ft bgs with the strongest response of 83.2% RE at 16.86 ft bgs. The north and south gasoline occurrences could be disconnected to some degree from the primary suspected source areas. A possible mechanism for the occurrence of these impacts could be following a paleochannel along the bedrock surface. However, there is an area between these SPH occurrences and the primary source areas where little to no data exist due to subsurface obstructions and topography.

Boring locations in the MKTF, north, and south gasoline occurrences with greater than 100% RE include MKTF-LIF-46 (409%), MKTF-LIF-45 (329%), MKTF-LIF-44 (315%), MKTF-LIF-37 (339%), MKTF-LIF-42 (367%), MKTF-LIF-43 (287%), MKTF-LIF-77 (321%), MKTF-LIF-62 (361%), MKTF-LIF-61 (105%), MKTF-LIF-72 (305%), and MKTF-LIF-74 (538%). The LIF response at these locations indicate the presence of gasoline and diesel product within the soil and formation pore space.

The north diesel occurrence has migrated in a northwesterly, then northerly direction from the Marketing Tank Farm and Truck Loading Rack (Figure 3-2). As observed in MKTF-LIF-36, the waveform indicates the presence of gasoline (blue and green waveforms) mixed with a small amount of diesel (orange and red peaks that are higher than what would be expected in a gasoline). Moving to the northwest, MKTF-LIF-39 indicates the presence of a weathered diesel product with possibly a small percentage of weathered gasoline. A small residual peak of gasoline that is perhaps related to the MKTF release to the south is present at a depth of 21 ft bgs (Appendix C, MKTF-LIF-39). MKTF-LIF-40 waveforms indicate the presence of a diesel product with little to no gasoline presence. MKTF-LIF-50 waveforms also indicate a diesel product similar to what is found in MKTF-LIF-40. The diesel in both borings appear to be at similar depths. The north diesel occurrence appears to have headed further to the northwest and is evident in MKTF-LIF-56 where it appears to have mixed with the naphtha occurrence moving in from the east. The north diesel occurrence is present in MKTF-LIF-87 and may also be present in MKTF-LIF-86 (the orange coloration at 9 to 10 ft bgs).

The SPH in MKTF-LIF-85 is an unidentified petroleum product that may possibly be from the sour naphtha release on March 26, 2017. The waveform in the LIF response is representative of naphtha, and the boring is located within the naphtha release area. This SPH can also be found in MKTF-LIF-86, MKTF-LIF-87, and MKTF-LIF-84 at approximately 15.5 ft bgs. This SPH type is not found in the borings further to the east suggesting that it is related to the sour naphtha release.

SPH in MKTF-LIF-66, just west of the bundle cleaning pad also appears to be a diesel fuel. However, this waveform signature is very similar to waveforms in PA-LIF-04 and PA-LIF-06 further to the east in the process area. As further evidence of a diesel fuel composition, recently found SPH in MKTF-39 (between MKTF-LIF-66 and PA-LIF-04) has an initial boiling point of 333°F, which is within the range (310-691°F) in Section 9 of the MPC #2 Ultra Low Sulfur Diesel Safety Data Sheet. This diesel waveform is also found in MKTF-LIF-84, which is northwest of MKTF-LIF-66.

3.2 Hydraulic Profiling Results

The HP data are included on the right-hand side of each LIF/HP log (Appendix C). The K value on the HP log represents relative hydraulic conductivity, as dissipation tests were not feasible due to the low K deeper in the boring. This low K prevented the dissipation test from being conducted during the first mobilization in November 2019 due to the extremely long dissipation time (hours). Dissipation tests were conducted at four locations during the second mobilization in February 2021. These locations were PA-LIF-02, PA-LIF-06, MKTF-LIF-83, and MKTF-LIF-84. The calculated water table depth in PA-LIF-02 was 13.0 ft bgs. The water table depth for PA-LIF-06 was 12.1 ft bgs. The calculated water table depths for MKTF-LIF-83 and MKTF-LIF-84 were 12.4 and 14.2 feet respectively. The water level in MKTF-15 was approximately 13.6 ft below the measuring point in January 2021, which is comparable to the calculated fluid levels in MKTF-LIF-83 and MKTF-LIF-84.

HP data were used to evaluate subsurface geology with respect to potential SPH flow. Figure 3-3 presents the cross-section location map; Figure 3-4 presents the cross-sections with maximum historical

SPH thickness. Low K values (high P Dwn) on the HP logs roughly correlate with the alluvium/Chinle Group contact as shown on the Figure 3-4 cross section.

Fractures and/or bedding planes are possible pathways for SPH migration below the alluvium/Chinle Group contact and are indicated by a slight decrease in P Dwn on the HP logs. Examples of P Dwn indicating a fracture and/or bedding planes can be seen recurring in MKTF-LIF-45 at 25 ft bgs (Appendix C). This example represents micro or thin fractures that likely contribute to most of the permeability, resulting in a bulk average permeability similar to a clayey silt rather than intact bedrock.

3.3 Electrical Conductivity Results

The HP tool failed after the completion of 13 boring locations: MKTF-LIF-60, MKTF-LIF-61, MKTF-LIF-66, MKTF-LIF-68, MKTF-LIF-81, MKTF-LIF-83, MKTF-LIF-84, MKTF-LIF-87, PA-LIF-02, PA-LIF-03, PA-LIF-04, PA-LIF-05, PA-LIF-06. The HP tool was replaced with an EC tool for the remainder of the locations. The EC logs are included on the right-hand side of each LIF/EC log (Appendix C). The conductivity value on the EC log represents the electrical conductivity of the soils. EC in the 0 to 50 millisiemens per meter (mS/m) range can be interpreted as sand (coarser to finer), silts are normally in the 50 to 100 mS/m range, clayey silts and silty clays range up to 200 mS/m, and clays are normally greater than 200 mS/m (Christy, et al., 1994).

The EC data were used to evaluate subsurface geology with respect to potential SPH flow. Low K values (high conductivity) on the EC logs roughly correlate with the Chinle Group contact as shown on the Figure 3-3 cross section. All soil K data gathered via HP or EC tools should be correlated with physical soil samples to ensure that the tools are accurately representing subsurface conditions.

Fractures and/or bedding planes are possible pathways for SPH migration below the alluvium/Chinle interface and are indicated by a decrease in conductivity on the EC logs. Examples of conductivity indicating a fracture and/or bedding planes can be seen in MKTF-LIF-77 at 18.0 ft bgs and 19.73 ft bgs on MKTF-LIF-79A (Appendix C). These examples represent micro or thin fractures that likely contribute to most of the permeability, resulting in a bulk average permeability similar to a clayey silt rather than intact bedrock.

3.4 Soil Sampling Results

As stated above, LIF data offer a qualitative representation of the SPH saturation magnitude; therefore, additional soil data were collected to assist in the evaluation of SPH mobility. Soil cores were collected via DP technology to generate continuous lithologic data and allow visual evaluation of any SPH encountered. Locations were determined by the on-site Professional Geologist after interpretation of the LIF/HP logs at locations and depths where LIF/HP results indicated the presence of SPH based on the % RE. The selected locations included PA-LIF-07, MKTF-LIF-44, MKTF-LIF-53, MKTF-LIF-74, and MKTF-LIF-85, as shown on Figure 3-5.

Soil cores were collected using a Geoprobe© by driving a 5-ft long by 2-inch diameter macro-core barrel in locations within 2 ft of the selected LIF/HP boring locations. The samples were labeled as MKTF-LIF-44 (6 to 7 ft, 8 to 10 ft, and 18 to 19 ft), MKTF-LIF-53 (7 to 8 ft and 8 to 9 ft), MKTF-LIF-74 (2 to 3 ft, 4 to 5 ft, and 5 to 6 ft), MKTF-LIF-85 (7 to 9 ft), and PA-LIF-07 (11 to 13 ft and 13 to 14 ft). Samples were analyzed for total petroleum hydrocarbon-diesel range organics (TPH-DRO) and total petroleum hydrocarbons-motor oil range organics (TPH-MRO) analysis by the United States Environmental Protection Agency (USEPA) Method 8015M, and total petroleum hydrocarbon-gasoline range organics (TPH-GRO) analysis by the USEPA Method 8260B. In addition, samples were collected for particle size analysis by American Society of Agronomy Method 15-5. The samples were labeled as MKTF-LIF-44 (6 to 7 ft, 8 to 10 ft, and 18 to 19 ft), MKTF-LIF-53 (7 to 8 ft and 8 to 9 ft), MKTF-LIF-74 (2 to 3 ft and 4 to 5 ft), MKTF-LIF-85 (7 to 9 ft), and PA-LIF-07 (11 to 13 ft). Laboratory analytical results are presented in Tables 3-1 and 3-2; laboratory data are provided in Appendix E.

TPH-DRO ranged from non-detect to 840 milligrams per kilogram (mg/kg) and TPH-GRO ranged from 82 mg/kg to 2,300 mg/kg. TPH-MRO was non-detect for all samples. Grain-size analysis indicate that the majority of the materials are gravels and sands.

TPH-DRO and TPH-GRO concentrations maybe lower than might be expected based on the reference emitter (%RE). However, there are several factors that might explain this.

1) The higher TPH concentrations, at locations MKTF-LIF-44 (18 to 19 ft) and MKTF-LIF-74 (4 to 5 ft) are around 2,500-3,000 mg/kg total TPH (i.e., the sum of GRO and DRO). This is consistent with SPH saturations in the range of 3% to 5% (Hawthorne and Kirkman 2012) and likely near the residual saturation limit. Although the highest soil TPH concentrations are consistent with SPH at or near residual saturation at those locations, the LIF data suggest that SPH at higher saturations exist in portions of the subsurface from which soil samples were not collected.
2) Discrete soil sampling intervals commonly miss small intervals of very high SPH saturation in the subsurface and/or average those small intervals across larger intervals with lower saturation overall. An example seems to be location PA-LIF-07, where the soil sample from 11 to 13 ft indicates total TPH of 430 mg/kg (relatively low). The LIF log indicates narrow zones of high %RE (>100%) at around 11.8 ft and 12.2 ft, while the interval from 11ft to 11.8 ft has near zero %RE. Aggregating the sample across the entire 2 ft soil sample interval would likely lead to a lower TPH result.
3) The soil samples were collected within 2 ft laterally of the LIF borings; however, as noted above, a lot can change geologically in 2 ft, so the TPH values in the soil samples shouldn't be expected to match perfectly with this LIF logs.

   LIF data are a better indicator of the presence/absence and/or location of SPH than the TPH data, while the TPH data are a better indicator of SPH saturation than the LIF data. Therefore, the two datasets aren't really measuring the same thing.

4.0 Conclusions

Significant conclusions include:

- The gasoline occurrence splits into two lobes at the west side of the parking lot (Figure 3-2). In the northern lobe, SPH from the north gasoline release has migrated west of monitoring well MKTF-33 and is surfacing in the borrow pit. This part of the north gasoline occurrence appears to have stopped at the borrow pit hydrocarbon seep (between MKTF-LIF-73 and MKTF-LIF-74). SPH is in the near surface (less than 6 ft bgs) east of the borrow pit hydrocarbon seep near MKTF-LIF-74. The second, southern lobe is migrating to the southwest towards the 90-day pad but has not reached a water seep located just to the east of the pad (west of MKTF-LIF-90). However, there is an area from the western edge of the parking lot and west where no subsurface data have been collected due to subsurface obstructions and topography. Additional data would confirm that these lobes have a common source.
- A north diesel occurrence emanating from the Marketing Tank Farm appears to be moving through a paleochannel to the north towards the hydrocarbon seep located near monitoring well MKTF-01. The west lobe of the occurrence appears to be mixing in the south with the MKTF gasoline occurrence and in the north with the naphtha occurrence, coming down beneath the road from the east. The east lobe of the occurrence is migrating to the west towards the crude tanks from the process area and is nearing the Marketing Tank Farm complex (MKTF-LIF-66). The waveforms from this occurrence are similar to the waveforms observed in PA-LIF-4.

Based on the information collected during this investigation, the recommendations include:

- Installing a row of five sumps in the borrow pit to cut off the western migration of the north gasoline occurrence.
- Installing a recovery well between MKTF-LIF-77 and MKTF-LIF-90 to intercept migration of the south gasoline occurrence.
- Investigating the Process Area diesel occurrence to evaluate the eastern extent prior to recommending any remediation activities. The scope of the investigation may be limited due to underground utilities in the process area.

5.0 References

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Tables

TABLE 3-1. LIF INVESTIGATION - SOIL SAMPLE RESULTS
MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION, GALLUP NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	Analyte	Lab Result	Value RL
MKTF-LIF-44	11/24/2019	6 - 7	DRO (mg/kg)	84	10
			MRO (mg/kg)	ND	50
			GRO (mg/kg)	97	28
MKTF-LIF-44	11/24/2019	8 - 10	DRO (mg/kg)	98	11
			MRO (mg/kg)	ND	53
			GRO (mg/kg)	1400	18
MKTF-LIF-44	11/24/2019	18 - 19	DRO (mg/kg)	840	12
			MRO (mg/kg)	ND	61
			GRO (mg/kg)	1500	180
MKTF-LIF-53	11/25/2019	7 - 8	DRO (mg/kg)	100	11
			MRO (mg/kg)	ND	57
			GRO (mg/kg)	1600	29
MKTF-LIF-53	11/25/2019	8 - 9	DRO (mg/kg)	270	11
			MRO (mg/kg)	ND	56
			GRO (mg/kg)	1100	31
MKTF-LIF-74	2/4/2021	2 - 3	DRO (mg/kg)	490	12
			MRO (mg/kg)	ND	62
			GRO (mg/kg)	1500	290
MKTF-LIF-74	2/4/2021	4 - 5	DRO (mg/kg)	180	12
			MRO (mg/kg)	ND	59
			GRO (mg/kg)	2300	290
MKTF-LIF-74	2/4/2021	5 - 6	DRO (mg/kg)	22	12
			MRO (mg/kg)	ND	62
			GRO (mg/kg)	630	65
MKTF-LIF-85	2/5/2021	7 - 9	DRO (mg/kg)	ND	13
			MRO (mg/kg)	ND	64
			GRO (mg/kg)	130	67
PA-LIF-07	2/5/2021	11 - 13	DRO (mg/kg)	130	10
			MRO (mg/kg)	ND	50
			GRO (mg/kg)	300	110
PA-LIF-07	2/5/2021	13 - 14	DRO (mg/kg)	11	11
			MRO (mg/kg)	ND	53
			GRO (mg/kg)	82	5.6

Notes:
DRO = Diesel range organics
ft = Feet
GRO = Gasoline range organics
ID = Identification
LIF = Laser induced fluorescence
mg/kg = Milligrams per kilogram
MRO = Motor oil range organics
ND = Not detected at the reporting limit
RL = Reporting limit

TABLE 3-2. LIF INVESTIGATION - GRAIN SIZE ANALYSIS
MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION, GALLUP NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	% Med-Coarse Gravel (> 8mm)	% Fine Gravel (8mm-2mm)	% Gravel (> 4.75mm)	% Coarse Sand (2mm-0.5mm)	% Medium Sand (0.5mm-0.25mm)	% Fine Sand (0.25mm-0.125mm)	% Very Fine Sand (0.125mm-0.063mm)	% Sand (4.75mm-0.075mm)	% Coarse Silt (0.063mm-0.038mm)	% Fine Silt (0.038mm-0.002mm)	% Silt (0.075mm-0.002mm)	% Clay [1] (<0.002mm)
MKTF-LIF-44	11/24/2019	6 - 7	16.6	35.4	NA	15.4	5.8	7.0	3.8	NA	1.7	6.2	NA	8.1
MKTF-LIF-44	11/24/2019	8 - 10	21.0	16.1	NA	9.6	10.3	12.9	5.1	NA	2.4	12.2	NA	10.4
MKTF-LIF-44	11/24/2019	18 - 19	0.0	0.4	NA	0.8	4.9	16.9	15.8	NA	6.4	31.4	NA	23.4
MKTF-LIF-53	11/25/2019	7 - 8	4.6	1.5	NA	2.7	8.6	21.8	12.4	NA	5.5	26.0	NA	17.0
MKTF-LIF-53	11/25/2019	8 - 9	22.9	20.3	NA	17.1	10.3	8.7	3.4	NA	1.7	8.8	NA	6.8
MKTF-LIF-74	2/4/2021	2 - 3	NA	NA	0.9	NA	NA	NA	NA	54.9	NA	NA	33.2	11.0
MKTF-LIF-74	2/4/2021	4 - 5	NA	NA	0.0	NA	NA	NA	NA	30.3	NA	NA	51.9	17.8
MKTF-LIF-85	2/5/2021	7 - 9	NA	NA	0.0	NA	NA	NA	NA	23.5	NA	NA	55.9	20.6
PA-LIF-07	2/5/2021	11 - 13	NA	NA	13.5	NA	NA	NA	NA	59.0	NA	NA	19.4	8.1

[1] United Soil Classification System does not classify clay fraction based on particle size. United States Department of Agriculture definition of clay (< 0.002mm) used in this table.

Notes:
> = Greater than
< = Less than
% = Percent
ft - Feet
ID = Identification
LIF = Laser induced fluorescence
mm = Millimeter
NA = Not analyzed

Figures

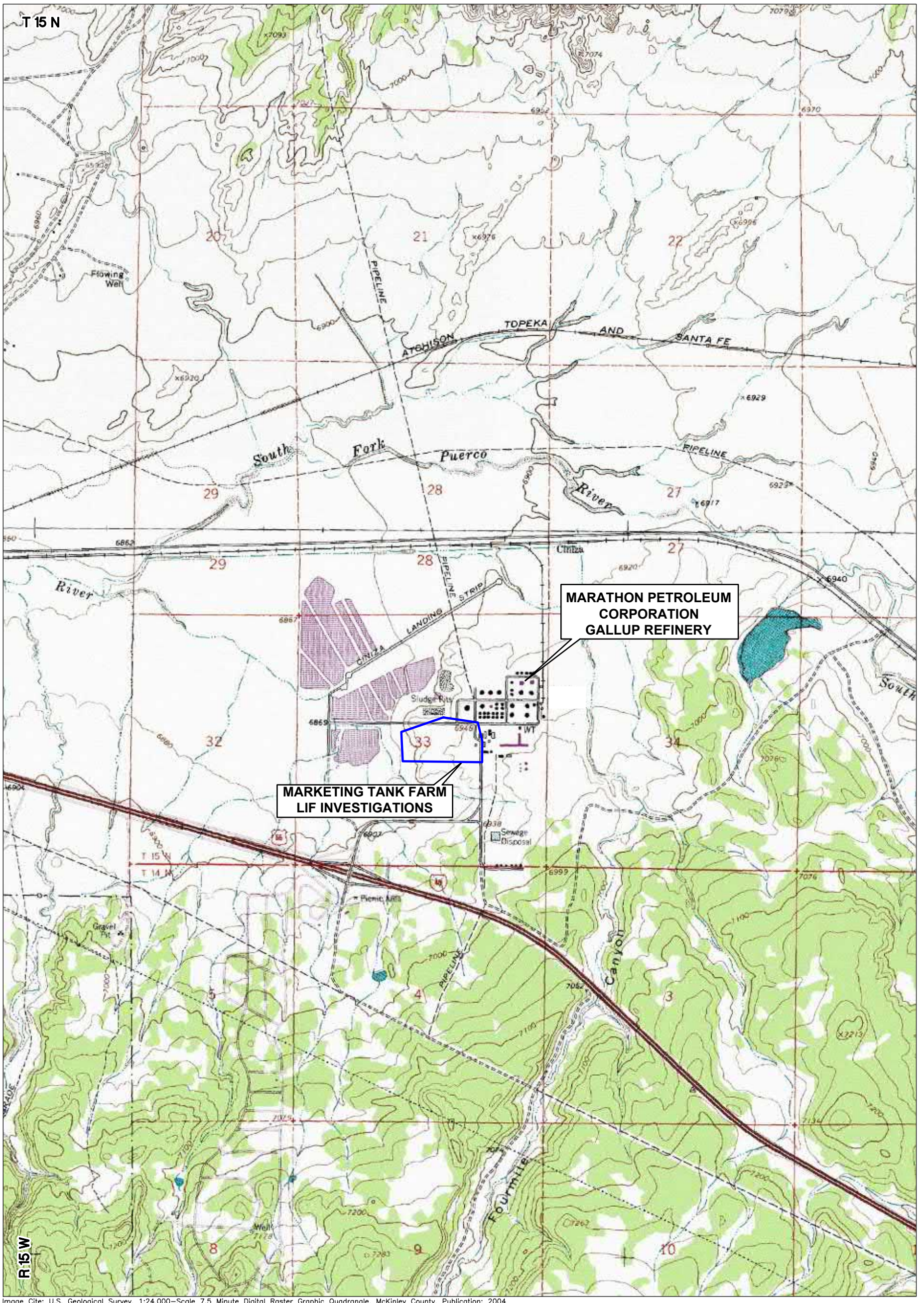

Image Cite: U.S. Geological Survey, 1:24,000–Scale 7.5 Minute Digital Raster Graphic Quadrangle, McKinley County, Publication: 2004

NEW MEXICO

QUADRANGLE LOCATION

NOTES:

1. SITE LEGAL DESCRIPTION - TOWNSHIP 15 NORTH, RANGE 15 WEST, SECTION 33
2. LIF = LASER-INDUCED FLUORESCENCE

N

0 2,000'

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FIGURE 1-1

REFINERY AND LIF INVESTIGATION LOCATIONS

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale: 1" = 2,000'	Date: 3/2/2021	File: 697-SITELOC-202103

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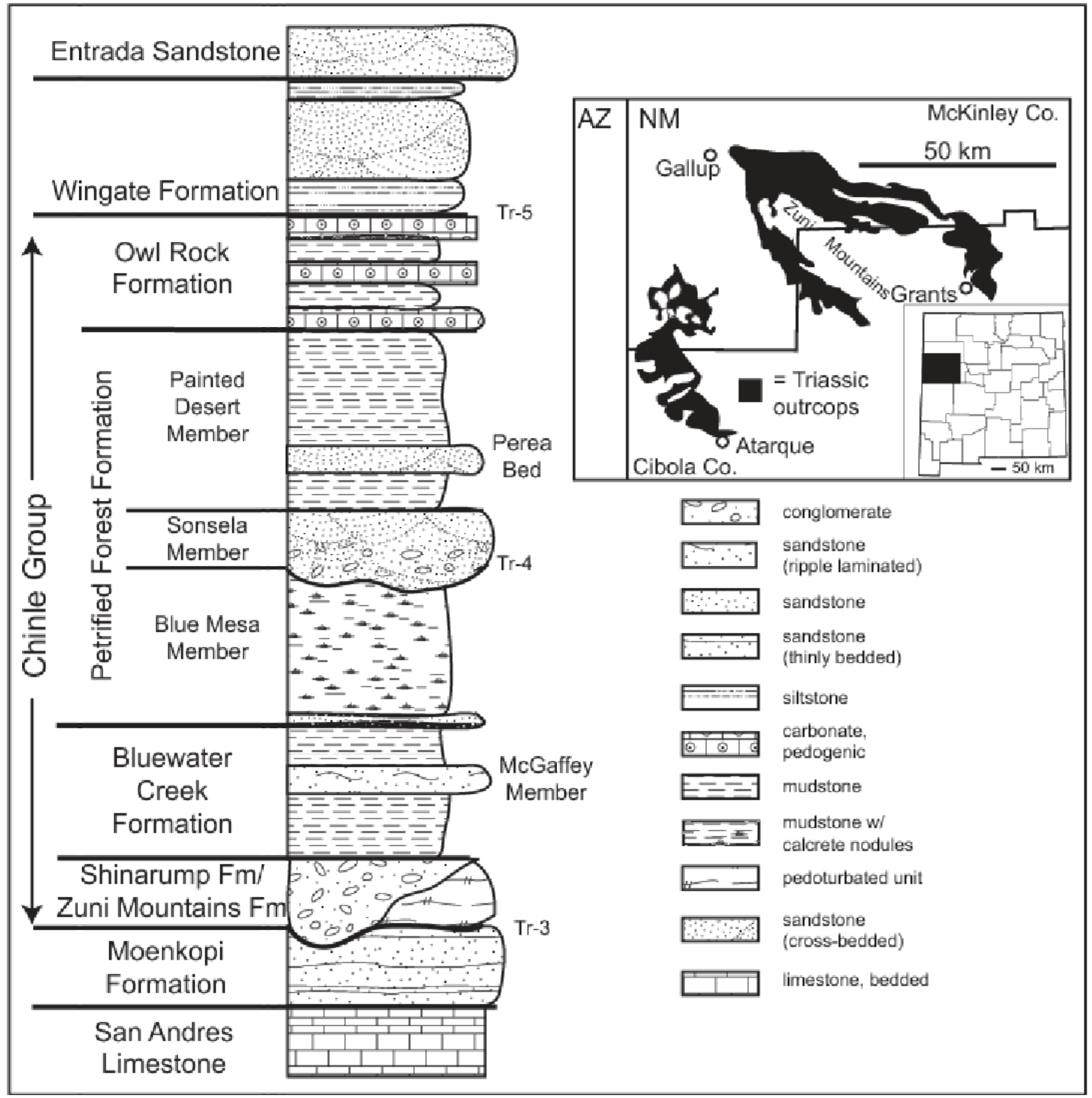

SOURCE:

TRIASSIC STRATIGRAPHY IN THE ZUNI MOUNTAINS, WEST-CENTRAL NEW MEXICO, A.B. HECKERT, 2011

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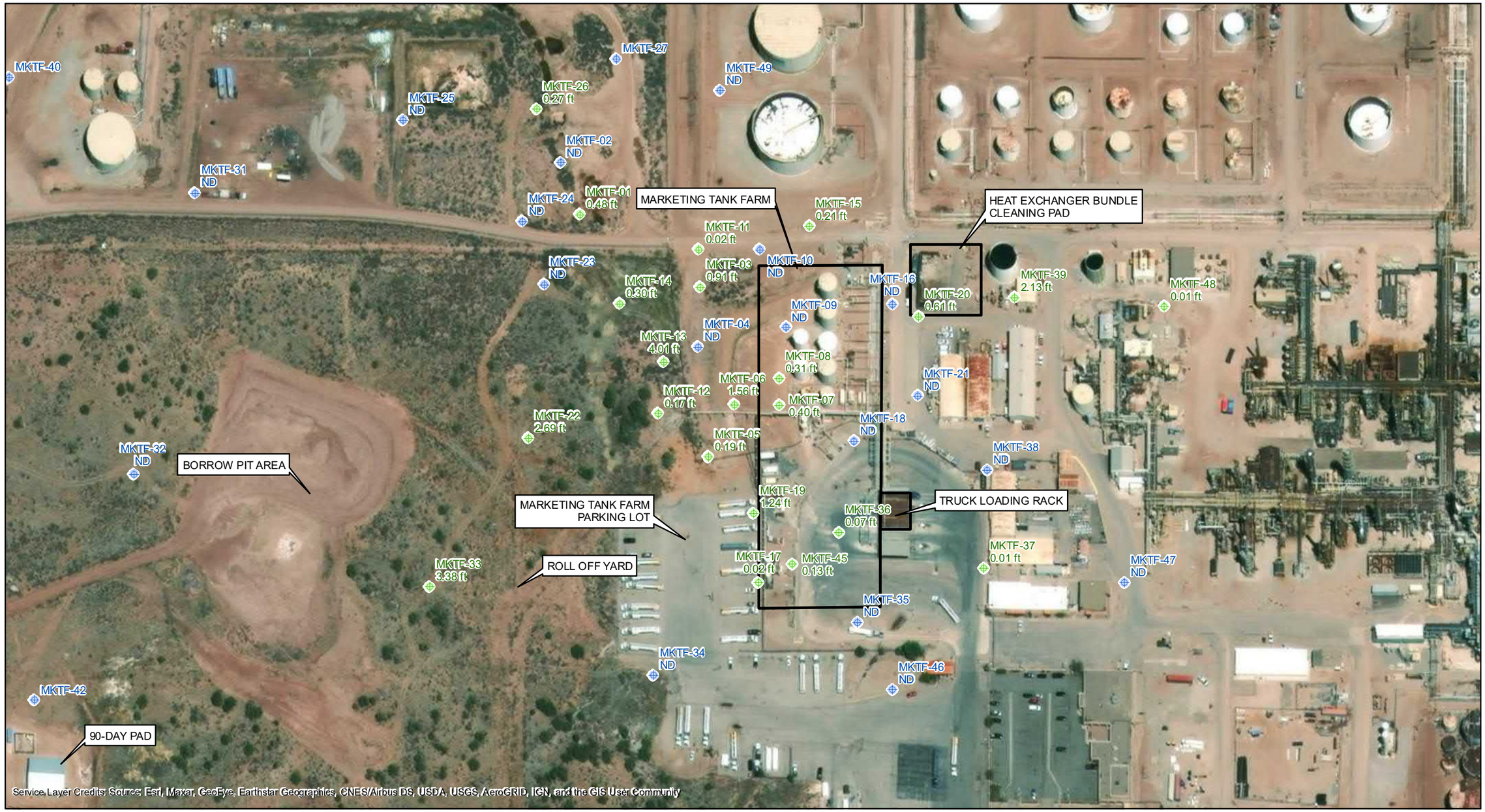
FIGURE 1-2

GALLUP REGIONAL STRATIGRAPHY

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: KEJ | Checked By: PH | Date: 3/24/21 | File: 1-2_GallupStratigraphy_Fig1-2.mxd



EXPLANATION

- MONITORING WELL - FOLLOWED BY SPH (SEPARATE PHASE HYDROCARBON) IN FEET
- MONITORING WELL - SPH NOT DETECTED
- SITE FEATURE

N

0 160 '

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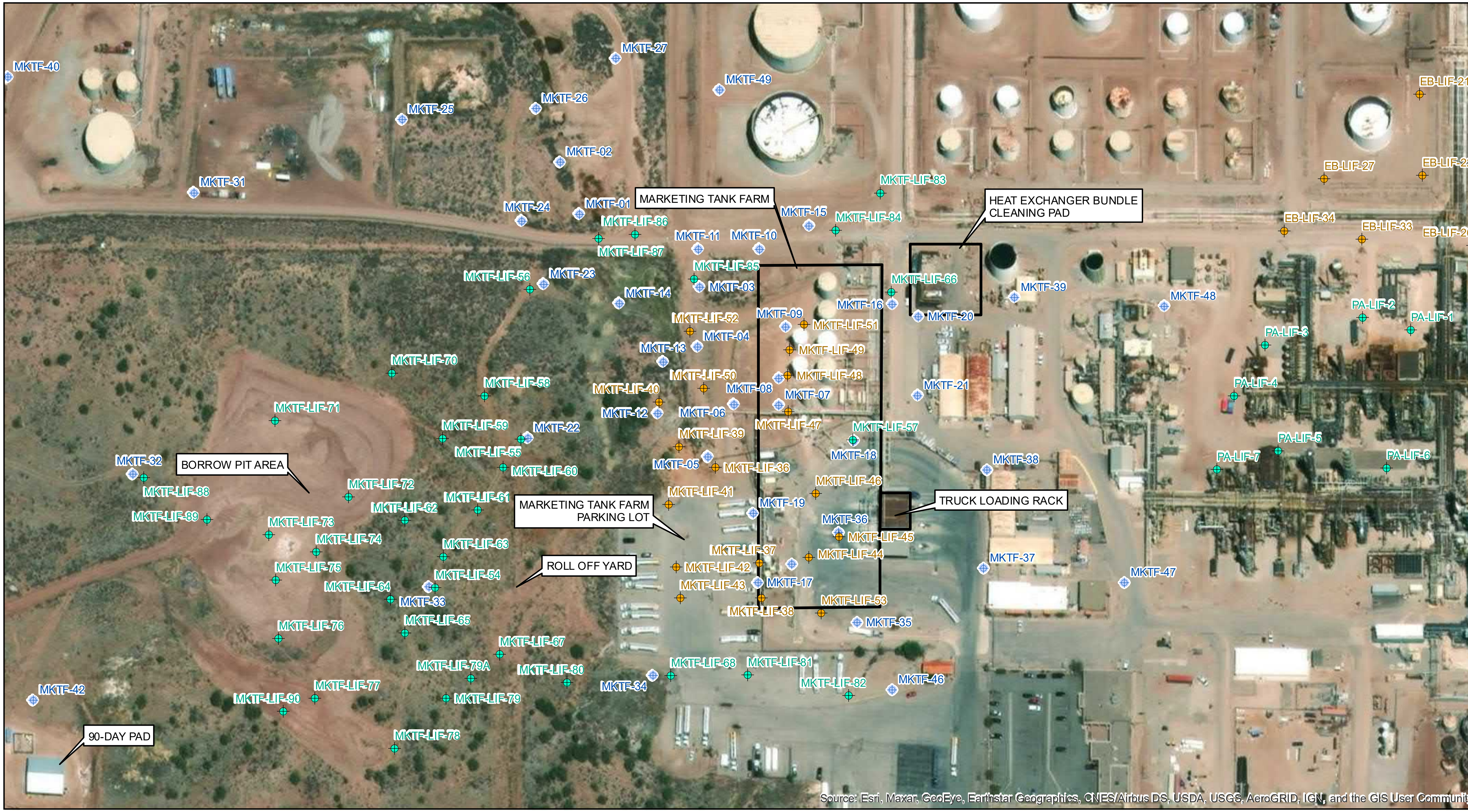
FIGURE 1-3

SPH THICKNESS JANUARY 2021
MARKETING TANK FARM/LOADING RACK

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: KEJ	Checked By: PH	Scale: 1 " = 160 '	Date: 3/24/21	File: 1-3_SPH_MarketingTankFarm_LoadingRack_Fig1-3.mxd



EXPLANATION

- 02/2021 LIF BORING LOCATION
- 11/2019 LIF BORING LOCATION
- MONITORING WELL
- SITE FEATURE

N

0 160 '

NOTE:

LIF - LASER-INDUCED FLORESCENCE

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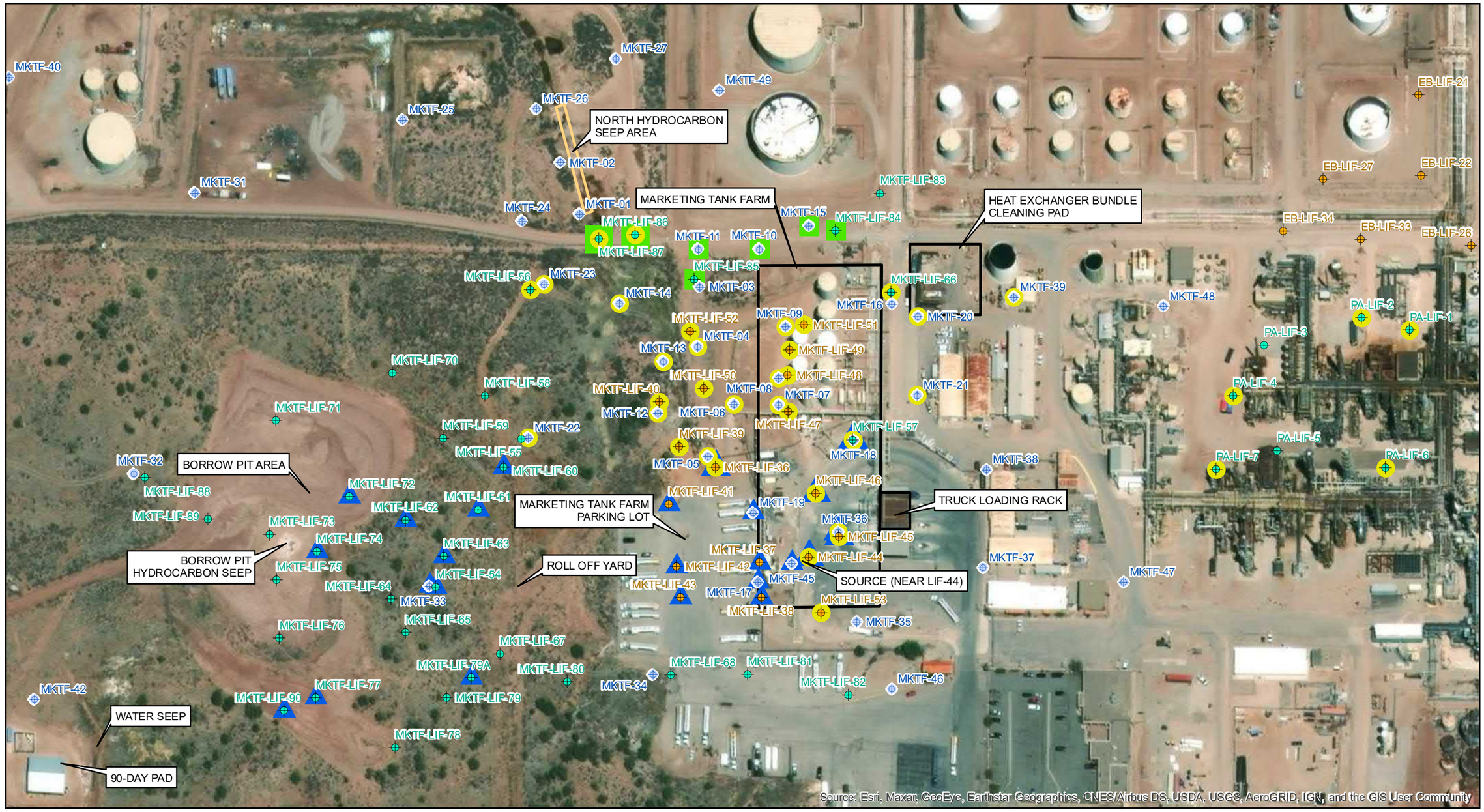
FIGURE 3-1

**LIF SAMPLE LOCATIONS
MARKETING TANK FARM/LOADING RACK**

**MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO**

Drawn By: KEJ	Checked By: PH	Scale: 1 " = 160 '	Date: 3/24/21	File: 3-1_LIF_MarketingTankFarm_LoadingRack_Fig3-1.mxd



EXPLANATION

- 02/2021 LIF BORING LOCATION
- 11/2019 LIF BORING LOCATION
- MONITORING WELL
- SEEP AREA
- SITE FEATURE

SPH OCCURRENCE

- DIESEL
- GASOLINE
- NAPHTHA

N

0 160'

NOTES:

-LIF - LASER-INDUCED FLORESCENCE
-SPH - SEPARATE PHASE HYDROCARBON
-PLUME DEFINITION IS BASED ON A COMBINATION ON THE PRESENCE OF SPH IN WELLS AND LIF SIGNATURES.

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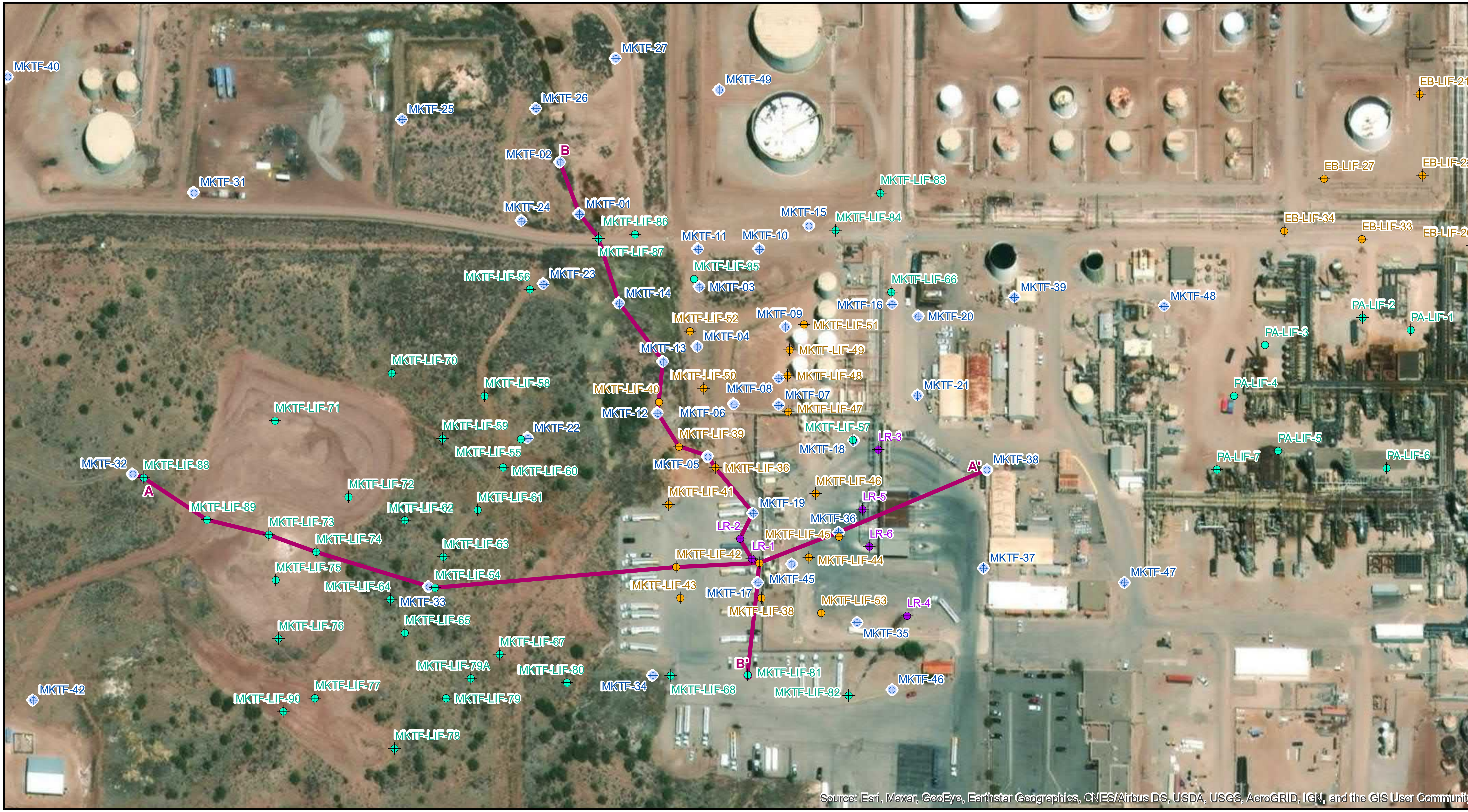
FIGURE 3-2

APPROXIMATE LOCATIONS OF SPH OCCURRENCE MARKETING TANK FARM/LOADING RACK

MARATHON PETROLEUM COMPANY GALLUP REFINING DIVISION GALLUP, NEW MEXICO

Drawn By: KEJ	Checked By: PH	Scale: 1 " = 160 '	Date: 3/26/21	File: 3-2_Plume_MarketingTankFarm_LoadingRack_Fig3-2.mxd



EXPLANATION

- HISTORICAL BORING LOCATION
- 02/2021 LIF BORING LOCATION
- 11/2019 LIF BORING LOCATION
- MONITORING WELL
- CROSS-SECTION LINE

N

0 160 '

NOTE:

LIF - LASER-INDUCED FLORESCENCE

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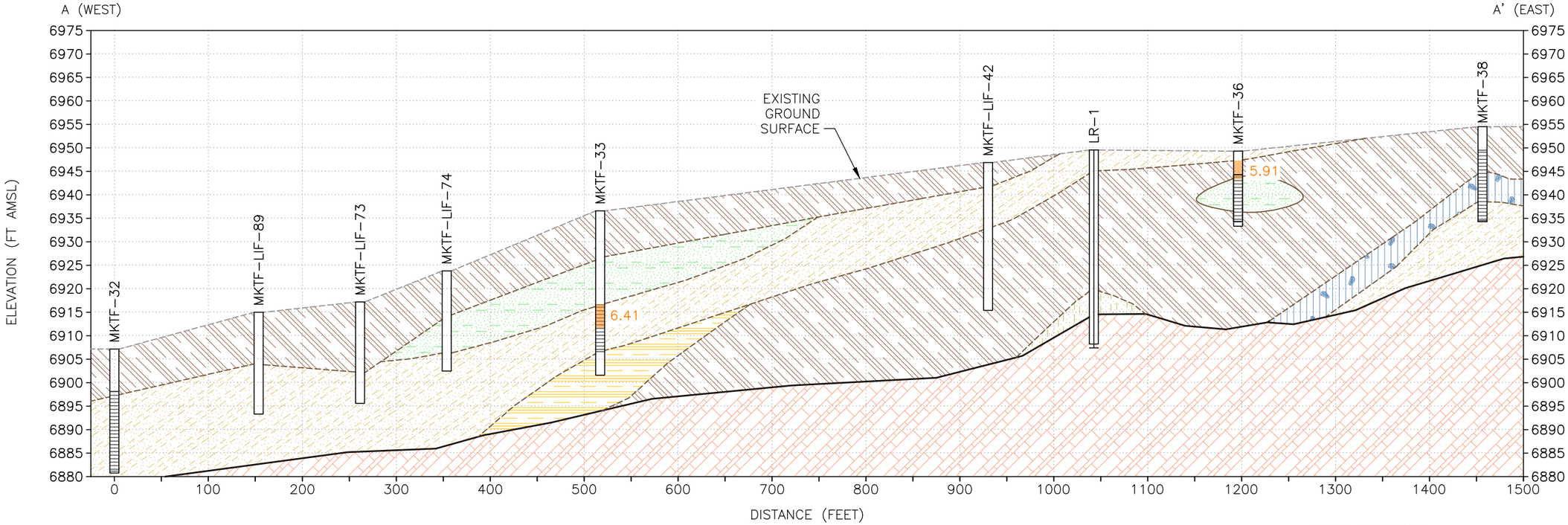
FIGURE 3-3

CROSS-SECTION LOCATION MAP
MARKETING TANK FARM/LOADING RACK

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: KEJ	Checked By: PH	Scale: 1 " = 160 '	Date: 3/25/21	File: 3-3_XSect_MarketingTankFarm_LoadingRack_Fig3-3.mxd



EXPLANATION

- MKTF-LIF-81 — DESIGNATION
- WELL OR BORING
- SCREENED INTERVAL
- ALLUVIUM/CHINLE GROUP CONTACT
- GEOLOGIC CONTACT (DASHED WHERE INFERRED)
- 6.41 — HISTORICAL MAXIMUM SEPARATE PHASE HYDROCARBONS (SPH) THICKNESS
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

- FILL
- SILTY CLAY
- SANDY CLAY
- CLAYEY SAND
- SANDY GRAVEL
- SANDY CLAY
- SHALE/MUDSTONE
- CLAY
- SANDY SILT

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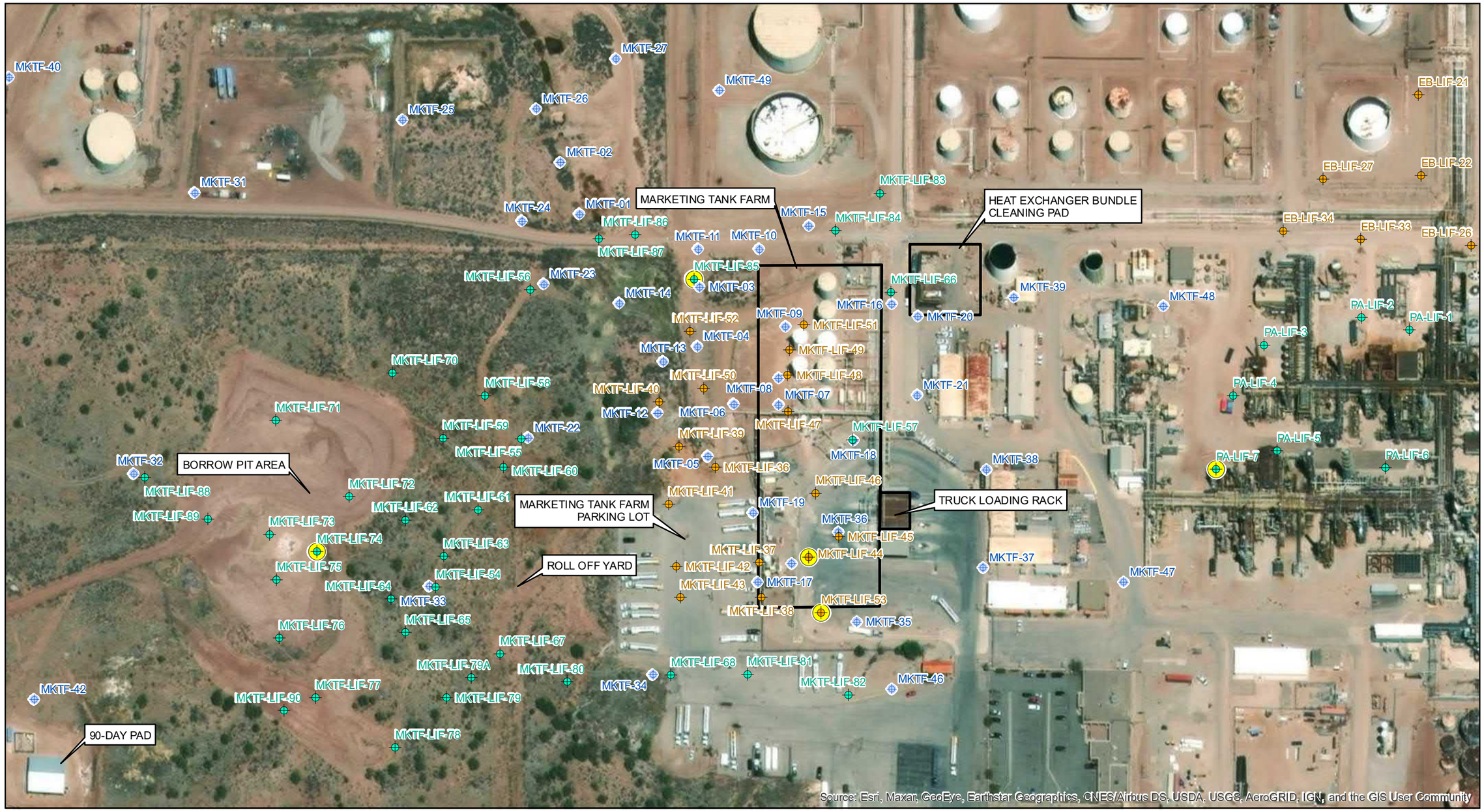
FIGURE 3-4

CROSS SECTIONS WITH MAXIMUM HISTORICAL THICKNESS OF SEPARATE PHASE HYDROCARBONS

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale: AS SHOWN	Date: 2/19/21	File: 697-XSEC-AB-SPH-202102

M:\TION\MARATHON\CAD\GALLUP_REPORTS\LIF\202102_ADDITIONAL_LIF\697-XSEC-AB-SPH-202102



EXPLANATION

- 02/2021 LIF BORING LOCATION
- 11/2019 LIF BORING LOCATION
- MONITORING WELL
- SOIL SAMPLE LOCATION
- SITE FEATURE

N

0 160 '

NOTE:

LIF - LASER-INDUCED FLORESCENCE

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FIGURE 3-5

SOIL SAMPLE LOCATIONS
MARKETING TANK FARM/LOADING RACK

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: KEJ	Checked By: PH	Scale: 1 " = 160 '	Date: 3/24/21	File: 3-5_SoilS_MarketingTankFarm_LoadingRack_Fig3-5.mxd

Appendices

Appendix A – Fluid Level Measurements

Appendix B – LIF/HP Methods

Appendix C – LIF/HP Logs

Appendix D – V-trench Excavation Method

Appendix E – Laboratory Analytical Reports

Appendix A – Fluid Level Measurements

APPENDIX A. FLUID LEVEL MEASUREMENTS
MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION, GALLUP, NEW MEXICO

Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
BW-1A	9/8/2014	6885.12	NA	Dry	Dry	ND	NA	46.06
BW-1A	8/10/2015	6885.12	NA	Dry	Dry	ND	NA	46.06
BW-1A	9/8/2016	6885.12	NA	Dry	Dry	ND	NA	46.06
BW-1A	9/13/2017	6885.12	NA	Dry	Dry	ND	NA	46.06
BW-1A	8/15/2018	6885.12	NA	Dry	Dry	ND	NA	42.61
BW-1A	8/14/2019	6885.12	NA	Dry	Dry	ND	NA	42.61
BW-1A	9/14/2020	6885.12	NA	Dry	Dry	ND	NA	43.70
BW-1B	9/8/2014	6885.78	NA	Dry	Dry	ND	NA	76.29
BW-1B	8/10/2015	6885.78	NA	Dry	Dry	ND	NA	76.29
BW-1B	9/8/2016	6885.78	NA	Dry	Dry	ND	NA	76.29
BW-1B	9/13/2017	6885.78	NA	Dry	Dry	ND	NA	76.29
BW-1B	8/15/2018	6885.78	NA	Dry	Dry	ND	NA	73.55
BW-1B	8/14/2019	6885.78	NA	6813.56	72.22	ND	NA	73.55
BW-1B	9/14/2020	6885.78	NA	Dry	Dry	ND	NA	73.38
BW-1C	9/10/2014	6885.68	NA	6872.71	12.97	ND	NA	145.29
BW-1C	8/10/2015	6885.68	NA	6873.35	12.33	ND	NA	145.29
BW-1C	9/8/2016	6885.68	NA	6873.13	12.55	ND	NA	145.29
BW-1C	9/13/2017	6885.68	NA	6873.08	12.60	ND	NA	145.29
BW-1C	8/15/2018	6885.68	NA	6872.78	12.90	ND	NA	145.29
BW-1C	8/14/2019	6885.68	NA	6873.29	12.39	ND	NA	145.29
BW-1C	9/14/2020	6885.68	NA	6871.79	13.89	ND	NA	145.29
BW-2A	9/9/2014	6874.69	NA	6842.44	32.25	ND	NA	67.57
BW-2A	8/10/2015	6874.69	NA	6842.69	32.00	ND	NA	67.57
BW-2A	9/8/2016	6874.69	NA	6842.40	32.29	ND	NA	67.57
BW-2A	9/13/2017	6874.69	NA	6842.25	32.44	ND	NA	67.57
BW-2A	8/15/2018	6874.69	NA	6842.35	32.34	ND	NA	67.57
BW-2A	8/14/2019	6874.69	NA	6842.43	32.26	ND	NA	67.57
BW-2A	9/14/2020	6874.69	NA	6841.76	32.93	ND	NA	67.21
BW-2B	9/9/2014	6874.50	NA	6846.35	28.15	ND	NA	92.26
BW-2B	8/10/2015	6874.50	NA	6846.50	28.00	ND	NA	92.26
BW-2B	9/8/2016	6874.50	NA	6846.66	27.84	ND	NA	92.26
BW-2B	9/13/2017	6874.50	NA	6846.22	28.28	ND	NA	92.26
BW-2B	8/15/2018	6874.50	NA	6846.25	28.25	ND	NA	92.26
BW-2B	8/14/2019	6874.50	NA	6846.05	28.45	ND	NA	92.26
BW-2B	9/14/2020	6874.50	NA	6845.71	28.79	ND	NA	92.26
BW-2C	9/10/2014	6875.30	NA	6854.60	20.70	ND	NA	152.84
BW-2C	8/10/2015	6875.30	NA	6854.74	20.56	ND	NA	152.84
BW-2C	9/8/2016	6875.30	NA	6854.67	20.63	ND	NA	152.84
BW-2C	9/13/2017	6875.30	NA	6854.40	20.90	ND	NA	152.84
BW-2C	8/15/2018	6875.30	NA	6854.45	20.85	ND	NA	152.84
BW-2C	8/14/2019	6875.30	NA	6854.10	21.20	ND	NA	152.84
BW-2C	9/14/2020	6875.30	NA	6853.98	21.32	ND	NA	149.10
BW-3A	9/8/2014	6878.39	NA	Dry	Dry	ND	NA	52.35
BW-3A	8/10/2015	6878.39	NA	Dry	Dry	ND	NA	52.35
BW-3A	9/8/2016	6878.39	NA	Dry	Dry	ND	NA	52.35
BW-3A	9/13/2017	6878.39	NA	Dry	Dry	ND	NA	52.35
BW-3A	8/15/2018	6878.39	NA	Dry	Dry	ND	NA	52.38
BW-3A	8/14/2019	6878.39	NA	Dry	Dry	ND	NA	52.38
BW-3A	9/14/2020	6878.39	NA	Dry	Dry	ND	NA	53.30
BW-3B	9/10/2014	6878.59	NA	6845.34	33.25	ND	NA	69.40
BW-3B	8/10/2015	6878.59	NA	6845.59	33.00	ND	NA	69.40

APPENDIX A. FLUID LEVEL MEASUREMENTS
MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION, GALLUP, NEW MEXICO

Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
BW-3B	9/8/2016	6878.59	NA	6845.17	33.42	ND	NA	69.40
BW-3B	9/13/2017	6878.59	NA	6845.21	33.38	ND	NA	69.40
BW-3B	8/15/2018	6878.59	NA	6845.24	33.35	ND	NA	69.40
BW-3B	8/14/2019	6878.59	NA	6845.28	33.31	ND	NA	69.40
BW-3B	9/14/2020	6878.59	NA	6844.35	34.24	ND	NA	69.54
BW-3C	9/10/2014	6877.95	NA	6870.12	7.83	ND	NA	154.55
BW-3C	8/10/2015	6877.95	NA	6870.20	7.75	ND	NA	154.55
BW-3C	9/8/2016	6877.95	NA	6869.65	8.30	ND	NA	154.55
BW-3C	9/13/2017	6877.95	NA	6870.15	7.80	ND	NA	154.55
BW-3C	8/15/2018	6877.95	NA	6869.77	8.18	ND	NA	154.55
BW-3C	8/14/2019	6877.95	NA	6870.09	7.86	ND	NA	154.55
BW-3C	9/14/2020	6877.95	NA	6869.43	8.52	ND	NA	150.20
BW-4A	9/21/2017	6873.18	NA	Dry	Dry	ND	NA	38.80
BW-4A	12/8/2017	6873.18	NA	Dry	Dry	ND	NA	38.30
BW-4A	2/26/2018	6873.18	NA	Dry	Dry	ND	NA	38.80
BW-4A	4/25/2018	6873.18	NA	Dry	Dry	ND	NA	38.80
BW-4A	8/15/2018	6873.18	NA	Dry	Dry	ND	NA	38.80
BW-4A	11/7/2018	6873.18	NA	Dry	Dry	ND	NA	38.30
BW-4A	3/27/2019	6873.18	NA	Dry	Dry	ND	NA	38.32
BW-4A	5/21/2019	6873.18	NA	Dry	Dry	ND	NA	38.32
BW-4A	8/23/2019	6873.18	NA	Dry	Dry	ND	NA	38.32
BW-4A	10/16/2019	6873.18	NA	Dry	Dry	ND	NA	38.32
BW-4A	9/14/2020	6873.18	NA	Dry	Dry	ND	NA	38.90
BW-4A	12/7/2020	6873.18	NA	Dry	Dry	ND	NA	38.90
BW-4B	9/21/2017	6873.23	NA	6841.65	31.58	ND	NA	63.50
BW-4B	12/8/2017	6873.23	NA	6835.28	37.95	ND	NA	63.50
BW-4B	2/26/2018	6873.23	NA	6834.80	38.43	ND	NA	63.50
BW-4B	4/25/2018	6873.23	NA	6829.63	43.60	ND	NA	63.50
BW-4B	8/15/2018	6873.23	NA	6834.18	39.05	ND	NA	63.50
BW-4B	11/13/2018	6873.23	NA	6828.36	44.87	ND	NA	63.50
BW-4B	3/27/2019	6873.23	NA	6833.93	39.30	ND	NA	63.50
BW-4B	5/21/2019	6873.23	NA	6827.22	46.01	ND	NA	63.50
BW-4B	8/23/2019	6873.23	NA	6827.23	46.00	ND	NA	63.50
BW-4B	10/16/2019	6873.23	NA	6825.73	47.50	ND	NA	63.50
BW-4B	9/14/2020	6873.23	6833.38	6833.37	39.86	39.85	0.01	63.50
BW-4B	12/7/2020	6873.23	NA	6837.37	35.86	ND	NA	63.50
BW-5A	9/21/2017	6877.00	NA	Dry	Dry	ND	NA	23.00
BW-5A	12/8/2017	6877.00	NA	Dry	Dry	ND	NA	23.02
BW-5A	2/26/2018	6877.00	NA	Dry	Dry	ND	NA	23.02
BW-5A	4/25/2018	6877.00	NA	Dry	Dry	ND	NA	23.02
BW-5A	8/15/2018	6877.00	NA	Dry	Dry	ND	NA	23.02
BW-5A	11/13/2018	6877.00	NA	Dry	Dry	ND	NA	23.02
BW-5A	3/27/2019	6877.00	NA	6853.75	23.25	ND	NA	23.00
BW-5A	5/21/2019	6877.00	NA	6853.70	23.30	ND	NA	23.00
BW-5A	8/15/2019	6877.00	NA	6855.74	21.26	ND	NA	23.02
BW-5A	10/16/2019	6877.00	NA	6853.75	23.25	ND	NA	23.30
BW-5A	9/14/2020	6877.00	NA	Dry	Dry	ND	NA	23.40
BW-5A	12/7/2020	6877.00	NA	6853.73	23.27	ND	NA	23.40
BW-5B	9/21/2017	6876.82	NA	6868.17	8.65	ND	NA	61.45
BW-5B	12/8/2017	6876.82	NA	6867.82	9.00	ND	NA	61.45
BW-5B	2/26/2018	6876.82	NA	6866.54	10.28	ND	NA	61.45

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
BW-5B	4/25/2018	6876.82	NA	6867.07	9.75	ND	NA	61.45
BW-5B	8/15/2018	6876.82	NA	6866.78	10.04	ND	NA	61.45
BW-5B	11/13/2018	6876.82	NA	6866.25	10.57	ND	NA	61.45
BW-5B	3/27/2019	6876.82	NA	6867.44	9.38	ND	NA	61.45
BW-5B	5/21/2019	6876.82	NA	6867.62	9.20	ND	NA	61.45
BW-5B	8/15/2019	6876.82	NA	6867.15	9.67	ND	NA	61.45
BW-5B	10/16/2019	6876.82	NA	6866.55	10.27	ND	NA	61.45
BW-5B	9/14/2020	6876.82	NA	6866.21	10.61	ND	NA	61.45
BW-5B	12/7/2020	6876.82	NA	6866.29	10.53	ND	NA	61.45
BW-5C	9/21/2017	6876.85	NA	6873.86	2.99	ND	NA	76.35
BW-5C	12/8/2017	6876.85	NA	6874.05	2.80	ND	NA	76.35
BW-5C	2/26/2018	6876.85	NA	6874.22	2.63	ND	NA	76.35
BW-5C	4/25/2018	6876.85	NA	6874.30	2.55	ND	NA	76.35
BW-5C	8/15/2018	6876.85	NA	6873.53	3.32	ND	NA	76.35
BW-5C	11/13/2018	6876.85	NA	6873.36	3.49	ND	NA	76.35
BW-5C	3/27/2019	6876.85	NA	6874.86	1.99	ND	NA	76.35
BW-5C	5/21/2019	6876.85	NA	6875.25	1.60	ND	NA	76.35
BW-5C	8/15/2019	6876.85	NA	6874.16	2.69	ND	NA	76.35
BW-5C	10/16/2019	6876.85	NA	6873.35	3.50	ND	NA	76.35
BW-5C	9/14/2020	6876.85	NA	6872.49	4.36	ND	NA	76.35
BW-5C	12/7/2020	6876.85	NA	6872.58	4.27	ND	NA	76.35
GWM-1	3/11/2014	6912.61	NA	6893.69	18.92	ND	NA	26.20
GWM-1	6/5/2014	6912.61	NA	6893.51	19.10	ND	NA	26.20
GWM-1	9/12/2014	6912.61	NA	6893.05	19.56	ND	NA	26.20
GWM-1	11/13/2014	6912.61	NA	6892.53	20.08	ND	NA	26.20
GWM-1	3/10/2015	6912.61	NA	6891.62	20.99	ND	NA	26.20
GWM-1	6/2/2015	6912.61	NA	6891.69	20.92	ND	NA	26.20
GWM-1	8/11/2015	6912.61	6891.21	NA	NA	21.40	NA	26.20
GWM-1	8/24/2015	6912.61	6891.61	6891.16	21.45	21.00	0.45	26.20
GWM-1	10/29/2015	6912.61	6891.48	6891.14	21.47	21.13	0.34	26.20
GWM-1	3/1/2016	6912.61	6889.77	6889.73	22.88	22.84	0.04	26.20
GWM-1	6/7/2016	6912.61	6891.25	6891.22	21.39	21.36	0.03	26.20
GWM-1	9/13/2016	6912.61	6891.32	NA	NA	21.29	NA	26.20
GWM-1	11/14/2016	6912.61	6891.11	6891.09	21.52	21.50	0.02	26.20
GWM-1	3/16/2017	6912.61	6890.87	6890.57	22.04	21.74	0.30	26.20
GWM-1	6/2/2017	6912.61	6891.07	6890.63	21.98	21.54	0.44	26.20
GWM-1	9/8/2017	6912.61	6891.12	6890.90	21.71	21.49	0.22	26.20
GWM-1	12/4/2017	6912.61	6892.91	6891.91	20.70	19.70	1.00	26.20
GWM-1	2/12/2018	6912.61	6890.78	6890.41	22.20	21.83	0.37	26.20
GWM-1	4/26/2018	6912.61	6890.76	6890.36	22.25	21.85	0.40	26.38
GWM-1	8/15/2018	6912.61	6891.11	6891.07	21.54	21.50	0.04	26.42
GWM-1	11/19/2018	6912.61	6891.19	6891.06	21.55	21.42	0.13	26.20
GWM-1	3/28/2019	6912.61	6891.02	6890.54	22.07	21.59	0.48	26.20
GWM-1	5/8/2019	6912.61	6891.29	6891.00	21.61	21.32	0.29	26.20
GWM-1	8/6/2019	6912.61	6891.84	6891.71	20.90	20.77	0.13	26.42
GWM-1	10/21/2019	6912.61	6891.97	6891.78	20.83	20.64	0.19	26.20
GWM-1	9/15/2020	6912.61	6891.88	6891.21	21.40	20.73	0.67	26.65
GWM-1	11/9/2020	6912.61	6891.73	6890.89	21.72	20.88	0.84	26.65
GWM-1	12/7/2020	6912.61	6891.70	6890.76	21.85	20.91	0.94	26.45
GWM-2	3/11/2014	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	6/5/2014	6913.09	NA	Dry	Dry	ND	NA	18.81

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GWM-2	9/12/2014	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	11/11/2014	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	3/10/2015	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	6/2/2015	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	8/11/2015	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	10/29/2015	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	3/1/2016	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	6/7/2016	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	9/13/2016	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	11/14/2016	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	3/16/2017	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	6/2/2017	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	9/5/2017	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	12/4/2017	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	2/12/2018	6913.09	NA	Dry	Dry	ND	NA	19.05
GWM-2	4/26/2018	6913.09	NA	Dry	Dry	ND	NA	19.01
GWM-2	8/15/2018	6913.09	NA	Dry	Dry	ND	NA	19.04
GWM-2	11/19/2018	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	3/28/2019	6913.09	NA	Dry	Dry	ND	NA	19.09
GWM-2	5/8/2019	6913.09	NA	Dry	Dry	ND	NA	19.09
GWM-2	8/6/2019	6913.09	NA	Dry	Dry	ND	NA	19.04
GWM-2	10/19/2019	6913.09	NA	Dry	Dry	ND	NA	18.81
GWM-2	9/15/2020	6913.09	NA	Dry	Dry	ND	NA	18.08
GWM-2	11/10/2020	6913.09	NA	Dry	Dry	ND	NA	18.08
GWM-2	12/7/2020	6913.09	NA	Dry	Dry	ND	NA	18.08
GWM-3	3/11/2014	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	6/5/2014	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	9/12/2014	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	11/11/2014	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	3/10/2015	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	6/2/2015	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	8/11/2015	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	10/29/2015	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	3/1/2016	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	6/7/2016	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	9/13/2016	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	11/14/2016	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	3/16/2017	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	6/2/2017	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	9/5/2017	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	12/4/2017	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	2/12/2018	6910.25	NA	Dry	Dry	ND	NA	18.05
GWM-3	4/26/2018	6910.25	NA	Dry	Dry	ND	NA	18.02
GWM-3	8/15/2018	6910.25	NA	Dry	Dry	ND	NA	18.04
GWM-3	11/19/2018	6910.25	NA	Dry	Dry	ND	NA	17.80
GWM-3	3/28/2019	6910.25	NA	Dry	Dry	ND	NA	18.06
GWM-3	5/8/2019	6910.25	NA	Dry	Dry	ND	NA	18.06
GWM-3	8/6/2019	6910.25	NA	Dry	Dry	ND	NA	18.04
GWM-3	9/15/2020	6910.25	NA	Dry	Dry	ND	NA	19.15
GWM-3	10/11/2020	6910.25	NA	Dry	Dry	ND	NA	19.15
GWM-3	12/7/2020	6910.25	NA	Dry	Dry	ND	NA	19.15

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KA-3	3/10/2014	6912.52	NA	6904.49	8.03	ND	NA	23.20
KA-3	6/5/2014	6912.52	NA	6904.57	7.95	ND	NA	23.20
KA-3	9/11/2014	6912.52	NA	6903.52	9.00	ND	NA	23.20
KA-3	11/11/2014	6912.52	NA	6904.52	8.00	ND	NA	23.20
KA-3	3/10/2015	6912.52	NA	6904.28	8.24	ND	NA	23.20
KA-3	6/2/2015	6912.52	NA	6903.93	8.59	ND	NA	23.20
KA-3	8/10/2015	6912.52	NA	6903.74	8.78	ND	NA	23.20
KA-3	10/28/2015	6912.52	NA	6904.32	8.20	ND	NA	23.20
KA-3	3/3/2016	6912.52	NA	6904.84	7.68	ND	NA	23.20
KA-3	6/6/2016	6912.52	NA	6905.10	7.42	ND	NA	23.20
KA-3	9/1/2016	6912.52	NA	6904.39	8.13	ND	NA	23.20
KA-3	11/14/2016	6912.52	NA	6904.24	8.28	ND	NA	23.20
KA-3	2/21/2017	6912.52	NA	6905.15	7.37	ND	NA	23.20
KA-3	6/1/2017	6912.52	NA	6904.30	8.22	ND	NA	23.20
KA-3	9/5/2017	6912.52	NA	6904.31	8.21	ND	NA	23.20
KA-3	12/4/2017	6912.52	NA	6904.52	8.00	ND	NA	24.28
KA-3	2/9/2018	6912.52	NA	6904.12	8.40	ND	NA	24.30
KA-3	4/26/2018	6912.52	NA	6904.02	8.50	ND	NA	24.24
KA-3	8/15/2018	6912.52	NA	NA	NA	NA	NA	24.24
KA-3	11/8/2018	6912.52	NA	NA	NA	NA	NA	24.24
KA-3	3/28/2019	6912.52	NA	NA	NA	NA	NA	24.24
KA-3	5/28/2019	6912.52	NA	6902.57	9.95	ND	NA	23.20
KA-3	8/22/2019	6912.52	NA	6903.47	9.05	ND	NA	23.20
KA-3	10/21/2019	6912.52	NA	6903.36	9.16	ND	NA	23.20
KA-3	12/7/2020	6912.52	NA	6902.96	9.56	ND	NA	23.20
MKTF-01	1/13/2014	6920.67	6912.77	6912.33	8.34	7.90	0.44	17.42
MKTF-01	2/12/2014	6920.67	6913.94	6913.19	7.48	6.73	0.75	17.42
MKTF-01	3/11/2014	6920.67	6914.57	6914.29	6.38	6.10	0.28	17.42
MKTF-01	6/6/2014	6920.67	NA	6913.67	7.00	ND	NA	17.42
MKTF-01	9/15/2014	6920.67	6913.73	6913.69	6.98	6.94	0.04	17.42
MKTF-01	11/14/2014	6920.67	6913.37	6913.35	7.32	7.30	0.02	17.42
MKTF-01	3/11/2015	6920.67	NA	6914.82	5.85	ND	NA	17.42
MKTF-01	6/9/2015	6920.67	NA	6913.52	7.15	ND	NA	17.42
MKTF-01	8/21/2015	6920.67	NA	6914.44	6.23	ND	NA	17.42
MKTF-01	11/4/2015	6920.67	NA	6914.80	5.87	ND	NA	17.42
MKTF-01	2/24/2016	6920.67	NA	6914.83	5.84	ND	NA	17.42
MKTF-01	6/10/2016	6920.67	NA	6913.65	7.02	ND	NA	17.42
MKTF-01	9/7/2016	6920.67	6913.55	6912.05	8.62	7.12	1.50	17.42
MKTF-01	11/4/2016	6920.67	NA	6914.80	5.87	ND	NA	17.42
MKTF-01	3/14/2017	6920.67	6916.02	6915.86	4.81	4.65	0.16	17.42
MKTF-01	6/7/2017	6920.67	6915.78	6915.25	5.42	4.89	0.53	17.42
MKTF-01	10/3/2017	6920.67	6914.47	6914.11	6.56	6.20	0.36	17.42
MKTF-01	11/20/2017	6920.67	6916.05	6915.72	4.95	4.62	0.33	17.42
MKTF-01	2/7/2018	6920.67	6915.62	6915.27	5.40	5.05	0.35	17.42
MKTF-01	4/25/2018	6920.67	6914.45	6914.15	6.52	6.22	0.30	17.35
MKTF-01	8/15/2018	6920.67	6914.27	6913.96	6.71	6.40	0.31	17.27
MKTF-01	11/27/2018	6920.67	6915.17	6914.80	5.87	5.50	0.37	17.42
MKTF-01	2/19/2019	6920.67	6916.27	6915.93	4.74	4.40	0.34	17.42
MKTF-01	5/6/2019	6920.67	6916.28	6915.93	4.74	4.39	0.35	17.42
MKTF-01	8/30/2019	6920.67	6916.09	6915.72	4.95	4.58	0.37	17.42
MKTF-01	11/19/2019	6920.67	6915.53	6915.22	5.45	5.14	0.31	17.42

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MKTF-01	2/24/2020	6920.67	6915.80	6915.51	5.16	4.87	0.29	17.42
MKTF-01	6/26/2020	6920.67	6915.17	6914.96	5.71	5.50	0.21	17.42
MKTF-01	9/15/2020	6920.67	6915.06	6915.05	5.62	5.61	0.01	17.48
MKTF-01	11/10/2020	6920.67	6915.06	6914.78	5.89	5.61	0.28	17.48
MKTF-01	12/3/2020	6920.67	6914.93	6914.65	6.02	5.74	0.28	17.43
MKTF-02	1/13/2014	6917.45	NA	6909.96	7.49	ND	NA	20.48
MKTF-02	2/12/2014	6917.45	NA	6909.97	7.48	ND	NA	20.48
MKTF-02	3/11/2014	6917.45	NA	6910.42	7.03	ND	NA	20.48
MKTF-02	6/6/2014	6917.45	NA	6909.85	7.60	ND	NA	20.48
MKTF-02	9/15/2014	6917.45	NA	6909.04	8.41	ND	NA	20.48
MKTF-02	11/14/2014	6917.45	NA	6909.24	8.21	ND	NA	20.48
MKTF-02	3/11/2015	6917.45	NA	6910.57	6.88	ND	NA	20.48
MKTF-02	6/9/2015	6917.45	NA	6909.90	7.55	ND	NA	20.48
MKTF-02	8/21/2015	6917.45	NA	6910.15	7.30	ND	NA	20.48
MKTF-02	11/4/2015	6917.45	NA	6910.20	7.25	ND	NA	20.48
MKTF-02	2/24/2016	6917.45	NA	6910.23	7.22	ND	NA	20.48
MKTF-02	6/10/2016	6917.45	NA	6909.36	8.09	ND	NA	20.48
MKTF-02	9/7/2016	6917.45	NA	6909.17	8.28	ND	NA	20.48
MKTF-02	11/4/2016	6917.45	NA	6910.20	7.25	ND	NA	20.48
MKTF-02	3/16/2017	6917.45	NA	6910.11	7.34	ND	NA	20.48
MKTF-02	6/7/2017	6917.45	6910.35	6910.34	7.11	7.10	0.01	20.48
MKTF-02	10/3/2017	6917.45	NA	6910.78	6.67	ND	NA	20.48
MKTF-02	11/20/2017	6917.45	NA	6910.45	7.00	ND	NA	20.35
MKTF-02	2/6/2018	6917.45	NA	6910.01	7.44	ND	NA	20.34
MKTF-02	4/25/2018	6917.45	NA	6909.50	7.95	ND	NA	20.36
MKTF-02	8/15/2018	6917.45	NA	6909.05	8.40	ND	NA	20.43
MKTF-02	11/27/2018	6917.45	NA	6909.05	8.40	ND	NA	20.35
MKTF-02	3/28/2019	6917.45	NA	6911.11	6.34	ND	NA	20.48
MKTF-02	5/6/2019	6917.45	NA	6911.21	6.24	ND	NA	20.48
MKTF-02	8/23/2019	6917.45	NA	6910.40	7.05	ND	NA	20.43
MKTF-02	11/19/2019	6917.45	NA	6910.31	7.14	ND	NA	20.35
MKTF-02	2/24/2020	6917.45	NA	6910.93	6.52	ND	NA	20.48
MKTF-02	6/26/2020	6917.45	NA	6909.75	7.70	ND	NA	20.48
MKTF-02	9/15/2020	6917.45	NA	6909.57	7.88	ND	NA	20.54
MKTF-02	11/10/2020	6917.45	NA	6910.02	7.43	ND	NA	20.54
MKTF-02	12/3/2020	6917.45	NA	6909.73	7.72	ND	NA	20.54
MKTF-03	1/15/2014	6931.69	6923.59	6922.29	9.40	8.10	1.30	18.45
MKTF-03	2/13/2014	6931.69	NA	6923.36	8.33	ND	NA	18.45
MKTF-03	3/11/2014	6931.69	6923.54	6922.62	9.07	8.15	0.92	18.45
MKTF-03	6/4/2014	6931.69	6922.84	6922.37	9.32	8.85	0.47	18.45
MKTF-03	9/15/2014	6931.69	6922.63	6922.53	9.16	9.06	0.10	18.45
MKTF-03	11/13/2014	6931.69	6922.38	NA	NA	9.31	NA	18.45
MKTF-03	3/17/2015	6931.69	6923.23	6922.43	9.26	8.46	0.80	18.45
MKTF-03	6/4/2015	6931.69	6922.99	6922.37	9.32	8.70	0.62	18.45
MKTF-03	8/18/2015	6931.69	6923.60	6922.78	8.91	8.09	0.82	18.45
MKTF-03	11/3/2015	6931.69	6923.39	6922.29	9.40	8.30	1.10	18.45
MKTF-03	3/17/2016	6931.69	6923.23	6922.43	9.26	8.46	0.80	18.45
MKTF-03	6/9/2016	6931.69	6924.14	6919.86	11.83	7.55	4.28	18.45
MKTF-03	9/12/2016	6931.69	6923.77	6921.37	10.32	7.92	2.40	18.45
MKTF-03	11/3/2016	6931.69	6923.39	6922.29	9.40	8.30	1.10	18.45
MKTF-03	3/2/2017	6931.69	6925.27	6924.10	7.59	6.42	1.17	18.45

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-03	6/7/2017	6931.69	6924.74	6923.44	8.25	6.95	1.30	18.45
MKTF-03	9/26/2017	6931.69	6925.34	6924.54	7.15	6.35	0.80	18.45
MKTF-03	11/28/2017	6931.69	6924.69	6923.74	7.95	7.00	0.95	18.45
MKTF-03	2/8/2018	6931.69	6924.29	6923.44	8.25	7.40	0.85	18.45
MKTF-03	4/25/2018	6931.69	6924.39	6923.47	8.22	7.30	0.92	18.45
MKTF-03	8/16/2018	6931.69	6924.39	6923.44	8.25	7.30	0.95	18.53
MKTF-03	11/19/2018	6931.69	6924.84	6923.84	7.85	6.85	1.00	18.45
MKTF-03	3/25/2019	6931.69	6927.19	6926.09	5.60	4.50	1.10	18.45
MKTF-03	5/13/2019	6931.69	6927.14	6926.03	5.66	4.55	1.11	18.45
MKTF-03	8/21/2019	6931.69	6925.65	6924.42	7.27	6.04	1.23	18.53
MKTF-03	10/30/2019	6931.69	6924.99	6923.69	8.00	6.70	1.30	18.45
MKTF-03	3/5/2020	6931.69	6925.22	6923.85	7.84	6.47	1.37	18.45
MKTF-03	6/26/2020	6931.69	6924.33	6923.06	8.63	7.36	1.27	18.45
MKTF-03	9/15/2020	6931.69	6924.61	6924.60	7.09	7.08	0.01	18.59
MKTF-03	11/10/2020	6931.69	6924.56	6923.26	8.43	7.13	1.30	18.59
MKTF-03	12/3/2020	6931.69	6924.23	6923.07	8.62	7.46	1.16	18.58
MKTF-04	1/15/2014	6933.57	NA	6923.29	10.28	ND	NA	22.15
MKTF-04	2/13/2014	6933.57	NA	6922.89	10.68	ND	NA	22.15
MKTF-04	3/11/2014	6933.57	NA	6923.37	10.20	ND	NA	22.15
MKTF-04	6/4/2014	6933.57	NA	6922.58	10.99	ND	NA	22.15
MKTF-04	9/15/2014	6933.57	NA	6922.48	11.09	ND	NA	22.15
MKTF-04	11/13/2014	6933.57	NA	6922.22	11.35	ND	NA	22.15
MKTF-04	3/16/2015	6933.57	NA	6923.32	10.25	ND	NA	22.15
MKTF-04	6/4/2015	6933.57	NA	6922.57	11.00	ND	NA	22.15
MKTF-04	8/18/2015	6933.57	NA	6922.93	10.64	ND	NA	22.15
MKTF-04	11/3/2015	6933.57	NA	6929.34	4.23	ND	NA	22.15
MKTF-04	2/29/2016	6933.57	NA	6922.89	10.68	ND	NA	22.15
MKTF-04	6/9/2016	6933.57	NA	6923.27	10.30	ND	NA	22.15
MKTF-04	9/11/2016	6933.57	NA	6923.34	10.23	ND	NA	22.15
MKTF-04	11/3/2016	6933.57	NA	6923.17	10.40	ND	NA	22.15
MKTF-04	3/2/2017	6933.57	NA	6925.26	8.31	ND	NA	22.15
MKTF-04	6/7/2017	6933.57	NA	6924.29	9.28	ND	NA	22.15
MKTF-04	9/26/2017	6933.57	NA	6924.77	8.80	ND	NA	22.15
MKTF-04	11/29/2017	6933.57	NA	6924.27	9.30	ND	NA	22.30
MKTF-04	2/14/2018	6933.57	NA	6923.72	9.85	ND	NA	22.37
MKTF-04	4/25/2018	6933.57	NA	6923.87	9.70	ND	NA	22.29
MKTF-04	8/16/2018	6933.57	NA	6923.87	9.70	ND	NA	22.39
MKTF-04	11/19/2018	6933.57	NA	6925.18	8.39	ND	NA	22.30
MKTF-04	3/25/2019	6933.57	NA	6927.12	6.45	ND	NA	22.15
MKTF-04	5/13/2019	6933.57	NA	6927.02	6.55	ND	NA	22.15
MKTF-04	8/21/2019	6933.57	NA	6925.30	8.27	ND	NA	22.39
MKTF-04	10/30/2019	6933.57	NA	6924.64	8.93	ND	NA	22.30
MKTF-04	3/2/2020	6933.57	NA	6925.10	8.47	ND	NA	22.21
MKTF-04	6/26/2020	6933.57	NA	6923.82	9.75	ND	NA	22.15
MKTF-04	9/15/2020	6933.57	6924.18	6924.17	9.40	9.39	0.01	22.72
MKTF-04	11/10/2020	6933.57	NA	6924.37	9.20	ND	NA	22.72
MKTF-04	12/3/2020	6933.57	6923.87	6923.86	9.71	9.70	0.01	22.72
MKTF-05	1/13/2014	6942.22	6927.18	6927.12	15.10	15.04	0.06	17.75
MKTF-05	2/13/2014	6942.22	6926.89	6926.85	15.37	15.33	0.04	17.75
MKTF-05	3/11/2014	6942.22	NA	6926.99	15.23	ND	NA	17.75
MKTF-05	6/4/2014	6942.22	6926.62	6926.57	15.65	15.60	0.05	17.75

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MKTF-05	9/15/2014	6942.22	6926.92	6926.56	15.66	15.30	0.36	17.75
MKTF-05	11/13/2014	6942.22	6926.43	6926.05	16.17	15.79	0.38	17.75
MKTF-05	3/16/2015	6942.22	6926.50	6926.14	16.08	15.72	0.36	17.75
MKTF-05	6/4/2015	6942.22	6926.45	6925.82	16.40	15.77	0.63	17.75
MKTF-05	8/18/2015	6942.22	6926.78	6926.59	15.63	15.44	0.19	17.75
MKTF-05	11/3/2015	6942.22	6926.75	6925.91	16.31	15.47	0.84	17.75
MKTF-05	3/16/2016	6942.22	6926.50	6926.14	16.08	15.72	0.36	17.75
MKTF-05	6/9/2016	6942.22	6926.88	6926.35	15.87	15.34	0.53	17.75
MKTF-05	9/11/2016	6942.22	6927.48	6924.44	17.78	14.74	3.04	17.75
MKTF-05	11/3/2016	6942.22	6926.75	6925.91	16.31	15.47	0.84	17.75
MKTF-05	3/2/2017	6942.22	6928.89	6928.60	13.62	13.33	0.29	17.75
MKTF-05	6/7/2017	6942.22	6928.43	6927.97	14.25	13.79	0.46	17.75
MKTF-05	9/26/2017	6942.22	6929.21	6928.72	13.50	13.01	0.49	17.75
MKTF-05	11/28/2017	6942.22	6928.24	6927.47	14.75	13.98	0.77	17.75
MKTF-05	2/8/2018	6942.22	6927.44	6927.02	15.20	14.78	0.42	17.75
MKTF-05	4/25/2018	6942.22	6927.26	6927.03	15.19	14.96	0.23	17.70
MKTF-05	8/16/2018	6942.22	6927.61	6927.42	14.80	14.61	0.19	17.75
MKTF-05	11/19/2018	6942.22	6927.60	6927.39	14.83	14.62	0.21	17.75
MKTF-05	2/19/2019	6942.22	6928.35	6928.25	13.97	13.87	0.10	17.75
MKTF-05	5/13/2019	6942.22	6929.27	6929.10	13.12	12.95	0.17	17.75
MKTF-05	8/30/2019	6942.22	6928.82	6928.62	13.60	13.40	0.20	17.75
MKTF-05	10/30/2019	6942.22	6928.32	6928.02	14.20	13.90	0.30	17.75
MKTF-05	11/12/2019	6942.22	6930.58	6925.49	16.73	11.64	5.09	17.75
MKTF-05	11/13/2019	6942.22	6931.26	6925.07	17.15	10.96	6.19	17.75
MKTF-05	11/14/2019	6942.22	6931.44	6925.05	17.17	10.78	6.39	17.75
MKTF-05	11/15/2019	6942.22	6931.68	6925.06	17.16	10.54	6.62	17.75
MKTF-05	11/19/2019	6942.22	6932.18	6925.04	17.18	10.04	7.14	17.75
MKTF-05	11/21/2019	6942.22	6932.25	6925.04	17.18	9.97	7.21	17.75
MKTF-05	12/2/2019	6942.22	6931.58	6925.05	17.17	10.64	6.53	17.75
MKTF-05	3/5/2020	6942.22	6928.64	6928.50	13.72	13.58	0.14	17.75
MKTF-05	6/25/2020	6942.22	6928.16	6927.42	14.80	14.06	0.74	17.75
MKTF-05	9/15/2020	6942.22	6928.57	6927.54	14.68	13.65	1.03	17.83
MKTF-05	11/10/2020	6942.22	6928.20	6927.32	14.90	14.02	0.88	17.83
MKTF-05	12/3/2020	6942.22	6928.10	6927.29	14.93	14.12	0.81	17.80
MKTF-06	1/13/2014	6946.81	6928.67	6928.50	18.31	18.14	0.17	23.77
MKTF-06	2/13/2014	6946.81	6928.47	6928.04	18.77	18.34	0.43	23.77
MKTF-06	3/11/2014	6946.81	6928.61	6927.86	18.95	18.20	0.75	23.77
MKTF-06	6/6/2014	6946.81	NA	6932.81	14.00	NA	NA	23.77
MKTF-06	9/15/2014	6946.81	6928.66	6927.91	18.90	18.15	0.75	23.77
MKTF-06	11/14/2014	6946.81	6928.23	NA	NA	18.58	NA	23.77
MKTF-06	3/16/2015	6946.81	6928.57	6926.87	19.94	18.24	1.70	23.77
MKTF-06	6/4/2015	6946.81	6928.25	6927.41	19.40	18.56	0.84	23.77
MKTF-06	8/15/2015	6946.81	6929.28	6928.42	18.39	17.53	0.86	23.77
MKTF-06	11/3/2015	6946.81	6928.77	6928.03	18.78	18.04	0.74	23.77
MKTF-06	3/16/2016	6946.81	6928.57	6926.87	19.94	18.24	1.70	23.77
MKTF-06	6/9/2016	6946.81	6928.79	6927.85	18.96	18.02	0.94	23.77
MKTF-06	9/11/2016	6946.81	6929.41	6928.33	18.48	17.40	1.08	23.77
MKTF-06	11/3/2016	6946.81	6928.77	6928.03	18.78	18.04	0.74	23.77
MKTF-06	3/15/2017	6946.81	6930.86	6930.76	16.05	15.95	0.10	23.77
MKTF-06	6/12/2017	6946.81	6930.21	6929.57	17.24	16.60	0.64	23.77
MKTF-06	9/26/2017	6946.81	6930.80	6930.09	16.72	16.01	0.71	23.77

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MKTF-06	11/28/2017	6946.81	6930.26	6929.11	17.70	16.55	1.15	23.77
MKTF-06	2/8/2018	6946.81	6929.67	6928.29	18.52	17.14	1.38	23.77
MKTF-06	4/25/2018	6946.81	6929.52	6928.20	18.61	17.29	1.32	23.72
MKTF-06	8/16/2018	6946.81	6929.98	6928.81	18.00	16.83	1.17	23.79
MKTF-06	11/19/2018	6946.81	6929.96	6928.80	18.01	16.85	1.16	23.77
MKTF-06	2/19/2019	6946.81	6931.02	6930.26	16.55	15.79	0.76	23.77
MKTF-06	5/13/2019	6946.81	6931.26	6930.42	16.39	15.55	0.84	23.77
MKTF-06	8/30/2019	6946.81	6930.99	6930.21	16.60	15.82	0.78	23.79
MKTF-06	10/30/2019	6946.81	6930.01	6928.90	17.91	16.80	1.11	23.77
MKTF-06	11/12/2019	6946.81	6930.29	6929.33	17.48	16.52	0.96	23.77
MKTF-06	11/13/2019	6946.81	6930.48	6929.63	17.18	16.33	0.85	23.77
MKTF-06	11/14/2019	6946.81	6930.39	6929.50	17.31	16.42	0.89	23.77
MKTF-06	11/15/2019	6946.81	6930.46	6929.61	17.20	16.35	0.85	23.77
MKTF-06	11/19/2019	6946.81	6930.73	6929.98	16.83	16.08	0.75	23.77
MKTF-06	11/21/2019	6946.81	6930.88	6929.57	17.24	15.93	1.31	23.77
MKTF-06	12/2/2019	6946.81	6932.06	6925.45	21.36	14.75	6.61	23.77
MKTF-06	3/5/2020	6946.81	6929.92	6928.21	18.60	16.89	1.71	23.77
MKTF-06	6/25/2020	6946.81	6932.76	6927.91	18.90	14.05	4.85	23.77
MKTF-06	9/15/2020	6946.81	6930.03	6928.10	18.71	16.78	1.93	23.79
MKTF-06	11/10/2020	6946.81	6929.61	6928.22	18.59	17.20	1.39	23.79
MKTF-06	12/3/2020	6946.81	6929.43	6928.32	18.49	17.38	1.11	23.79
MKTF-07	1/13/2014	6947.18	6935.27	6934.17	13.01	11.91	1.10	17.62
MKTF-07	2/13/2014	6947.18	6935.30	6934.18	13.00	11.88	1.12	17.62
MKTF-07	3/11/2014	6947.18	6935.48	6934.33	12.85	11.70	1.15	17.62
MKTF-07	6/6/2014	6947.18	NA	6934.08	13.10	NA	NA	17.62
MKTF-07	9/15/2014	6947.18	6935.18	6933.58	13.60	12.00	1.60	17.62
MKTF-07	11/14/2014	6947.18	6933.86	NA	NA	13.32	NA	17.62
MKTF-07	3/16/2015	6947.18	6934.08	6932.95	14.23	13.10	1.13	17.62
MKTF-07	6/4/2015	6947.18	6934.23	6932.58	14.60	12.95	1.65	17.62
MKTF-07	8/18/2015	6947.18	6934.47	6933.34	13.84	12.71	1.13	17.62
MKTF-07	11/3/2015	6947.18	6934.28	6932.30	14.88	12.90	1.98	17.62
MKTF-07	3/16/2016	6947.18	6934.08	6932.95	14.23	13.10	1.13	17.62
MKTF-07	6/9/2016	6947.18	6935.17	6932.58	14.60	12.01	2.59	17.62
MKTF-07	9/11/2016	6947.18	6934.98	6932.57	14.61	12.20	2.41	17.62
MKTF-07	11/3/2016	6947.18	6934.28	6932.30	14.88	12.90	1.98	17.62
MKTF-07	3/15/2017	6947.18	6936.55	6934.58	12.60	10.63	1.97	17.62
MKTF-07	6/12/2017	6947.18	6936.98	6935.68	11.50	10.20	1.30	17.62
MKTF-07	9/26/2017	6947.18	6937.38	6936.08	11.10	9.80	1.30	17.62
MKTF-07	11/28/2017	6947.18	6936.78	6935.38	11.80	10.40	1.40	17.62
MKTF-07	2/8/2018	6947.18	6935.85	6934.63	12.55	11.33	1.22	17.62
MKTF-07	4/25/2018	6947.18	6936.34	6935.16	12.02	10.84	1.18	17.58
MKTF-07	8/16/2018	6947.18	6935.76	6934.68	12.50	11.42	1.08	17.47
MKTF-07	11/27/2018	6947.18	6934.83	6933.66	13.52	12.35	1.17	17.62
MKTF-07	2/19/2019	6947.18	6936.79	6935.58	11.60	10.39	1.21	17.62
MKTF-07	5/13/2019	6947.18	6936.46	6936.36	10.82	10.72	0.10	17.62
MKTF-07	8/30/2019	6947.18	6936.00	6934.89	12.29	11.18	1.11	17.47
MKTF-07	10/30/2019	6947.18	6934.98	6933.79	13.39	12.20	1.19	17.62
MKTF-07	11/12/2019	6947.18	6935.15	6933.99	13.19	12.03	1.16	17.62
MKTF-07	11/13/2019	6947.18	6935.37	6934.29	12.89	11.81	1.08	17.62
MKTF-07	11/14/2019	6947.18	6935.20	6934.04	13.14	11.98	1.16	17.62
MKTF-07	11/15/2019	6947.18	6935.18	6934.02	13.16	12.00	1.16	17.62

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MKTF-07	11/19/2019	6947.18	6935.78	6933.01	14.17	11.40	2.77	17.62
MKTF-07	11/21/2019	6947.18	6936.35	6930.63	16.55	10.83	5.72	17.62
MKTF-07	12/2/2019	6947.18	6935.80	6930.06	17.12	11.38	5.74	17.62
MKTF-07	3/5/2020	6947.18	6934.68	6933.46	13.72	12.50	1.22	17.62
MKTF-07	6/25/2020	6947.18	6934.95	6933.42	13.76	12.23	1.53	17.62
MKTF-07	9/18/2020	6947.18	6935.76	6933.41	13.77	11.42	2.35	17.43
MKTF-07	11/10/2020	6947.18	6934.62	6933.42	13.76	12.56	1.20	17.43
MKTF-07	12/3/2020	6947.18	6934.25	6933.38	13.80	12.93	0.87	17.66
MKTF-08	1/13/2014	6947.09	6932.89	6932.47	14.62	14.20	0.42	21.98
MKTF-08	2/13/2014	6947.09	6932.84	6932.40	14.69	14.25	0.44	21.98
MKTF-08	3/11/2014	6947.09	6932.88	6932.44	14.65	14.21	0.44	21.98
MKTF-08	6/6/2014	6947.09	6932.79	6932.09	15.00	14.30	0.70	21.98
MKTF-08	9/15/2014	6947.09	6932.73	6932.04	15.05	14.36	0.69	21.98
MKTF-08	11/14/2014	6947.09	6932.21	NA	NA	14.88	NA	21.98
MKTF-08	3/16/2015	6947.09	6932.84	6932.59	14.50	14.25	0.25	21.98
MKTF-08	6/4/2015	6947.09	6932.74	6932.18	14.91	14.35	0.56	21.98
MKTF-08	8/18/2015	6947.09	6933.30	6932.34	14.75	13.79	0.96	21.98
MKTF-08	11/8/2015	6947.09	6933.25	6931.77	15.32	13.84	1.48	21.98
MKTF-08	3/16/2016	6947.09	6932.84	6932.59	14.50	14.25	0.25	21.98
MKTF-08	6/9/2016	6947.09	6933.61	6932.91	14.18	13.48	0.70	21.98
MKTF-08	9/11/2016	6947.09	6933.46	6932.80	14.29	13.63	0.66	21.98
MKTF-08	11/8/2016	6947.09	6933.25	6931.77	15.32	13.84	1.48	21.98
MKTF-08	3/15/2017	6947.09	6935.10	6934.49	12.60	11.99	0.61	21.98
MKTF-08	6/12/2017	6947.09	6935.11	6934.69	12.40	11.98	0.42	21.98
MKTF-08	9/26/2017	6947.09	6934.94	6934.49	12.60	12.15	0.45	21.98
MKTF-08	11/28/2017	6947.09	6934.41	6933.89	13.20	12.68	0.52	21.98
MKTF-08	2/8/2018	6947.09	6933.80	6933.46	13.63	13.29	0.34	21.98
MKTF-08	4/25/2018	6947.09	6934.09	6933.76	13.33	13.00	0.33	21.94
MKTF-08	8/16/2018	6947.09	6934.13	6933.74	13.35	12.96	0.39	21.98
MKTF-08	11/27/2018	6947.09	6933.68	6933.29	13.80	13.41	0.39	21.98
MKTF-08	2/19/2019	6947.09	6935.74	6935.09	12.00	11.35	0.65	21.98
MKTF-08	5/13/2019	6947.09	6935.14	6934.66	12.43	11.95	0.48	21.98
MKTF-08	8/30/2019	6947.09	6934.59	6934.19	12.90	12.50	0.40	21.98
MKTF-08	10/30/2019	6947.09	6933.55	6933.10	13.99	13.54	0.45	21.98
MKTF-08	11/21/2019	6947.09	6933.62	6933.24	13.85	13.47	0.38	21.98
MKTF-08	12/2/2019	6947.09	6933.37	6932.96	14.13	13.72	0.41	21.98
MKTF-08	3/5/2020	6947.09	6933.06	6932.72	14.37	14.03	0.34	21.98
MKTF-08	6/25/2020	6947.09	6933.09	6932.69	14.40	14.00	0.40	21.98
MKTF-08	9/18/2020	6947.09	6933.33	6932.94	14.15	13.76	0.39	22.00
MKTF-08	11/10/2020	6947.09	6932.86	6932.40	14.69	14.23	0.46	22.00
MKTF-08	12/3/2020	6947.09	6932.73	6932.33	14.76	14.36	0.40	22.01
MKTF-09	1/13/2014	6946.50	NA	6931.72	14.78	ND	NA	22.70
MKTF-09	2/13/2014	6946.50	NA	6931.68	14.82	ND	NA	22.70
MKTF-09	3/11/2014	6946.50	NA	6931.70	14.80	ND	NA	22.70
MKTF-09	6/5/2014	6946.50	NA	6931.60	14.90	ND	NA	22.70
MKTF-09	9/15/2014	6946.50	NA	6931.61	14.89	ND	NA	22.70
MKTF-09	11/14/2014	6946.50	NA	6931.29	15.21	ND	NA	22.70
MKTF-09	3/16/2015	6946.50	NA	6932.02	14.48	ND	NA	22.70
MKTF-09	6/4/2015	6946.50	NA	6931.82	14.68	ND	NA	22.70
MKTF-09	8/18/2015	6946.50	NA	6932.01	14.49	ND	NA	22.70
MKTF-09	11/3/2015	6946.50	NA	6932.21	14.29	ND	NA	22.70

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MKTF-09	2/29/2016	6946.50	NA	6932.35	14.15	ND	NA	22.70
MKTF-09	6/9/2016	6946.50	NA	6932.58	13.92	ND	NA	22.70
MKTF-09	9/11/2016	6946.50	NA	6932.30	14.20	ND	NA	22.70
MKTF-09	11/3/2016	6946.50	NA	6932.21	14.29	ND	NA	22.70
MKTF-09	3/15/2017	6946.50	NA	6933.86	12.64	ND	NA	22.70
MKTF-09	6/12/2017	6946.50	NA	6933.86	12.64	ND	NA	22.70
MKTF-09	9/28/2017	6946.50	NA	6933.81	12.69	ND	NA	22.70
MKTF-09	11/29/2017	6946.50	NA	6933.35	13.15	ND	NA	22.75
MKTF-09	2/14/2018	6946.50	NA	6932.74	13.76	ND	NA	22.74
MKTF-09	4/25/2018	6946.50	NA	6933.08	13.42	ND	NA	22.69
MKTF-09	8/16/2018	6946.50	NA	6933.01	13.49	ND	NA	22.74
MKTF-09	11/27/2018	6946.50	NA	6932.69	13.81	ND	NA	22.75
MKTF-09	3/25/2019	6946.50	NA	6935.40	11.10	ND	NA	22.70
MKTF-09	5/13/2019	6946.50	NA	6934.23	12.27	ND	NA	22.70
MKTF-09	8/28/2019	6946.50	NA	6933.22	13.28	ND	NA	22.74
MKTF-09	11/18/2019	6946.50	NA	6932.53	13.97	ND	NA	22.75
MKTF-09	3/2/2020	6946.50	NA	6932.27	14.23	ND	NA	22.76
MKTF-09	6/25/2020	6946.50	NA	6931.95	14.55	ND	NA	22.77
MKTF-09	9/18/2020	6946.50	6932.31	6932.30	14.20	14.19	0.01	22.41
MKTF-09	11/10/2020	6946.50	6931.89	6931.88	14.62	14.61	0.01	22.41
MKTF-09	12/3/2020	6946.50	6931.75	6931.74	14.76	14.75	0.01	22.78
MKTF-10	1/13/2014	6937.16	NA	6928.41	8.75	ND	NA	15.99
MKTF-10	2/13/2014	6937.16	NA	6928.27	8.89	ND	NA	15.99
MKTF-10	3/11/2014	6937.16	NA	6928.28	8.88	ND	NA	15.99
MKTF-10	6/5/2014	6937.16	NA	6928.26	8.90	ND	NA	15.99
MKTF-10	9/15/2014	6937.16	NA	6928.17	8.99	ND	NA	15.99
MKTF-10	11/14/2014	6937.16	NA	6927.11	10.05	ND	NA	15.99
MKTF-10	3/16/2015	6937.16	NA	6928.20	8.96	ND	NA	15.99
MKTF-10	6/4/2015	6937.16	NA	6928.34	8.82	ND	NA	15.99
MKTF-10	8/18/2015	6937.16	NA	6928.44	8.72	ND	NA	15.99
MKTF-10	11/3/2015	6937.16	NA	6928.32	8.84	ND	NA	15.99
MKTF-10	2/29/2016	6937.16	NA	6928.56	8.60	ND	NA	15.99
MKTF-10	6/9/2016	6937.16	NA	6928.96	8.20	ND	NA	15.99
MKTF-10	9/11/2016	6937.16	NA	6928.71	8.45	ND	NA	15.99
MKTF-10	11/3/2016	6937.16	NA	6928.32	8.84	ND	NA	15.99
MKTF-10	3/2/2017	6937.16	NA	6929.69	7.47	ND	NA	15.99
MKTF-10	6/7/2017	6937.16	NA	6930.14	7.02	ND	NA	15.99
MKTF-10	9/27/2017	6937.16	NA	6930.38	6.78	ND	NA	15.99
MKTF-10	11/29/2017	6937.16	NA	6930.16	7.00	ND	NA	15.99
MKTF-10	2/14/2018	6937.16	NA	6929.86	7.30	ND	NA	16.10
MKTF-10	4/25/2018	6937.16	NA	6930.11	7.05	ND	NA	16.05
MKTF-10	8/16/2018	6937.16	NA	6930.08	7.08	ND	NA	16.28
MKTF-10	11/19/2018	6937.16	NA	6929.91	7.25	ND	NA	15.99
MKTF-10	3/25/2019	6937.16	NA	6931.46	5.70	ND	NA	15.99
MKTF-10	5/13/2019	6937.16	NA	6930.93	6.23	ND	NA	15.99
MKTF-10	8/21/2019	6937.16	NA	6929.51	7.65	ND	NA	16.28
MKTF-10	10/30/2019	6937.16	NA	6929.88	7.28	ND	NA	15.99
MKTF-10	3/2/2020	6937.16	NA	6929.49	7.67	ND	NA	15.99
MKTF-10	6/25/2020	6937.16	NA	6930.09	7.07	ND	NA	15.99
MKTF-10	9/18/2020	6937.16	6929.64	6929.63	7.53	7.52	0.01	16.41
MKTF-10	11/10/2020	6937.16	NA	6929.37	7.79	ND	NA	16.41

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MKTF-10	12/3/2020	6937.16	NA	6929.36	7.80	ND	NA	16.50
MKTF-11	1/15/2014	6931.34	NA	6922.85	8.49	ND	NA	18.14
MKTF-11	2/13/2014	6931.34	NA	6922.70	8.64	ND	NA	18.14
MKTF-11	3/11/2014	6931.34	NA	6922.84	8.50	ND	NA	18.14
MKTF-11	6/5/2014	6931.34	NA	6922.14	9.20	ND	NA	18.14
MKTF-11	9/15/2014	6931.34	NA	6921.99	9.35	ND	NA	18.14
MKTF-11	11/13/2014	6931.34	NA	6921.79	9.55	ND	NA	18.14
MKTF-11	3/16/2015	6931.34	NA	6922.54	8.80	ND	NA	18.14
MKTF-11	6/4/2015	6931.34	NA	6922.34	9.00	ND	NA	18.14
MKTF-11	8/18/2015	6931.34	NA	6922.89	8.45	ND	NA	18.14
MKTF-11	11/3/2015	6931.34	NA	6922.71	8.63	ND	NA	18.14
MKTF-11	2/29/2016	6931.34	NA	6922.54	8.80	ND	NA	18.14
MKTF-11	6/9/2016	6931.34	NA	6922.68	8.66	ND	NA	18.14
MKTF-11	9/11/2016	6931.34	NA	6922.64	8.70	ND	NA	18.14
MKTF-11	11/3/2016	6931.34	NA	6922.71	8.63	ND	NA	18.14
MKTF-11	3/2/2017	6931.34	NA	6924.38	6.96	ND	NA	18.14
MKTF-11	6/7/2017	6931.34	NA	6923.95	7.39	ND	NA	18.14
MKTF-11	9/26/2017	6931.34	NA	6924.64	6.70	ND	NA	18.14
MKTF-11	11/29/2017	6931.34	NA	6923.34	8.00	ND	NA	18.14
MKTF-11	2/8/2018	6931.34	NA	6923.47	7.87	ND	NA	18.31
MKTF-11	4/25/2018	6931.34	NA	6923.49	7.85	ND	NA	18.39
MKTF-11	8/16/2018	6931.34	NA	6923.86	7.48	ND	NA	18.48
MKTF-11	11/19/2018	6931.34	NA	6924.14	7.20	ND	NA	18.14
MKTF-11	3/25/2019	6931.34	NA	6926.38	4.96	ND	NA	18.14
MKTF-11	5/13/2019	6931.34	NA	6926.10	5.24	ND	NA	18.14
MKTF-11	8/21/2019	6931.34	NA	6925.12	6.22	ND	NA	18.48
MKTF-11	10/30/2019	6931.34	NA	6924.28	7.06	ND	NA	18.14
MKTF-11	3/2/2020	6931.34	NA	6923.45	7.89	ND	NA	18.14
MKTF-11	6/26/2020	6931.34	6923.67	6923.66	7.68	7.67	0.01	18.14
MKTF-11	9/18/2020	6931.34	6923.75	6923.74	7.60	7.59	0.01	18.45
MKTF-11	11/10/2020	6931.34	NA	6923.73	7.61	ND	NA	18.45
MKTF-11	12/3/2020	6931.34	6923.45	6923.43	7.91	7.89	0.02	18.45
MKTF-12	1/13/2014	6942.11	6922.85	6922.58	19.53	19.26	0.27	25.60
MKTF-12	2/12/2014	6942.11	6922.66	6922.24	19.87	19.45	0.42	25.60
MKTF-12	3/11/2014	6942.11	6922.96	6922.68	19.43	19.15	0.28	25.60
MKTF-12	6/4/2014	6942.11	6922.37	6922.29	19.82	19.74	0.08	25.60
MKTF-12	9/15/2014	6942.11	6922.30	6921.11	21.00	19.81	1.19	25.60
MKTF-12	11/17/2014	6942.11	6921.91	6920.73	21.38	20.20	1.18	25.60
MKTF-12	3/12/2015	6942.11	6922.98	6921.17	20.94	19.13	1.81	25.60
MKTF-12	6/9/2015	6942.11	6922.64	6920.46	21.65	19.47	2.18	25.60
MKTF-12	8/18/2015	6942.11	6922.65	6922.12	19.99	19.46	0.53	25.60
MKTF-12	11/3/2015	6942.11	6922.45	6921.84	20.27	19.66	0.61	25.60
MKTF-12	3/12/2016	6942.11	6922.98	6921.17	20.94	19.13	1.81	25.60
MKTF-12	6/10/2016	6942.11	6923.88	6922.56	19.55	18.23	1.32	25.60
MKTF-12	9/10/2016	6942.11	6922.88	6922.56	19.55	19.23	0.32	25.60
MKTF-12	11/3/2016	6942.11	6922.45	6921.84	20.27	19.66	0.61	25.60
MKTF-12	3/15/2017	6942.11	6924.36	6924.30	17.81	17.75	0.06	25.60
MKTF-12	6/7/2017	6942.11	6923.51	6923.32	18.79	18.60	0.19	25.60
MKTF-12	10/3/2017	6942.11	6924.81	6924.68	17.43	17.30	0.13	25.60
MKTF-12	11/27/2017	6942.11	6923.68	6923.55	18.56	18.43	0.13	25.60
MKTF-12	2/7/2018	6942.11	6923.00	6922.83	19.28	19.11	0.17	25.60

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MKTF-12	4/26/2018	6942.11	6923.00	6922.88	19.23	19.11	0.12	25.58
MKTF-12	8/15/2018	6942.11	6923.10	6922.91	19.20	19.01	0.19	25.60
MKTF-12	11/27/2018	6942.11	6923.71	6923.57	18.54	18.40	0.14	25.60
MKTF-12	3/26/2019	6942.11	6925.46	6925.11	17.00	16.65	0.35	25.60
MKTF-12	5/9/2019	6942.11	6924.86	6924.76	17.35	17.25	0.10	25.60
MKTF-12	8/20/2019	6942.11	6924.19	6924.10	18.01	17.92	0.09	25.60
MKTF-12	10/28/2019	6942.11	6923.76	6923.64	18.47	18.35	0.12	25.60
MKTF-12	11/12/2019	6942.11	6923.97	6923.89	18.22	18.14	0.08	25.60
MKTF-12	11/13/2019	6942.11	6924.09	6923.99	18.12	18.02	0.10	25.60
MKTF-12	11/14/2019	6942.11	6924.00	6923.92	18.19	18.11	0.08	25.60
MKTF-12	11/15/2019	6942.11	6924.01	6923.93	18.18	18.10	0.08	25.60
MKTF-12	11/19/2019	6942.11	6924.11	6924.02	18.09	18.00	0.09	25.60
MKTF-12	11/21/2019	6942.11	6924.07	6923.91	18.20	18.04	0.16	25.60
MKTF-12	12/2/2019	6942.11	6924.41	6924.36	17.75	17.70	0.05	25.60
MKTF-12	2/27/2020	6942.11	6924.27	6924.19	17.92	17.84	0.08	25.60
MKTF-12	6/29/2020	6942.11	6922.98	6922.86	19.25	19.13	0.12	25.60
MKTF-12	9/18/2020	6942.11	6923.47	6923.46	18.65	18.64	0.01	25.82
MKTF-12	11/10/2020	6942.11	6924.14	6924.11	18.00	17.97	0.03	25.82
MKTF-12	12/3/2020	6942.11	6923.21	6923.05	19.06	18.90	0.16	25.89
MKTF-13	1/13/2014	6935.18	6922.38	6922.08	13.10	12.80	0.30	21.25
MKTF-13	2/12/2014	6935.18	6922.20	6921.86	13.32	12.98	0.34	21.25
MKTF-13	3/11/2014	6935.18	6922.51	6922.18	13.00	12.67	0.33	21.25
MKTF-13	6/4/2014	6935.18	6920.58	6919.93	15.25	14.60	0.65	21.25
MKTF-13	9/15/2014	6935.18	6920.57	6919.43	15.75	14.61	1.14	21.25
MKTF-13	11/17/2014	6935.18	6920.25	6918.85	16.33	14.93	1.40	21.25
MKTF-13	3/12/2015	6935.18	6921.43	6919.36	15.82	13.75	2.07	21.25
MKTF-13	6/9/2015	6935.18	6920.96	6919.31	15.87	14.22	1.65	21.25
MKTF-13	8/21/2015	6935.18	6921.24	6919.56	15.62	13.94	1.68	21.25
MKTF-13	11/3/2015	6935.18	6920.96	6919.63	15.55	14.22	1.33	21.25
MKTF-13	3/12/2016	6935.18	6921.43	6919.36	15.82	13.75	2.07	21.25
MKTF-13	6/10/2016	6935.18	6922.19	6920.99	14.19	12.99	1.20	21.25
MKTF-13	9/10/2016	6935.18	6921.30	6920.32	14.86	13.88	0.98	21.25
MKTF-13	11/3/2016	6935.18	6920.96	6919.63	15.55	14.22	1.33	21.25
MKTF-13	3/15/2017	6935.18	NA	6922.58	12.60	ND	NA	21.25
MKTF-13	6/7/2017	6935.18	6921.83	6921.77	13.41	13.35	0.06	21.25
MKTF-13	10/3/2017	6935.18	6923.27	6923.24	11.94	11.91	0.03	21.25
MKTF-13	11/27/2017	6935.18	6922.04	6922.03	13.15	13.14	0.01	21.25
MKTF-13	2/7/2018	6935.18	6921.41	6921.40	13.78	13.77	0.01	21.25
MKTF-13	4/26/2018	6935.18	NA	6921.43	13.75	ND	NA	21.66
MKTF-13	8/15/2018	6935.18	NA	6921.50	13.68	ND	NA	21.55
MKTF-13	11/27/2018	6935.18	NA	6922.46	12.72	ND	NA	21.25
MKTF-13	3/26/2019	6935.18	NA	6924.28	10.90	ND	NA	21.25
MKTF-13	5/9/2019	6935.18	NA	6923.58	11.60	ND	NA	21.25
MKTF-13	8/20/2019	6935.18	NA	6922.73	12.45	ND	NA	21.55
MKTF-13	10/28/2019	6935.18	NA	6922.23	12.95	ND	NA	21.25
MKTF-13	11/12/2019	6935.18	NA	6922.36	12.82	ND	NA	21.25
MKTF-13	11/13/2019	6935.18	NA	6922.43	12.75	ND	NA	21.25
MKTF-13	11/14/2019	6935.18	NA	6922.33	12.85	ND	NA	21.25
MKTF-13	11/15/2019	6935.18	NA	6922.38	12.80	ND	NA	21.25
MKTF-13	11/19/2019	6935.18	NA	6922.47	12.71	ND	NA	21.25
MKTF-13	11/21/2019	6935.18	NA	6922.43	12.75	ND	NA	21.25

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-13	12/2/2019	6935.18	NA	6922.78	12.40	ND	NA	21.25
MKTF-13	2/27/2020	6935.18	6924.05	6917.87	17.31	11.13	6.18	21.25
MKTF-13	6/29/2020	6935.18	6922.51	6916.97	18.21	12.67	5.54	21.25
MKTF-13	9/18/2020	6935.18	6922.63	6918.26	16.92	12.55	4.37	22.13
MKTF-13	11/10/2020	6935.18	6923.20	6918.82	16.36	11.98	4.38	22.13
MKTF-13	12/3/2020	6935.18	6922.34	6918.53	16.65	12.84	3.81	21.92
MKTF-14	1/13/2014	6928.02	6920.64	6919.03	8.99	7.38	1.61	17.46
MKTF-14	2/12/2014	6928.02	6920.42	6919.25	8.77	7.60	1.17	17.46
MKTF-14	3/11/2014	6928.02	6920.75	6919.60	8.42	7.27	1.15	17.46
MKTF-14	6/4/2014	6928.02	6920.11	6919.29	8.73	7.91	0.82	17.46
MKTF-14	9/15/2014	6928.02	6919.72	6919.27	8.75	8.30	0.45	17.46
MKTF-14	11/17/2014	6928.02	6919.45	6919.08	8.94	8.57	0.37	17.46
MKTF-14	3/12/2015	6928.02	6920.42	6919.87	8.15	7.60	0.55	17.46
MKTF-14	6/9/2015	6928.02	6920.02	6919.65	8.37	8.00	0.37	17.46
MKTF-14	8/21/2015	6928.02	6920.41	6919.99	8.03	7.61	0.42	17.46
MKTF-14	11/3/2015	6928.02	6920.31	6919.92	8.10	7.71	0.39	17.46
MKTF-14	3/12/2016	6928.02	6920.42	6919.87	8.15	7.60	0.55	17.46
MKTF-14	6/10/2016	6928.02	6920.89	6918.56	9.46	7.13	2.33	17.46
MKTF-14	9/10/2016	6928.02	6920.71	6919.02	9.00	7.31	1.69	17.46
MKTF-14	11/3/2016	6928.02	6920.31	6919.92	8.10	7.71	0.39	17.46
MKTF-14	3/8/2017	6928.02	6922.25	6921.27	6.75	5.77	0.98	17.46
MKTF-14	6/7/2017	6928.02	6921.34	6920.50	7.52	6.68	0.84	17.46
MKTF-14	10/3/2017	6928.02	6922.32	6921.91	6.11	5.70	0.41	17.46
MKTF-14	11/27/2017	6928.02	6921.46	6921.09	6.93	6.56	0.37	17.46
MKTF-14	2/7/2018	6928.02	6921.04	6920.63	7.39	6.98	0.41	17.46
MKTF-14	4/26/2018	6928.02	6921.01	6920.63	7.39	7.01	0.38	17.43
MKTF-14	8/15/2018	6928.02	6921.07	6920.72	7.30	6.95	0.35	17.45
MKTF-14	11/27/2018	6928.02	6921.76	6921.37	6.65	6.26	0.39	17.46
MKTF-14	3/25/2019	6928.02	6924.13	6923.77	4.25	3.89	0.36	17.46
MKTF-14	5/9/2019	6928.02	6923.37	6922.98	5.04	4.65	0.39	17.46
MKTF-14	8/20/2019	6928.02	6922.38	6922.10	5.92	5.64	0.28	17.45
MKTF-14	10/28/2019	6928.02	6922.00	6921.63	6.39	6.02	0.37	17.46
MKTF-14	2/27/2020	6928.02	6922.67	6922.37	5.65	5.35	0.30	17.46
MKTF-14	6/29/2020	6928.02	6921.64	6919.44	8.58	6.38	2.20	17.46
MKTF-14	9/18/2020	6928.02	6921.84	6919.86	8.16	6.18	1.98	17.32
MKTF-14	11/10/2020	6928.02	6922.04	6921.74	6.28	5.98	0.30	17.32
MKTF-14	12/3/2020	6928.02	6921.23	6920.96	7.06	6.79	0.27	17.55
MKTF-15	1/13/2014	6943.48	NA	6929.60	13.88	ND	NA	19.48
MKTF-15	2/13/2014	6943.48	NA	6929.60	13.88	ND	NA	19.48
MKTF-15	3/11/2014	6943.48	NA	6929.62	13.86	ND	NA	19.48
MKTF-15	6/5/2014	6943.48	NA	6929.67	13.81	ND	NA	19.48
MKTF-15	9/15/2014	6943.48	NA	6929.77	13.71	ND	NA	19.48
MKTF-15	11/14/2014	6943.48	6929.98	6928.93	14.55	13.50	1.05	19.48
MKTF-15	3/16/2015	6943.48	6930.31	6929.56	13.92	13.17	0.75	19.48
MKTF-15	6/4/2015	6943.48	6930.28	6929.70	13.78	13.20	0.58	19.48
MKTF-15	8/18/2015	6943.48	6930.39	6930.14	13.34	13.09	0.25	19.48
MKTF-15	11/3/2015	6943.48	6930.58	6929.93	13.55	12.90	0.65	19.48
MKTF-15	3/16/2016	6943.48	6930.31	6929.56	13.92	13.17	0.75	19.48
MKTF-15	6/9/2016	6943.48	6930.88	6930.66	12.82	12.60	0.22	19.48
MKTF-15	9/11/2016	6943.48	NA	6930.48	13.00	ND	NA	19.48
MKTF-15	11/3/2016	6943.48	6930.58	6929.93	13.55	12.90	0.65	19.48

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-15	3/2/2017	6943.48	NA	6931.33	12.15	ND	NA	19.48
MKTF-15	6/7/2017	6943.48	NA	6931.55	11.93	ND	NA	19.48
MKTF-15	9/26/2017	6943.48	6931.48	6931.38	12.10	12.00	0.10	19.48
MKTF-15	11/29/2017	6943.48	NA	6931.35	12.13	ND	NA	19.48
MKTF-15	2/8/2018	6943.48	6931.08	6931.01	12.47	12.40	0.07	19.48
MKTF-15	4/25/2018	6943.48	NA	6931.28	12.20	ND	NA	19.40
MKTF-15	8/16/2018	6943.48	NA	6931.08	12.40	ND	NA	19.50
MKTF-15	11/19/2018	6943.48	6930.91	6930.78	12.70	12.57	0.13	19.48
MKTF-15	3/25/2019	6943.48	6932.50	6932.48	11.00	10.98	0.02	19.48
MKTF-15	5/13/2019	6943.48	NA	6931.89	11.59	ND	NA	19.48
MKTF-15	8/21/2019	6943.48	6931.46	6931.45	12.03	12.02	0.01	19.50
MKTF-15	10/30/2019	6943.48	6930.83	6930.78	12.70	12.65	0.05	19.48
MKTF-15	2/3/2020	6943.48	6930.46	6930.37	13.11	13.02	0.09	19.48
MKTF-15	6/26/2020	6943.48	6930.37	6930.31	13.17	13.11	0.06	19.48
MKTF-15	9/18/2020	6943.48	6930.48	6930.45	13.03	13.00	0.03	19.18
MKTF-15	11/10/2020	6943.48	6930.09	6929.88	13.60	13.39	0.21	19.52
MKTF-16	1/13/2014	6950.58	NA	6941.13	9.45	ND	NA	14.10
MKTF-16	2/13/2014	6950.58	NA	6940.95	9.63	ND	NA	14.10
MKTF-16	3/11/2014	6950.58	NA	6940.92	9.66	ND	NA	14.10
MKTF-16	6/5/2014	6950.58	NA	6940.06	10.52	ND	NA	14.10
MKTF-16	9/15/2014	6950.58	NA	6939.98	10.60	ND	NA	14.10
MKTF-16	11/18/2014	6950.58	NA	6938.92	11.66	ND	NA	14.10
MKTF-16	3/16/2015	6950.58	NA	6939.65	10.93	ND	NA	14.10
MKTF-16	6/8/2015	6950.58	NA	6941.72	8.86	ND	NA	14.10
MKTF-16	8/23/2015	6950.58	NA	6940.79	9.79	ND	NA	14.10
MKTF-16	11/3/2015	6950.58	NA	6941.09	9.49	ND	NA	14.10
MKTF-16	2/29/2016	6950.58	NA	6940.68	9.90	ND	NA	14.10
MKTF-16	6/8/2016	6950.58	NA	6941.00	9.58	ND	NA	14.10
MKTF-16	9/11/2016	6950.58	NA	6940.93	9.65	ND	NA	14.10
MKTF-16	11/3/2016	6950.58	NA	6941.09	9.49	ND	NA	14.10
MKTF-16	3/14/2017	6950.58	NA	6943.13	7.45	ND	NA	14.10
MKTF-16	6/7/2017	6950.58	NA	6942.92	7.66	ND	NA	14.10
MKTF-16	9/26/2017	6950.58	NA	6942.58	8.00	ND	NA	14.10
MKTF-16	11/28/2017	6950.58	NA	6942.36	8.22	ND	NA	14.10
MKTF-16	2/14/2018	6950.58	NA	6941.78	8.80	ND	NA	14.10
MKTF-16	4/25/2018	6950.58	NA	6942.23	8.35	ND	NA	13.96
MKTF-16	8/16/2018	6950.58	NA	6942.03	8.55	ND	NA	14.08
MKTF-16	11/29/2018	6950.58	NA	6941.04	9.54	ND	NA	14.10
MKTF-16	2/20/2019	6950.58	NA	6943.53	7.05	ND	NA	14.10
MKTF-16	5/13/2019	6950.58	NA	6942.23	8.35	ND	NA	14.10
MKTF-16	8/21/2019	6950.58	NA	6941.36	9.22	ND	NA	14.08
MKTF-16	10/30/2019	6950.58	NA	6940.69	9.89	ND	NA	14.10
MKTF-16	2/5/2020	6950.58	NA	6940.90	9.68	ND	NA	14.10
MKTF-16	6/26/2020	6950.58	NA	6941.04	9.54	ND	NA	14.10
MKTF-16	9/18/2020	6950.58	6941.40	6941.39	9.19	9.18	0.01	10.92
MKTF-16	11/10/2020	6950.58	NA	6943.38	7.20	ND	NA	10.92
MKTF-16	12/8/2020	6950.58	NA	6940.88	9.70	ND	NA	10.95
MKTF-17	1/13/2014	6945.76	NA	6936.95	8.81	ND	NA	24.11
MKTF-17	2/13/2014	6945.76	NA	6935.95	9.81	ND	NA	24.11
MKTF-17	3/11/2014	6945.76	NA	6935.76	10.00	ND	NA	24.11
MKTF-17	6/6/2014	6945.76	NA	6934.48	11.28	ND	NA	24.11

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-17	9/15/2014	6945.76	NA	6934.49	11.27	ND	NA	24.11
MKTF-17	11/18/2014	6945.76	NA	6933.01	12.75	ND	NA	24.11
MKTF-17	3/12/2015	6945.76	NA	6932.95	12.81	ND	NA	24.11
MKTF-17	6/8/2015	6945.76	NA	6932.36	13.40	ND	NA	24.11
MKTF-17	8/18/2015	6945.76	NA	6933.78	11.98	ND	NA	24.11
MKTF-17	11/3/2015	6945.76	NA	6933.42	12.34	ND	NA	24.11
MKTF-17	2/25/2016	6945.76	NA	6933.94	11.82	ND	NA	24.11
MKTF-17	6/10/2016	6945.76	NA	6934.46	11.30	ND	NA	24.11
MKTF-17	9/12/2016	6945.76	NA	6933.36	12.40	ND	NA	24.11
MKTF-17	11/3/2016	6945.76	NA	6933.42	12.34	ND	NA	24.11
MKTF-17	3/8/2017	6945.76	NA	6937.56	8.20	ND	NA	24.11
MKTF-17	6/14/2017	6945.76	NA	6935.78	9.98	ND	NA	24.11
MKTF-17	9/26/2017	6945.76	NA	6936.43	9.33	ND	NA	24.11
MKTF-17	11/30/2017	6945.76	NA	6932.08	13.68	ND	NA	24.65
MKTF-17	2/15/2018	6945.76	NA	6934.11	11.65	ND	NA	24.68
MKTF-17	4/26/2018	6945.76	NA	6933.48	12.28	ND	NA	24.55
MKTF-17	8/15/2018	6945.76	NA	6933.26	12.50	ND	NA	24.68
MKTF-17	11/27/2018	6945.76	NA	6932.11	13.65	ND	NA	24.65
MKTF-17	3/25/2019	6945.76	NA	6935.06	10.70	ND	NA	24.11
MKTF-17	5/9/2019	6945.76	NA	6931.71	14.05	ND	NA	24.11
MKTF-17	8/19/2019	6945.76	NA	6934.97	10.79	ND	NA	24.68
MKTF-17	10/28/2019	6945.76	NA	6936.76	9.00	ND	NA	24.65
MKTF-17	10/29/2019	6945.76	NA	6930.56	15.20	ND	NA	24.65
MKTF-17	11/12/2019	6945.76	NA	6933.90	11.86	ND	NA	24.65
MKTF-17	11/19/2019	6945.76	6933.41	6931.81	13.95	12.35	1.60	24.65
MKTF-17	11/21/2019	6945.76	6933.34	6930.46	15.30	12.42	2.88	24.65
MKTF-17	12/2/2019	6945.76	6932.59	6927.71	18.05	13.17	4.88	24.65
MKTF-17	2/3/2020	6945.76	6934.32	6928.91	16.85	11.44	5.41	24.11
MKTF-17	6/29/2020	6945.76	6935.57	6930.26	15.50	10.19	5.31	24.11
MKTF-17	9/14/2020	6945.76	6935.76	6930.39	15.37	10.00	5.37	24.67
MKTF-17	11/10/2020	6945.76	6934.37	6934.17	11.59	11.39	0.20	24.67
MKTF-17	12/4/2020	6945.76	6934.48	6934.29	11.47	11.28	0.19	24.66
MKTF-18	1/13/2014	6950.65	NA	6942.32	8.33	ND	NA	25.38
MKTF-18	2/13/2014	6950.65	NA	6942.32	8.33	ND	NA	25.38
MKTF-18	3/11/2014	6950.65	NA	6942.56	8.09	ND	NA	25.38
MKTF-18	6/6/2014	6950.65	NA	6942.20	8.45	ND	NA	25.38
MKTF-18	9/15/2014	6950.65	NA	6941.84	8.81	ND	NA	25.38
MKTF-18	11/18/2014	6950.65	NA	6941.19	9.46	ND	NA	25.38
MKTF-18	3/17/2015	6950.65	NA	6941.73	8.92	ND	NA	25.38
MKTF-18	6/8/2015	6950.65	NA	6941.79	8.86	ND	NA	25.38
MKTF-18	8/18/2015	6950.65	NA	6941.82	8.83	ND	NA	25.38
MKTF-18	11/3/2015	6950.65	NA	6942.13	8.52	ND	NA	25.38
MKTF-18	2/26/2016	6950.65	NA	6942.31	8.34	ND	NA	25.38
MKTF-18	6/10/2016	6950.65	NA	6938.80	11.85	ND	NA	25.38
MKTF-18	9/12/2016	6950.65	NA	6942.90	7.75	ND	NA	25.38
MKTF-18	11/3/2016	6950.65	NA	6942.13	8.52	ND	NA	25.38
MKTF-18	3/1/2017	6950.65	NA	6942.84	7.81	ND	NA	25.38
MKTF-18	6/14/2017	6950.65	NA	6944.35	6.30	ND	NA	25.38
MKTF-18	9/27/2017	6950.65	6944.30	6944.28	6.37	6.35	0.02	25.38
MKTF-18	11/30/2017	6950.65	6944.36	6944.35	6.30	6.29	0.01	25.38
MKTF-18	2/15/2018	6950.65	NA	6944.18	6.47	ND	NA	26.80

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MKTF-18	4/26/2018	6950.65	NA	6942.43	8.22	ND	NA	26.70
MKTF-18	8/16/2018	6950.65	NA	6943.53	7.12	ND	NA	27.45
MKTF-18	11/27/2018	6950.65	NA	6942.71	7.94	ND	NA	25.38
MKTF-18	3/25/2019	6950.65	NA	6943.33	7.32	ND	NA	25.38
MKTF-18	5/16/2019	6950.65	NA	6943.11	7.54	ND	NA	25.38
MKTF-18	8/19/2019	6950.65	6942.94	6942.93	7.72	7.71	0.01	27.45
MKTF-18	10/28/2019	6950.65	NA	6942.86	7.79	ND	NA	25.38
MKTF-18	10/29/2019	6950.65	NA	6942.35	8.30	ND	NA	25.38
MKTF-18	11/12/2019	6950.65	NA	6942.46	8.19	ND	NA	25.38
MKTF-18	2/5/2020	6950.65	NA	6941.55	9.10	ND	NA	25.38
MKTF-18	6/30/2020	6950.65	NA	6941.67	8.98	ND	NA	25.38
MKTF-18	9/18/2020	6950.65	6942.16	6942.15	8.50	8.49	0.01	21.73
MKTF-18	11/10/2020	6950.65	NA	6941.91	8.74	ND	NA	21.73
MKTF-18	12/4/2020	6950.65	NA	6941.85	8.80	ND	NA	25.50
MKTF-19	6/4/2014	6944.67	NA	6932.76	11.91	ND	NA	17.47
MKTF-19	9/24/2014	6944.67	NA	6932.20	12.47	ND	NA	17.47
MKTF-19	11/18/2014	6944.67	NA	6930.91	13.76	ND	NA	17.47
MKTF-19	3/12/2015	6944.67	NA	6931.72	12.95	ND	NA	17.47
MKTF-19	6/8/2015	6944.67	NA	6931.91	12.76	ND	NA	17.47
MKTF-19	8/18/2015	6944.67	NA	6932.07	12.60	ND	NA	17.47
MKTF-19	11/3/2015	6944.67	NA	6931.83	12.84	ND	NA	17.47
MKTF-19	2/25/2016	6944.67	NA	6932.05	12.62	ND	NA	17.47
MKTF-19	6/10/2016	6944.67	NA	6932.77	11.90	ND	NA	17.47
MKTF-19	9/12/2016	6944.67	NA	6933.42	11.25	ND	NA	17.47
MKTF-19	11/3/2016	6944.67	NA	6931.83	12.84	ND	NA	17.47
MKTF-19	3/8/2017	6944.67	NA	6934.85	9.82	ND	NA	17.47
MKTF-19	6/14/2017	6944.67	NA	6934.09	10.58	ND	NA	17.47
MKTF-19	9/26/2017	6944.67	NA	6933.67	11.00	ND	NA	17.47
MKTF-19	11/30/2017	6944.67	NA	6932.97	11.70	ND	NA	18.20
MKTF-19	2/15/2018	6944.67	NA	6932.67	12.00	ND	NA	18.45
MKTF-19	4/26/2018	6944.67	NA	6932.62	12.05	ND	NA	18.19
MKTF-19	8/15/2018	6944.67	NA	6932.47	12.20	ND	NA	19.30
MKTF-19	11/27/2018	6944.67	NA	6932.30	12.37	ND	NA	18.20
MKTF-19	3/25/2019	6944.67	NA	6933.27	11.40	ND	NA	17.47
MKTF-19	5/9/2019	6944.67	NA	6933.36	11.31	ND	NA	17.47
MKTF-19	8/19/2019	6944.67	NA	6933.61	11.06	ND	NA	19.30
MKTF-19	10/28/2019	6944.67	NA	6933.76	10.91	ND	NA	18.20
MKTF-19	10/29/2019	6944.67	NA	6928.91	15.76	ND	NA	18.20
MKTF-19	11/12/2019	6944.67	NA	6933.82	10.85	ND	NA	18.20
MKTF-19	11/19/2019	6944.67	NA	6933.77	10.90	ND	NA	18.20
MKTF-19	11/21/2019	6944.67	NA	6933.62	11.05	ND	NA	18.20
MKTF-19	12/2/2019	6944.67	6933.04	6932.17	12.50	11.63	0.87	18.20
MKTF-19	2/3/2020	6944.67	6933.32	6932.27	12.40	11.35	1.05	17.47
MKTF-19	6/29/2020	6944.67	6932.59	6931.38	13.29	12.08	1.21	17.47
MKTF-19	9/14/2020	6944.67	6932.72	6932.70	11.97	11.95	0.02	19.24
MKTF-19	11/10/2020	6944.67	6932.45	6931.12	13.55	12.22	1.33	19.24
MKTF-19	12/4/2020	6944.67	6932.49	6931.25	13.42	12.18	1.24	19.38
MKTF-20	6/4/2014	6951.78	NA	6943.87	7.91	ND	NA	9.89
MKTF-20	9/23/2014	6951.78	NA	6943.40	8.38	ND	NA	9.89
MKTF-20	11/18/2014	6951.78	NA	6943.38	8.40	ND	NA	9.89
MKTF-20	3/16/2015	6951.78	NA	6944.52	7.26	ND	NA	9.89

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-20	6/8/2015	6951.78	NA	6943.89	7.89	ND	NA	9.89
MKTF-20	8/23/2015	6951.78	NA	6943.99	7.79	ND	NA	9.89
MKTF-20	11/9/2015	6951.78	NA	6944.00	7.78	ND	NA	9.89
MKTF-20	2/29/2016	6951.78	NA	6943.97	7.81	ND	NA	9.89
MKTF-20	6/8/2016	6951.78	NA	6944.55	7.23	ND	NA	9.89
MKTF-20	9/11/2016	6951.78	NA	6944.13	7.65	ND	NA	9.89
MKTF-20	11/9/2016	6951.78	NA	6944.00	7.78	ND	NA	9.89
MKTF-20	3/14/2017	6951.78	NA	6946.08	5.70	ND	NA	9.89
MKTF-20	6/12/2017	6951.78	NA	6946.21	5.57	ND	NA	9.89
MKTF-20	9/26/2017	6951.78	NA	6945.55	6.23	ND	NA	9.89
MKTF-20	11/28/2017	6951.78	NA	6945.25	6.53	ND	NA	9.58
MKTF-20	2/14/2018	6951.78	NA	6944.33	7.45	ND	NA	9.55
MKTF-20	4/25/2018	6951.78	NA	6944.88	6.90	ND	NA	9.50
MKTF-20	8/16/2018	6951.78	NA	6944.58	7.20	ND	NA	9.56
MKTF-20	11/29/2018	6951.78	NA	6944.26	7.52	ND	NA	9.58
MKTF-20	2/20/2019	6951.78	NA	6945.49	6.29	ND	NA	8.83
MKTF-20	5/13/2019	6951.78	NA	6944.64	7.14	ND	NA	8.83
MKTF-20	8/20/2019	6951.78	NA	6943.75	8.03	ND	NA	8.83
MKTF-20	11/4/2019	6951.78	NA	6944.10	7.68	ND	NA	8.83
MKTF-20	2/5/2020	6951.78	NA	6942.76	9.02	ND	NA	8.83
MKTF-20	6/26/2020	6951.78	NA	6943.11	8.67	ND	NA	8.83
MKTF-20	9/15/2020	6951.78	6943.24	6942.43	9.35	8.54	0.81	9.62
MKTF-20	11/10/2020	6951.78	6943.68	6942.88	8.90	8.10	0.80	9.62
MKTF-20	12/8/2020	6951.78	6943.02	6942.83	8.95	8.76	0.19	9.60
MKTF-21	6/4/2014	6952.57	NA	6944.89	7.68	ND	NA	9.89
MKTF-21	9/23/2014	6952.57	NA	6944.18	8.39	ND	NA	9.89
MKTF-21	11/18/2014	6952.57	NA	6944.57	8.00	ND	NA	9.89
MKTF-21	3/16/2015	6952.57	NA	6944.95	7.62	ND	NA	9.89
MKTF-21	6/10/2015	6952.57	NA	6944.61	7.96	ND	NA	9.89
MKTF-21	8/23/2015	6952.57	NA	6944.95	7.62	ND	NA	9.89
MKTF-21	11/9/2015	6952.57	NA	6945.11	7.46	ND	NA	9.89
MKTF-21	2/29/2016	6952.57	NA	6945.33	7.24	ND	NA	9.89
MKTF-21	6/8/2016	6952.57	NA	6945.59	6.98	ND	NA	9.89
MKTF-21	9/11/2016	6952.57	NA	6944.95	7.62	ND	NA	9.89
MKTF-21	11/9/2016	6952.57	NA	6945.11	7.46	ND	NA	9.89
MKTF-21	3/14/2017	6952.57	NA	6947.07	5.50	ND	NA	9.89
MKTF-21	6/21/2017	6952.57	NA	6947.48	5.09	ND	NA	9.89
MKTF-21	9/26/2017	6952.57	NA	6946.88	5.69	ND	NA	9.89
MKTF-21	11/28/2017	6952.57	NA	6946.32	6.25	ND	NA	8.81
MKTF-21	2/14/2018	6952.57	NA	6945.69	6.88	ND	NA	8.80
MKTF-21	4/25/2018	6952.57	NA	6946.25	6.32	ND	NA	8.75
MKTF-21	8/16/2018	6952.57	NA	6946.52	6.05	ND	NA	8.80
MKTF-21	11/29/2018	6952.57	NA	6945.05	7.52	ND	NA	8.81
MKTF-21	2/20/2019	6952.57	NA	6946.95	5.62	ND	NA	8.81
MKTF-21	5/13/2019	6952.57	NA	6945.87	6.70	ND	NA	8.81
MKTF-21	8/20/2019	6952.57	NA	6945.35	7.22	ND	NA	8.81
MKTF-21	10/30/2019	6952.57	NA	6944.25	8.32	ND	NA	8.81
MKTF-21	2/5/2020	6952.57	NA	6944.32	8.25	ND	NA	8.83
MKTF-21	6/26/2020	6952.57	6944.40	6944.37	8.20	8.17	0.03	8.83
MKTF-21	9/15/2020	6952.57	6945.49	6945.48	7.09	7.08	0.01	8.84
MKTF-21	11/10/2020	6952.57	NA	6946.16	6.41	ND	NA	8.84

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-21	12/4/2020	6952.57	6944.53	6944.52	8.05	8.04	0.01	8.80
MKTF-22	6/4/2014	6942.31	NA	6916.06	26.25	ND	NA	35.25
MKTF-22	11/17/2014	6942.31	NA	6915.64	26.67	ND	NA	35.25
MKTF-22	3/12/2015	6942.31	NA	6916.24	26.07	ND	NA	35.25
MKTF-22	6/9/2015	6942.31	NA	6916.13	26.18	ND	NA	35.25
MKTF-22	8/20/2015	6942.31	NA	6916.11	26.20	ND	NA	36.25
MKTF-22	11/9/2015	6942.31	NA	6916.26	26.05	ND	NA	35.25
MKTF-22	2/25/2016	6942.31	NA	6916.18	26.13	ND	NA	35.25
MKTF-22	6/10/2016	6942.31	NA	6916.25	26.06	ND	NA	35.25
MKTF-22	9/10/2016	6942.31	NA	6916.18	26.13	ND	NA	36.25
MKTF-22	11/9/2016	6942.31	NA	6916.26	26.05	ND	NA	35.25
MKTF-22	3/8/2017	6942.31	NA	6917.21	25.10	ND	NA	35.25
MKTF-22	6/7/2017	6942.31	NA	6917.00	25.31	ND	NA	35.25
MKTF-22	10/3/2017	6942.31	NA	6917.12	25.19	ND	NA	35.25
MKTF-22	11/27/2017	6942.31	NA	6917.13	25.18	ND	NA	35.60
MKTF-22	2/7/2018	6942.31	NA	6916.81	25.50	ND	NA	35.60
MKTF-22	4/26/2018	6942.31	NA	6916.91	25.40	ND	NA	35.51
MKTF-22	8/15/2018	6942.31	NA	6916.51	25.80	ND	NA	35.62
MKTF-22	11/27/2018	6942.31	NA	6916.74	25.57	ND	NA	35.60
MKTF-22	3/25/2019	6942.31	NA	6917.88	24.43	ND	NA	35.25
MKTF-22	5/9/2019	6942.31	NA	6917.67	24.64	ND	NA	35.25
MKTF-22	8/20/2019	6942.31	NA	6917.36	24.95	ND	NA	35.62
MKTF-22	10/24/2019	6942.31	NA	6916.91	25.40	ND	NA	35.60
MKTF-22	2/27/2020	6942.31	6917.83	6916.78	25.53	24.48	1.05	35.25
MKTF-22	6/29/2020	6942.31	6917.74	6914.60	27.71	24.57	3.14	35.25
MKTF-22	9/14/2020	6942.31	6917.33	6914.63	27.68	24.98	2.70	35.09
MKTF-22	11/10/2020	6942.31	6917.37	6915.02	27.29	24.94	2.35	35.09
MKTF-22	12/4/2020	6942.31	6917.21	6914.76	27.55	25.10	2.45	35.09
MKTF-23	6/4/2014	6929.98	NA	6915.13	14.85	ND	NA	20.36
MKTF-23	9/23/2014	6929.98	NA	6914.59	15.39	ND	NA	20.36
MKTF-23	11/17/2014	6929.98	NA	6914.71	15.27	ND	NA	20.36
MKTF-23	3/12/2015	6929.98	NA	6915.19	14.79	ND	NA	20.36
MKTF-23	6/9/2015	6929.98	NA	6916.16	13.82	ND	NA	20.36
MKTF-23	8/21/2015	6929.98	NA	6915.22	14.76	ND	NA	21.36
MKTF-23	11/9/2015	6929.98	NA	6915.37	14.61	ND	NA	20.36
MKTF-23	2/25/2016	6929.98	NA	6915.31	14.67	ND	NA	20.36
MKTF-23	6/10/2016	6929.98	NA	6915.34	14.64	ND	NA	20.36
MKTF-23	9/10/2016	6929.98	6914.94	6914.83	15.15	15.04	0.11	21.36
MKTF-23	11/9/2016	6929.98	NA	6915.37	14.61	ND	NA	20.36
MKTF-23	3/8/2017	6929.98	NA	6915.78	14.20	ND	NA	20.36
MKTF-23	6/7/2017	6929.98	6915.78	6915.08	14.90	14.20	0.70	20.36
MKTF-23	10/3/2017	6929.98	6915.79	6915.73	14.25	14.19	0.06	20.36
MKTF-23	11/27/2017	6929.98	6916.05	6916.04	13.94	13.93	0.01	20.36
MKTF-23	2/7/2018	6929.98	6915.87	6915.78	14.20	14.11	0.09	20.36
MKTF-23	4/26/2018	6929.98	6915.91	6915.89	14.09	14.07	0.02	20.27
MKTF-23	8/15/2018	6929.98	6914.50	6914.40	15.58	15.48	0.10	20.38
MKTF-23	11/27/2018	6929.98	6915.78	6915.74	14.24	14.20	0.04	20.36
MKTF-23	3/25/2019	6929.98	NA	6917.43	12.55	ND	NA	20.36
MKTF-23	5/9/2019	6929.98	6917.03	6916.96	13.02	12.95	0.07	20.36
MKTF-23	8/20/2019	6929.98	6916.51	6916.48	13.50	13.47	0.03	20.38
MKTF-23	10/28/2019	6929.98	NA	6916.03	13.95	ND	NA	20.36

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MKTF-23	2/27/2020	6929.98	NA	6916.56	13.42	ND	NA	20.36
MKTF-23	6/29/2020	6929.98	NA	6916.73	13.25	ND	NA	20.36
MKTF-23	9/19/2020	6929.98	6914.56	6914.54	15.44	15.42	0.02	20.02
MKTF-23	11/10/2020	6929.98	NA	6915.75	14.23	ND	NA	20.02
MKTF-23	12/4/2020	6929.98	6915.83	6915.82	14.16	14.15	0.01	20.39
MKTF-24	6/4/2014	6928.72	NA	6907.22	21.50	ND	NA	30.47
MKTF-24	9/23/2014	6928.72	NA	6906.15	22.57	ND	NA	30.47
MKTF-24	11/14/2014	6928.72	NA	6906.51	22.21	ND	NA	30.47
MKTF-24	3/11/2015	6928.72	NA	6907.18	21.54	ND	NA	30.47
MKTF-24	6/10/2015	6928.72	NA	6907.07	21.65	ND	NA	30.47
MKTF-24	8/20/2015	6928.72	NA	6907.19	21.53	ND	NA	31.47
MKTF-24	11/4/2015	6928.72	NA	6907.00	21.72	ND	NA	30.47
MKTF-24	2/22/2016	6928.72	NA	6907.38	21.34	ND	NA	30.47
MKTF-24	6/8/2016	6928.72	NA	6907.49	21.23	ND	NA	30.47
MKTF-24	9/7/2016	6928.72	NA	6906.03	22.69	ND	NA	31.47
MKTF-24	11/4/2016	6928.72	NA	6907.00	21.72	ND	NA	30.47
MKTF-24	3/6/2017	6928.72	NA	6908.11	20.61	ND	NA	30.47
MKTF-24	6/5/2017	6928.72	NA	6907.65	21.07	ND	NA	30.47
MKTF-24	10/3/2017	6928.72	NA	6907.20	21.52	ND	NA	30.47
MKTF-24	11/20/2017	6928.72	NA	6907.19	21.53	ND	NA	30.82
MKTF-24	2/6/2018	6928.72	NA	6907.12	21.60	ND	NA	30.83
MKTF-24	4/25/2018	6928.72	NA	6906.96	21.76	ND	NA	30.78
MKTF-24	8/15/2018	6928.72	NA	6906.07	22.65	ND	NA	30.85
MKTF-24	11/14/2018	6928.72	NA	6905.42	23.30	ND	NA	30.82
MKTF-24	2/25/2019	6928.72	NA	6906.29	22.43	ND	NA	30.47
MKTF-24	5/6/2019	6928.72	NA	6907.19	21.53	ND	NA	30.47
MKTF-24	8/23/2019	6928.72	NA	6906.67	22.05	ND	NA	30.85
MKTF-24	10/22/2019	6928.72	NA	6905.51	23.21	ND	NA	30.82
MKTF-24	2/24/2020	6928.72	NA	6906.55	22.17	ND	NA	30.47
MKTF-24	6/26/2020	6928.72	NA	6905.92	22.80	ND	NA	30.47
MKTF-24	9/15/2020	6928.72	NA	6905.37	23.35	ND	NA	31.13
MKTF-24	11/10/2020	6928.72	NA	6905.40	23.32	ND	NA	31.13
MKTF-24	12/4/2020	6928.72	NA	6905.50	23.22	ND	NA	31.18
MKTF-25	6/6/2014	6916.19	NA	6905.31	10.88	ND	NA	19.43
MKTF-25	9/23/2014	6916.19	NA	6904.06	12.13	ND	NA	19.43
MKTF-25	11/5/2014	6916.19	NA	6904.99	11.20	ND	NA	19.43
MKTF-25	11/14/2014	6916.19	NA	6904.73	11.46	ND	NA	19.43
MKTF-25	3/11/2015	6916.19	NA	6905.34	10.85	ND	NA	19.43
MKTF-25	6/10/2015	6916.19	NA	6905.15	11.04	ND	NA	19.43
MKTF-25	8/21/2015	6916.19	NA	6905.59	10.60	ND	NA	20.43
MKTF-25	2/23/2016	6916.19	NA	6905.36	10.83	ND	NA	19.43
MKTF-25	6/9/2016	6916.19	NA	6904.97	11.22	ND	NA	19.43
MKTF-25	9/8/2016	6916.19	NA	6904.02	12.17	ND	NA	20.43
MKTF-25	11/5/2016	6916.19	NA	6904.99	11.20	ND	NA	19.43
MKTF-25	3/6/2017	6916.19	NA	6906.67	9.52	ND	NA	19.43
MKTF-25	6/5/2017	6916.19	NA	6905.96	10.23	ND	NA	19.43
MKTF-25	9/25/2017	6916.19	NA	6905.15	11.04	ND	NA	19.43
MKTF-25	11/21/2017	6916.19	NA	6905.08	11.11	ND	NA	19.80
MKTF-25	2/5/2018	6916.19	NA	6904.99	11.20	ND	NA	19.55
MKTF-25	4/25/2018	6916.19	NA	6905.01	11.18	ND	NA	19.50
MKTF-25	8/15/2018	6916.19	NA	6903.83	12.36	ND	NA	19.78

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-25	11/14/2018	6916.19	NA	6902.84	13.35	ND	NA	19.80
MKTF-25	2/14/2019	6916.19	NA	6903.06	13.13	ND	NA	19.43
MKTF-25	5/6/2019	6916.19	NA	6904.19	12.00	ND	NA	19.43
MKTF-25	8/23/2019	6916.19	NA	6903.07	13.12	ND	NA	19.78
MKTF-25	8/27/2019	6916.19	NA	6902.96	13.23	ND	NA	20.78
MKTF-25	10/22/2019	6916.19	NA	6902.47	13.72	ND	NA	19.80
MKTF-25	2/26/2020	6916.19	NA	6903.25	12.94	ND	NA	19.43
MKTF-25	6/26/2020	6916.19	NA	6902.86	13.33	ND	NA	19.43
MKTF-25	9/15/2020	6916.19	NA	6902.29	13.90	ND	NA	20.09
MKTF-25	11/10/2020	6916.19	NA	6902.44	13.75	ND	NA	20.09
MKTF-25	12/4/2020	6916.19	NA	6902.57	13.62	ND	NA	20.38
MKTF-26	6/4/2014	6915.31	NA	6906.68	8.63	ND	NA	17.15
MKTF-26	9/23/2014	6915.31	NA	6906.01	9.30	ND	NA	17.15
MKTF-26	11/14/2014	6915.31	NA	6906.59	8.72	ND	NA	17.15
MKTF-26	3/11/2015	6915.31	NA	6907.31	8.00	ND	NA	17.15
MKTF-26	6/10/2015	6915.31	NA	6906.74	8.57	ND	NA	17.15
MKTF-26	8/20/2015	6915.31	NA	6906.77	8.54	ND	NA	18.15
MKTF-26	11/4/2015	6915.31	NA	6906.91	8.40	ND	NA	17.15
MKTF-26	2/22/2016	6915.31	NA	6907.14	8.17	ND	NA	17.15
MKTF-26	6/9/2016	6915.31	NA	6905.71	9.60	ND	NA	17.15
MKTF-26	9/7/2016	6915.31	6905.87	6904.50	10.81	9.44	1.37	18.15
MKTF-26	11/4/2016	6915.31	NA	6906.91	8.40	ND	NA	17.15
MKTF-26	3/6/2017	6915.31	6907.87	6907.12	8.19	7.44	0.75	17.15
MKTF-26	6/5/2017	6915.31	6907.28	6906.32	8.99	8.03	0.96	17.15
MKTF-26	10/3/2017	6915.31	6907.54	6906.71	8.60	7.77	0.83	17.15
MKTF-26	11/20/2017	6915.31	6907.22	6906.38	8.93	8.09	0.84	17.15
MKTF-26	2/7/2018	6915.31	6906.78	6905.95	9.36	8.53	0.83	17.15
MKTF-26	4/25/2018	6915.31	6906.75	6905.94	9.37	8.56	0.81	17.05
MKTF-26	8/15/2018	6915.31	6906.58	6905.74	9.57	8.73	0.84	17.17
MKTF-26	11/14/2018	6915.31	6906.86	6905.41	9.90	8.45	1.45	17.15
MKTF-26	2/14/2019	6915.31	6906.93	6906.16	9.15	8.38	0.77	17.15
MKTF-26	5/6/2019	6915.31	6907.51	6906.66	8.65	7.80	0.85	17.15
MKTF-26	8/23/2019	6915.31	6907.09	6906.26	9.05	8.22	0.83	17.17
MKTF-26	10/22/2019	6915.31	6906.68	6905.95	9.36	8.63	0.73	17.15
MKTF-26	2/26/2020	6915.31	6906.96	6906.20	9.11	8.35	0.76	17.15
MKTF-26	6/26/2020	6915.31	6906.70	6905.81	9.50	8.61	0.89	17.15
MKTF-26	9/15/2020	6915.31	6906.50	6905.75	9.56	8.81	0.75	16.85
MKTF-26	11/10/2020	6915.31	6906.66	6905.95	9.36	8.65	0.71	16.85
MKTF-26	12/4/2020	6915.31	6907.64	6905.92	9.39	7.67	1.72	17.16
MKTF-27	6/4/2014	6917.90	NA	6910.23	7.67	ND	NA	14.72
MKTF-27	9/23/2014	6917.90	NA	6909.30	8.60	ND	NA	14.72
MKTF-27	11/14/2014	6917.90	NA	6909.75	8.15	ND	NA	14.72
MKTF-27	3/11/2015	6917.90	NA	6910.80	7.10	ND	NA	14.72
MKTF-27	6/9/2015	6917.90	NA	6910.46	7.44	ND	NA	14.72
MKTF-27	8/20/2015	6917.90	NA	6910.05	7.85	ND	NA	15.72
MKTF-27	11/4/2015	6917.90	NA	6910.37	7.53	ND	NA	14.72
MKTF-27	2/22/2016	6917.90	NA	6910.70	7.20	ND	NA	14.72
MKTF-27	6/8/2016	6917.90	NA	6910.39	7.51	ND	NA	14.72
MKTF-27	9/7/2016	6917.90	NA	6909.84	8.06	ND	NA	15.72
MKTF-27	11/4/2016	6917.90	NA	6910.37	7.53	ND	NA	14.72
MKTF-27	3/6/2017	6917.90	NA	6911.88	6.02	ND	NA	14.72

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
MKTF-27	6/5/2017	6917.90	NA	6911.58	6.32	ND	NA	14.72
MKTF-27	10/3/2017	6917.90	NA	6912.00	5.90	ND	NA	14.72
MKTF-27	11/20/2017	6917.90	NA	6911.92	5.98	ND	NA	14.72
MKTF-27	2/6/2018	6917.90	NA	6911.65	6.25	ND	NA	14.72
MKTF-27	4/25/2018	6917.90	NA	6911.56	6.34	ND	NA	14.62
MKTF-27	8/15/2018	6917.90	NA	6911.75	6.15	ND	NA	14.72
MKTF-27	11/14/2018	6917.90	NA	6911.59	6.31	ND	NA	14.72
MKTF-27	2/25/2019	6917.90	NA	6914.15	3.75	ND	NA	14.72
MKTF-27	5/6/2019	6917.90	NA	6912.17	5.73	ND	NA	14.72
MKTF-27	8/21/2019	6917.90	NA	6912.24	5.66	ND	NA	14.72
MKTF-27	10/30/2019	6917.90	NA	6911.76	6.14	ND	NA	14.72
MKTF-27	2/24/2020	6917.90	NA	6914.29	3.61	ND	NA	14.72
MKTF-27	6/30/2020	6917.90	NA	6911.20	6.70	ND	NA	14.72
MKTF-27	9/15/2020	6917.90	NA	6911.69	6.21	ND	NA	14.72
MKTF-27	11/10/2020	6917.90	NA	6911.18	6.72	ND	NA	14.72
MKTF-27	12/4/2020	6917.90	NA	6911.43	6.47	ND	NA	14.74
MKTF-28	6/6/2014	6921.52	NA	6909.72	11.80	ND	NA	16.16
MKTF-28	9/23/2014	6921.52	NA	6915.32	6.20	ND	NA	16.16
MKTF-28	11/14/2014	6921.52	NA	6915.52	6.00	ND	NA	16.16
MKTF-28	3/11/2015	6921.52	NA	6914.88	6.64	ND	NA	16.16
MKTF-28	6/9/2015	6921.52	NA	6916.12	5.40	ND	NA	16.16
MKTF-28	8/20/2015	6921.52	NA	6915.10	6.42	ND	NA	17.16
MKTF-28	11/4/2015	6921.52	NA	6915.78	5.74	ND	NA	16.16
MKTF-28	2/23/2016	6921.52	NA	6916.20	5.32	ND	NA	16.16
MKTF-28	6/8/2016	6921.52	NA	6916.24	5.28	ND	NA	16.16
MKTF-28	9/8/2016	6921.52	NA	6915.12	6.40	ND	NA	17.16
MKTF-28	11/4/2016	6921.52	NA	6915.78	5.74	ND	NA	16.16
MKTF-28	3/6/2017	6921.52	NA	6916.84	4.68	ND	NA	16.16
MKTF-28	6/5/2017	6921.52	NA	6913.62	7.90	ND	NA	16.16
MKTF-28	10/3/2017	6921.52	NA	6917.24	4.28	ND	NA	16.16
MKTF-28	11/20/2017	6921.52	NA	6913.62	7.90	ND	NA	16.13
MKTF-28	2/6/2018	6921.52	NA	6914.79	6.73	ND	NA	16.13
MKTF-28	4/25/2018	6921.52	NA	6914.54	6.98	ND	NA	16.04
MKTF-28	8/15/2018	6921.52	NA	6917.07	4.45	ND	NA	16.15
MKTF-28	11/14/2018	6921.52	NA	6915.40	6.12	ND	NA	16.13
MKTF-28	2/25/2019	6921.52	NA	6916.61	4.91	ND	NA	16.16
MKTF-28	5/6/2019	6921.52	NA	6912.25	9.27	ND	NA	16.16
MKTF-28	8/21/2019	6921.52	NA	6917.70	3.82	ND	NA	16.15
MKTF-28	10/22/2019	6921.52	NA	6915.14	6.38	ND	NA	16.13
MKTF-28	2/24/2020	6921.52	NA	6916.99	4.53	ND	NA	16.16
MKTF-28	6/30/2020	6921.52	NA	6916.68	4.84	ND	NA	16.16
MKTF-28	9/15/2020	6921.52	NA	6916.93	4.59	ND	NA	16.17
MKTF-28	11/10/2020	6921.52	NA	6912.71	8.81	ND	NA	16.17
MKTF-28	12/4/2020	6921.52	NA	6914.39	7.13	ND	NA	16.16
MKTF-29	6/6/2014	6901.62	NA	6899.48	2.14	ND	NA	22.84
MKTF-29	9/23/2014	6901.62	NA	6897.22	4.40	ND	NA	22.84
MKTF-29	11/14/2014	6901.62	NA	6898.57	3.05	ND	NA	22.84
MKTF-29	3/11/2015	6901.62	NA	6899.58	2.04	ND	NA	22.84
MKTF-29	6/10/2015	6901.62	NA	6898.93	2.69	ND	NA	22.84
MKTF-29	8/20/2015	6901.62	NA	6899.32	2.30	ND	NA	23.84
MKTF-29	11/4/2015	6901.62	NA	6899.22	2.40	ND	NA	22.84

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MKTF-29	2/23/2016	6901.62	NA	6899.70	1.92	ND	NA	22.84
MKTF-29	6/9/2016	6901.62	NA	6898.93	2.69	ND	NA	22.84
MKTF-29	9/7/2016	6901.62	NA	6897.10	4.52	ND	NA	23.84
MKTF-29	11/4/2016	6901.62	NA	6899.22	2.40	ND	NA	22.84
MKTF-29	3/6/2017	6901.62	NA	6900.63	0.99	ND	NA	22.84
MKTF-29	6/5/2017	6901.62	NA	6900.67	0.95	ND	NA	22.84
MKTF-29	10/3/2017	6901.62	NA	6900.03	1.59	ND	NA	22.84
MKTF-29	11/20/2017	6901.62	NA	6899.71	1.91	ND	NA	22.80
MKTF-29	2/6/2018	6901.62	NA	6899.69	1.93	ND	NA	22.81
MKTF-29	4/25/2018	6901.62	NA	6899.50	2.12	ND	NA	22.77
MKTF-29	8/15/2018	6901.62	NA	6897.70	3.92	ND	NA	22.82
MKTF-29	11/14/2018	6901.62	NA	6897.53	4.09	ND	NA	22.80
MKTF-29	2/25/2019	6901.62	NA	6897.89	3.73	ND	NA	22.84
MKTF-29	5/6/2019	6901.62	NA	6897.90	3.72	ND	NA	22.84
MKTF-29	8/23/2019	6901.62	NA	6895.79	5.83	ND	NA	22.82
MKTF-29	10/22/2019	6901.62	NA	6895.30	6.32	ND	NA	22.80
MKTF-29	2/24/2020	6901.62	NA	6897.13	4.49	ND	NA	22.84
MKTF-29	6/26/2020	6901.62	NA	6895.20	6.42	ND	NA	22.84
MKTF-29	9/15/2020	6901.62	NA	6893.61	8.01	ND	NA	22.78
MKTF-29	11/10/2020	6901.62	NA	6894.64	6.98	ND	NA	22.78
MKTF-29	12/4/2020	6901.62	NA	6895.22	6.40	ND	NA	22.85
MKTF-30	6/4/2014	6900.80	NA	6886.09	14.71	ND	NA	23.20
MKTF-30	9/23/2014	6900.80	NA	6884.91	15.89	ND	NA	23.20
MKTF-30	11/17/2014	6900.80	NA	6884.93	15.87	ND	NA	23.20
MKTF-30	3/11/2015	6900.80	NA	6886.06	14.74	ND	NA	23.20
MKTF-30	6/10/2015	6900.80	NA	6886.23	14.57	ND	NA	23.20
MKTF-30	8/20/2015	6900.80	NA	6885.51	15.29	ND	NA	24.20
MKTF-30	11/4/2015	6900.80	NA	6886.06	14.74	ND	NA	23.20
MKTF-30	2/23/2016	6900.80	NA	6886.40	14.40	ND	NA	23.20
MKTF-30	6/9/2016	6900.80	NA	6886.79	14.01	ND	NA	23.20
MKTF-30	9/7/2016	6900.80	NA	6885.32	15.48	ND	NA	24.20
MKTF-30	11/4/2016	6900.80	NA	6886.06	14.74	ND	NA	23.20
MKTF-30	3/6/2017	6900.80	NA	6886.67	14.13	ND	NA	23.20
MKTF-30	6/5/2017	6900.80	NA	6886.93	13.87	ND	NA	23.20
MKTF-30	10/3/2017	6900.80	NA	6885.77	15.03	ND	NA	23.20
MKTF-30	11/20/2017	6900.80	NA	6885.89	14.91	ND	NA	23.19
MKTF-30	2/6/2018	6900.80	NA	6886.60	14.20	ND	NA	23.20
MKTF-30	4/25/2018	6900.80	NA	6887.01	13.79	ND	NA	23.10
MKTF-30	8/15/2018	6900.80	NA	6886.15	14.65	ND	NA	23.20
MKTF-30	11/14/2018	6900.80	NA	6885.65	15.15	ND	NA	23.19
MKTF-30	3/28/2019	6900.80	NA	6887.12	13.68	ND	NA	23.20
MKTF-30	5/6/2019	6900.80	NA	6886.99	13.81	ND	NA	23.20
MKTF-30	8/23/2019	6900.80	NA	6885.92	14.88	ND	NA	23.20
MKTF-30	10/22/2019	6900.80	NA	6884.98	15.82	ND	NA	23.19
MKTF-30	2/26/2020	6900.80	NA	6885.49	15.31	ND	NA	23.20
MKTF-30	6/26/2020	6900.80	NA	6884.61	16.19	ND	NA	23.20
MKTF-30	9/15/2020	6900.80	NA	6884.14	16.66	ND	NA	23.22
MKTF-30	11/10/2020	6900.80	NA	6883.93	16.87	ND	NA	23.22
MKTF-30	12/4/2020	6900.80	NA	6884.04	16.76	ND	NA	23.22
MKTF-31	6/4/2014	6906.87	NA	6899.17	7.70	ND	NA	22.81
MKTF-31	9/23/2014	6906.87	NA	6898.52	8.35	ND	NA	22.81

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MKTF-31	11/17/2014	6906.87	NA	6898.47	8.40	ND	NA	22.81
MKTF-31	3/11/2015	6906.87	NA	6898.89	7.98	ND	NA	22.81
MKTF-31	6/10/2015	6906.87	NA	6899.12	7.75	ND	NA	22.81
MKTF-31	8/21/2015	6906.87	NA	6898.78	8.09	ND	NA	23.81
MKTF-31	11/4/2015	6906.87	NA	6898.73	8.14	ND	NA	22.81
MKTF-31	2/23/2016	6906.87	NA	6898.92	7.95	ND	NA	22.81
MKTF-31	6/9/2016	6906.87	NA	6899.12	7.75	ND	NA	22.81
MKTF-31	9/8/2016	6906.87	NA	6898.39	8.48	ND	NA	23.81
MKTF-31	11/4/2016	6906.87	NA	6898.73	8.14	ND	NA	22.81
MKTF-31	3/7/2017	6906.87	NA	6899.03	7.84	ND	NA	22.81
MKTF-31	6/5/2017	6906.87	NA	6899.29	7.58	ND	NA	22.81
MKTF-31	9/25/2017	6906.87	NA	6898.58	8.29	ND	NA	23.81
MKTF-31	11/21/2017	6906.87	NA	6898.72	8.15	ND	NA	19.30
MKTF-31	2/5/2018	6906.87	NA	6898.97	7.90	ND	NA	19.31
MKTF-31	4/25/2018	6906.87	NA	6899.14	7.73	ND	NA	19.26
MKTF-31	8/15/2018	6906.87	NA	6898.62	8.25	ND	NA	19.35
MKTF-31	11/14/2018	6906.87	NA	6898.43	8.44	ND	NA	19.30
MKTF-31	2/14/2019	6906.87	NA	6898.62	8.25	ND	NA	22.81
MKTF-31	5/6/2019	6906.87	NA	6899.15	7.72	ND	NA	22.81
MKTF-31	8/23/2019	6906.87	NA	6898.57	8.30	ND	NA	19.35
MKTF-31	10/22/2019	6906.87	NA	6898.23	8.64	ND	NA	19.30
MKTF-31	2/24/2020	6906.87	NA	6898.77	8.10	ND	NA	22.81
MKTF-31	6/26/2020	6906.87	NA	6898.62	8.25	ND	NA	22.81
MKTF-31	9/15/2020	6906.87	NA	6898.12	8.75	ND	NA	19.34
MKTF-31	11/10/2020	6906.87	NA	6898.08	8.79	ND	NA	19.34
MKTF-31	12/4/2020	6906.87	NA	6898.14	8.73	ND	NA	19.37
MKTF-32	6/4/2014	6911.11	NA	6894.59	16.52	ND	NA	27.75
MKTF-32	9/23/2014	6911.11	NA	6894.43	16.68	ND	NA	27.75
MKTF-32	11/17/2014	6911.11	NA	6894.63	16.48	ND	NA	27.75
MKTF-32	3/12/2015	6911.11	NA	6895.62	15.49	ND	NA	27.75
MKTF-32	6/9/2015	6911.11	NA	6895.62	15.49	ND	NA	27.75
MKTF-32	8/21/2015	6911.11	NA	6895.96	15.15	ND	NA	28.75
MKTF-32	11/5/2015	6911.11	NA	6896.27	14.84	ND	NA	27.75
MKTF-32	2/24/2016	6911.11	NA	6896.58	14.53	ND	NA	27.75
MKTF-32	6/9/2016	6911.11	NA	6896.80	14.31	ND	NA	27.75
MKTF-32	9/9/2016	6911.11	NA	6896.71	14.40	ND	NA	28.75
MKTF-32	11/5/2016	6911.11	NA	6896.27	14.84	ND	NA	27.75
MKTF-32	3/7/2017	6911.11	NA	6897.41	13.70	ND	NA	27.75
MKTF-32	6/6/2017	6911.11	NA	6897.32	13.79	ND	NA	27.75
MKTF-32	9/25/2017	6911.11	NA	6897.00	14.11	ND	NA	28.75
MKTF-32	11/27/2017	6911.11	NA	6897.54	13.57	ND	NA	27.75
MKTF-32	2/7/2018	6911.11	NA	6897.41	13.70	ND	NA	27.75
MKTF-32	4/25/2018	6911.11	NA	6897.63	13.48	ND	NA	27.66
MKTF-32	8/15/2018	6911.11	NA	6897.11	14.00	ND	NA	27.77
MKTF-32	11/14/2018	6911.11	NA	6897.01	14.10	ND	NA	27.75
MKTF-32	2/13/2019	6911.11	NA	6897.62	13.49	ND	NA	27.75
MKTF-32	5/7/2019	6911.11	NA	6897.86	13.25	ND	NA	27.75
MKTF-32	8/20/2019	6911.11	NA	6897.08	14.03	ND	NA	27.77
MKTF-32	10/23/2019	6911.11	NA	6897.10	14.01	ND	NA	27.75
MKTF-32	2/26/2020	6911.11	NA	6897.33	13.78	ND	NA	27.75
MKTF-32	6/29/2020	6911.11	NA	6896.86	14.25	ND	NA	27.75

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MKTF-32	9/14/2020	6911.11	NA	6896.53	14.58	ND	NA	27.46
MKTF-32	11/10/2020	6911.11	NA	6896.80	14.31	ND	NA	27.46
MKTF-32	12/4/2020	6911.11	NA	6896.86	14.25	ND	NA	27.82
MKTF-33	6/6/2014	6939.75	NA	6916.35	23.40	ND	NA	33.20
MKTF-33	9/23/2014	6939.75	NA	6916.06	23.69	ND	NA	33.20
MKTF-33	11/17/2014	6939.75	NA	6915.96	23.79	ND	NA	33.20
MKTF-33	3/12/2015	6939.75	NA	6916.43	23.32	ND	NA	33.20
MKTF-33	6/9/2015	6939.75	NA	6916.45	23.30	ND	NA	33.20
MKTF-33	8/21/2015	6939.75	NA	6916.43	23.32	ND	NA	34.20
MKTF-33	11/9/2015	6939.75	NA	6916.56	23.19	ND	NA	33.20
MKTF-33	2/25/2016	6939.75	NA	6916.55	23.20	ND	NA	33.20
MKTF-33	6/10/2016	6939.75	NA	6916.46	23.29	ND	NA	33.20
MKTF-33	9/10/2016	6939.75	NA	6916.55	23.20	ND	NA	34.20
MKTF-33	11/9/2016	6939.75	NA	6916.56	23.19	ND	NA	33.20
MKTF-33	3/8/2017	6939.75	NA	6917.59	22.16	ND	NA	33.20
MKTF-33	6/7/2017	6939.75	NA	6917.68	22.07	ND	NA	33.20
MKTF-33	9/25/2017	6939.75	NA	6917.25	22.50	ND	NA	33.20
MKTF-33	11/27/2017	6939.75	NA	6917.48	22.27	ND	NA	33.22
MKTF-33	2/7/2018	6939.75	NA	6917.10	22.65	ND	NA	33.20
MKTF-33	4/26/2018	6939.75	NA	6917.20	22.55	ND	NA	33.11
MKTF-33	8/15/2018	6939.75	NA	6916.90	22.85	ND	NA	33.23
MKTF-33	11/27/2018	6939.75	NA	6917.03	22.72	ND	NA	33.22
MKTF-33	3/25/2019	6939.75	NA	6917.75	22.00	ND	NA	33.20
MKTF-33	5/9/2019	6939.75	NA	6917.71	22.04	ND	NA	33.20
MKTF-33	8/20/2019	6939.75	NA	6917.40	22.35	ND	NA	33.23
MKTF-33	10/24/2019	6939.75	NA	6917.25	22.50	ND	NA	33.22
MKTF-33	2/27/2020	6939.75	NA	6917.04	22.71	ND	NA	33.20
MKTF-33	6/29/2020	6939.75	NA	6918.58	21.17	ND	NA	33.20
MKTF-33	9/14/2020	6939.75	6918.14	6911.73	28.02	21.61	6.41	33.15
MKTF-33	11/10/2020	6939.75	6918.10	6911.94	27.81	21.65	6.16	33.15
MKTF-33	12/4/2020	6939.75	6918.06	6911.98	27.77	21.69	6.08	33.57
MKTF-34	6/6/2014	6945.35	NA	6926.76	18.59	ND	NA	27.68
MKTF-34	9/23/2014	6945.35	NA	6926.27	19.08	ND	NA	27.68
MKTF-34	11/17/2014	6945.35	NA	6925.77	19.58	ND	NA	27.68
MKTF-34	3/12/2015	6945.35	NA	6926.58	18.77	ND	NA	27.68
MKTF-34	6/8/2015	6945.35	NA	6926.45	18.90	ND	NA	27.68
MKTF-34	8/18/2015	6945.35	NA	6926.61	18.74	ND	NA	28.68
MKTF-34	11/3/2015	6945.35	NA	6926.35	19.00	ND	NA	27.68
MKTF-34	2/25/2016	6945.35	NA	6926.15	19.20	ND	NA	27.68
MKTF-34	6/10/2016	6945.35	NA	6926.75	18.60	ND	NA	27.68
MKTF-34	9/12/2016	6945.35	NA	6927.32	18.03	ND	NA	28.68
MKTF-34	11/3/2016	6945.35	NA	6926.35	19.00	ND	NA	27.68
MKTF-34	3/1/2017	6945.35	NA	6928.85	16.50	ND	NA	27.68
MKTF-34	6/14/2017	6945.35	NA	6927.72	17.63	ND	NA	27.68
MKTF-34	9/26/2017	6945.35	NA	6927.73	17.62	ND	NA	27.68
MKTF-34	11/30/2017	6945.35	NA	6927.32	18.03	ND	NA	27.70
MKTF-34	2/15/2018	6945.35	NA	6926.55	18.80	ND	NA	27.71
MKTF-34	4/26/2018	6945.35	NA	6926.72	18.63	ND	NA	27.60
MKTF-34	8/15/2018	6945.35	NA	6926.77	18.58	ND	NA	27.70
MKTF-34	11/27/2018	6945.35	NA	6926.40	18.95	ND	NA	27.70
MKTF-34	3/25/2019	6945.35	NA	6928.40	16.95	ND	NA	27.68

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MKTF-34	5/9/2019	6945.35	NA	6927.26	18.09	ND	NA	27.68
MKTF-34	8/19/2019	6945.35	NA	6927.65	17.70	ND	NA	27.70
MKTF-34	10/29/2019	6945.35	NA	6927.32	18.03	ND	NA	27.70
MKTF-34	11/12/2019	6945.35	NA	6927.29	18.06	ND	NA	27.70
MKTF-34	2/5/2020	6945.35	NA	6927.57	17.78	ND	NA	27.70
MKTF-34	6/29/2020	6945.35	6926.31	6926.29	19.06	19.04	0.02	27.70
MKTF-34	9/14/2020	6945.35	NA	6926.26	19.09	ND	NA	27.76
MKTF-34	11/10/2020	6945.35	NA	6926.27	19.08	ND	NA	27.76
MKTF-34	12/4/2020	6945.35	6926.44	6926.43	18.92	18.91	0.01	27.78
MKTF-35	11/20/2014	6951.65	NA	6942.00	9.65	ND	NA	16.45
MKTF-35	3/17/2015	6951.65	NA	6942.72	8.93	ND	NA	16.45
MKTF-35	6/4/2015	6951.65	NA	6942.72	8.93	ND	NA	16.45
MKTF-35	8/18/2015	6951.65	NA	6942.74	8.91	ND	NA	16.45
MKTF-35	11/3/2015	6951.65	NA	6942.63	9.02	ND	NA	16.45
MKTF-35	2/26/2016	6951.65	NA	6943.25	8.40	ND	NA	16.45
MKTF-35	6/10/2016	6951.65	NA	6944.28	7.37	ND	NA	16.45
MKTF-35	9/12/2016	6951.65	NA	6945.00	6.65	ND	NA	16.45
MKTF-35	11/3/2016	6951.65	NA	6942.63	9.02	ND	NA	16.45
MKTF-35	3/1/2017	6951.65	NA	6945.47	6.18	ND	NA	16.45
MKTF-35	6/14/2017	6951.65	NA	6944.53	7.12	ND	NA	16.45
MKTF-35	9/27/2017	6951.65	NA	6943.95	7.70	ND	NA	16.45
MKTF-35	11/30/2017	6951.65	NA	6943.50	8.15	ND	NA	16.45
MKTF-35	2/15/2018	6951.65	NA	6942.95	8.70	ND	NA	16.47
MKTF-35	4/26/2018	6951.65	NA	6943.12	8.53	ND	NA	16.40
MKTF-35	8/16/2018	6951.65	NA	6942.95	8.70	ND	NA	16.48
MKTF-35	11/27/2018	6951.65	NA	6942.55	9.10	ND	NA	16.45
MKTF-35	3/25/2019	6951.65	NA	6943.11	8.54	ND	NA	16.45
MKTF-35	5/16/2019	6951.65	NA	6943.16	8.49	ND	NA	16.45
MKTF-35	8/19/2019	6951.65	NA	6943.56	8.09	ND	NA	16.48
MKTF-35	10/28/2019	6951.65	NA	6943.23	8.42	ND	NA	16.45
MKTF-35	10/29/2019	6951.65	NA	6943.25	8.40	ND	NA	16.45
MKTF-35	11/12/2019	6951.65	NA	6943.05	8.60	ND	NA	16.45
MKTF-35	2/5/2020	6951.65	NA	6942.37	9.28	ND	NA	16.45
MKTF-35	6/30/2020	6951.65	NA	6942.40	9.25	ND	NA	16.45
MKTF-35	9/14/2020	6951.65	NA	6943.06	8.59	ND	NA	16.23
MKTF-35	11/10/2020	6951.65	NA	6942.79	8.86	ND	NA	16.23
MKTF-35	12/4/2020	6951.65	6942.63	6942.62	9.03	9.02	0.01	16.39
MKTF-36	11/20/2014	NA	NA	NA	7.99	ND	NA	15.45
MKTF-36	3/17/2015	NA	NA	NA	7.71	ND	NA	15.45
MKTF-36	6/4/2015	NA	NA	NA	7.53	ND	NA	15.45
MKTF-36	8/18/2015	NA	NA	NA	7.50	ND	NA	15.45
MKTF-36	11/3/2015	NA	NA	NA	7.66	7.00	0.66	15.45
MKTF-36	3/17/2016	NA	NA	NA	7.71	ND	NA	15.45
MKTF-36	6/10/2016	NA	NA	NA	6.80	6.78	0.02	15.45
MKTF-36	9/13/2016	NA	NA	NA	6.55	6.54	0.01	15.45
MKTF-36	11/3/2016	NA	NA	NA	7.66	7.00	0.66	15.45
MKTF-36	3/1/2017	NA	NA	NA	5.56	ND	NA	15.45
MKTF-36	6/14/2017	NA	NA	NA	5.40	ND	NA	15.45
MKTF-36	9/27/2017	NA	NA	NA	5.80	ND	NA	15.45
MKTF-36	11/30/2017	NA	NA	NA	6.45	ND	NA	15.45
MKTF-36	2/15/2018	NA	NA	NA	6.86	ND	NA	15.45

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MKTF-36	4/26/2018	NA	NA	NA	6.56	ND	NA	15.40
MKTF-36	9/5/2018	NA	NA	NA	6.52	ND	NA	15.43
MKTF-36	11/29/2018	NA	NA	NA	NA	NA	NA	15.43
MKTF-36	3/25/2019	NA	NA	NA	NA	NA	NA	15.43
MKTF-36	5/14/2019	NA	NA	NA	NA	NA	NA	15.43
MKTF-36	8/19/2019	NA	NA	NA	NA	NA	NA	15.43
MKTF-36	11/6/2019	NA	NA	NA	10.33	5.08	5.25	15.40
MKTF-36	11/7/2019	NA	NA	NA	10.21	4.30	5.91	15.61
MKTF-36	11/12/2019	NA	NA	NA	9.65	6.80	2.85	15.61
MKTF-36	11/13/2019	NA	NA	NA	9.40	6.95	2.45	15.61
MKTF-36	11/14/2019	NA	NA	NA	9.61	7.14	2.47	15.61
MKTF-36	11/15/2019	NA	NA	NA	9.46	7.31	2.15	15.61
MKTF-36	11/19/2019	NA	NA	NA	8.98	7.80	1.18	15.61
MKTF-36	11/21/2019	NA	NA	NA	8.78	8.00	0.78	15.61
MKTF-36	12/2/2019	NA	NA	NA	8.95	8.25	0.70	15.61
MKTF-36	2/3/2020	6950.12	6942.23	6941.68	8.44	7.89	0.55	15.61
MKTF-36	6/30/2020	6950.12	6942.08	6941.87	8.25	8.04	0.21	15.61
MKTF-36	9/14/2020	6950.12	NA	6942.25	7.87	ND	NA	15.58
MKTF-36	11/10/2020	6950.12	6942.14	6942.09	8.03	7.98	0.05	15.58
MKTF-36	12/4/2020	6950.12	6942.02	6941.95	8.17	8.10	0.07	15.58
MKTF-37	11/20/2014	6958.87	NA	6943.82	15.05	ND	NA	24.60
MKTF-37	3/17/2015	6958.87	NA	6949.66	9.21	ND	NA	24.60
MKTF-37	6/4/2015	6958.87	NA	6949.39	9.48	ND	NA	24.60
MKTF-37	8/18/2015	6958.87	NA	6949.42	9.45	ND	NA	24.60
MKTF-37	11/3/2015	6958.87	6949.33	6949.30	9.57	9.54	0.03	24.60
MKTF-37	3/17/2016	6958.87	NA	6949.66	9.21	ND	NA	24.60
MKTF-37	6/10/2016	6958.87	6950.66	6950.64	8.23	8.21	0.02	24.60
MKTF-37	9/12/2016	6958.87	NA	6951.22	7.65	ND	NA	24.60
MKTF-37	11/3/2016	6958.87	6949.33	6949.30	9.57	9.54	0.03	24.60
MKTF-37	3/1/2017	6958.87	NA	6951.97	6.90	ND	NA	24.60
MKTF-37	6/14/2017	6958.87	6951.67	6951.63	7.24	7.20	0.04	24.60
MKTF-37	9/27/2017	6958.87	6951.04	6950.98	7.89	7.83	0.06	24.60
MKTF-37	11/30/2017	6958.87	6950.48	6950.46	8.41	8.39	0.02	24.60
MKTF-37	2/15/2018	6958.87	6949.91	6949.87	9.00	8.96	0.04	24.60
MKTF-37	4/26/2018	6958.87	NA	6950.35	8.52	ND	NA	24.54
MKTF-37	8/16/2018	6958.87	NA	6950.17	8.70	ND	NA	24.59
MKTF-37	11/27/2018	6958.87	6949.47	6949.35	9.52	9.40	0.12	24.60
MKTF-37	3/25/2019	6958.87	NA	6950.48	8.39	ND	NA	24.60
MKTF-37	5/16/2019	6958.87	6949.77	6949.69	9.18	9.10	0.08	24.60
MKTF-37	8/23/2019	6958.87	6950.02	6950.00	8.87	8.85	0.02	24.59
MKTF-37	10/28/2019	6958.87	6949.57	6949.54	9.33	9.30	0.03	24.60
MKTF-37	10/29/2019	6958.87	6949.70	6949.67	9.20	9.17	0.03	24.60
MKTF-37	11/12/2019	6958.87	6949.35	6949.31	9.56	9.52	0.04	24.60
MKTF-37	2/3/2020	6958.87	6949.10	6948.98	9.89	9.77	0.12	24.60
MKTF-37	6/30/2020	6958.87	6949.26	6949.24	9.63	9.61	0.02	24.60
MKTF-37	9/14/2020	6958.87	NA	6950.11	8.76	ND	NA	24.54
MKTF-37	11/10/2020	6958.87	6949.51	6949.50	9.37	9.36	0.01	24.54
MKTF-37	12/4/2020	6958.87	6949.23	6949.22	9.65	9.64	0.01	24.61
MKTF-38	3/16/2015	6954.89	NA	6945.89	9.00	ND	NA	20.29
MKTF-38	6/10/2015	6954.89	NA	6945.55	9.34	ND	NA	20.29
MKTF-38	8/24/2015	6954.89	NA	6945.64	9.25	ND	NA	20.29

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MKTF-38	11/9/2015	6954.89	NA	6945.44	9.45	ND	NA	20.29
MKTF-38	2/29/2016	6954.89	NA	6946.26	8.63	ND	NA	20.29
MKTF-38	6/8/2016	6954.89	NA	6946.46	8.43	ND	NA	20.29
MKTF-38	9/13/2016	6954.89	NA	6946.89	8.00	ND	NA	20.29
MKTF-38	11/9/2016	6954.89	NA	6945.44	9.45	ND	NA	20.29
MKTF-38	3/14/2017	6954.89	NA	6948.48	6.41	ND	NA	20.29
MKTF-38	6/21/2017	6954.89	NA	6948.49	6.40	ND	NA	20.29
MKTF-38	9/28/2017	6954.89	NA	6948.57	6.32	ND	NA	20.29
MKTF-38	11/30/2017	6954.89	NA	6947.06	7.83	ND	NA	20.29
MKTF-38	2/12/2018	6954.89	NA	6946.49	8.40	ND	NA	20.30
MKTF-38	4/25/2018	6954.89	NA	6947.10	7.79	ND	NA	20.28
MKTF-38	8/16/2018	6954.89	NA	6946.84	8.05	ND	NA	20.27
MKTF-38	11/19/2018	6954.89	NA	6945.90	8.99	ND	NA	20.29
MKTF-38	3/26/2019	6954.89	NA	6943.59	11.30	ND	NA	20.29
MKTF-38	5/14/2019	6954.89	NA	6946.23	8.66	ND	NA	20.29
MKTF-38	6/27/2019	6954.89	NA	6946.14	8.75	ND	NA	20.29
MKTF-38	8/20/2019	6954.89	NA	6946.12	8.77	ND	NA	20.27
MKTF-38	12/3/2019	6954.89	NA	6945.39	9.50	ND	NA	20.29
MKTF-38	3/4/2020	6954.89	NA	6945.28	9.61	ND	NA	20.31
MKTF-38	6/26/2020	6954.89	NA	6945.51	9.38	ND	NA	20.33
MKTF-38	9/14/2020	6954.89	NA	6946.34	8.55	ND	NA	20.18
MKTF-38	11/10/2020	6954.89	NA	6945.77	9.12	ND	NA	20.18
MKTF-38	12/4/2020	6954.89	6945.54	6945.53	9.36	9.35	0.01	21.30
MKTF-39	11/18/2014	6953.75	NA	6943.50	10.25	ND	NA	15.20
MKTF-39	3/16/2015	6953.75	NA	6944.87	8.88	ND	NA	15.20
MKTF-39	6/10/2015	6953.75	NA	6944.44	9.31	ND	NA	15.20
MKTF-39	8/23/2015	6953.75	NA	6944.51	9.24	ND	NA	15.20
MKTF-39	11/9/2015	6953.75	NA	6944.36	9.39	ND	NA	15.20
MKTF-39	3/3/2016	6953.75	NA	6945.25	8.50	ND	NA	15.20
MKTF-39	6/8/2016	6953.75	NA	6945.42	8.33	ND	NA	15.20
MKTF-39	9/13/2016	6953.75	NA	6945.35	8.40	ND	NA	15.20
MKTF-39	11/9/2016	6953.75	NA	6944.36	9.39	ND	NA	15.20
MKTF-39	3/14/2017	6953.75	NA	6947.31	6.44	ND	NA	15.20
MKTF-39	6/8/2017	6953.75	NA	6947.50	6.25	ND	NA	15.20
MKTF-39	9/28/2017	6953.75	NA	6946.43	7.32	ND	NA	15.20
MKTF-39	11/28/2017	6953.75	NA	6946.20	7.55	ND	NA	15.18
MKTF-39	2/8/2018	6953.75	NA	6945.57	8.18	ND	NA	15.20
MKTF-39	4/25/2018	6953.75	NA	6945.93	7.82	ND	NA	15.13
MKTF-39	8/16/2018	6953.75	NA	6945.45	8.30	ND	NA	15.20
MKTF-39	11/19/2018	6953.75	NA	6944.75	9.00	ND	NA	15.18
MKTF-39	3/28/2019	6953.75	NA	NA	NA	NA	NA	15.20
MKTF-39	6/5/2019	6953.75	NA	6945.06	8.69	ND	NA	15.20
MKTF-39	8/20/2019	6953.75	NA	6944.71	9.04	ND	NA	15.20
MKTF-39	11/4/2019	6953.75	NA	6944.16	9.59	ND	NA	15.18
MKTF-39	2/3/2020	6953.75	NA	6943.65	10.10	ND	NA	15.20
MKTF-39	6/26/2020	6953.75	NA	6944.12	9.63	ND	NA	15.00
MKTF-39	9/15/2020	6953.75	NA	6944.17	9.58	ND	NA	14.19
MKTF-39	11/10/2020	6953.75	NA	6943.70	10.05	ND	NA	14.19
MKTF-39	12/4/2020	6953.75	NA	6943.60	10.15	ND	NA	15.19
MKTF-40	11/18/2014	6894.33	NA	6874.39	19.94	ND	NA	23.64
MKTF-40	3/11/2015	6894.33	NA	6879.73	14.60	ND	NA	23.64

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MKTF-40	6/10/2015	6894.33	NA	6880.13	14.20	ND	NA	23.64
MKTF-40	8/21/2015	6894.33	NA	6880.50	13.83	ND	NA	23.64
MKTF-40	11/4/2015	6894.33	NA	6880.42	13.91	ND	NA	23.64
MKTF-40	2/23/2016	6894.33	NA	6880.45	13.88	ND	NA	23.64
MKTF-40	6/9/2016	6894.33	NA	6881.02	13.31	ND	NA	23.64
MKTF-40	9/8/2016	6894.33	NA	6880.81	13.52	ND	NA	23.64
MKTF-40	11/4/2016	6894.33	NA	6880.42	13.91	ND	NA	23.64
MKTF-40	3/7/2017	6894.33	NA	6881.19	13.14	ND	NA	23.64
MKTF-40	6/5/2017	6894.33	NA	6881.04	13.29	ND	NA	23.64
MKTF-40	9/25/2017	6894.33	NA	6881.05	13.28	ND	NA	23.64
MKTF-40	11/21/2017	6894.33	NA	6880.62	13.71	ND	NA	23.62
MKTF-40	2/5/2018	6894.33	NA	6881.15	13.18	ND	NA	23.62
MKTF-40	4/25/2018	6894.33	NA	6881.39	12.94	ND	NA	23.53
MKTF-40	8/15/2018	6894.33	NA	6881.59	12.74	ND	NA	23.54
MKTF-40	11/14/2018	6894.33	NA	6880.69	13.64	ND	NA	23.62
MKTF-40	2/20/2019	6894.33	NA	6881.54	12.79	ND	NA	23.64
MKTF-40	5/6/2019	6894.33	NA	6881.97	12.36	ND	NA	23.64
MKTF-40	8/22/2019	6894.33	NA	6882.18	12.15	ND	NA	23.54
MKTF-40	10/22/2019	6894.33	NA	6881.29	13.04	ND	NA	23.62
MKTF-40	2/27/2020	6894.33	NA	6881.10	13.23	ND	NA	23.64
MKTF-40	6/26/2020	6894.33	NA	6881.58	12.75	ND	NA	23.64
MKTF-40	9/15/2020	6894.33	NA	6880.94	13.39	ND	NA	23.66
MKTF-40	11/10/2020	6894.33	NA	6880.62	13.71	ND	NA	23.66
MKTF-40	12/4/2020	6894.33	NA	6880.34	13.99	ND	NA	23.67
MKTF-41	11/18/2014	6893.64	NA	6866.74	26.90	ND	NA	40.10
MKTF-41	3/12/2015	6893.64	NA	6873.57	20.07	ND	NA	40.10
MKTF-41	6/9/2015	6893.64	NA	6873.87	19.77	ND	NA	40.10
MKTF-41	8/21/2015	6893.64	NA	6873.74	19.90	ND	NA	40.10
MKTF-41	11/5/2015	6893.64	NA	6873.87	19.77	ND	NA	40.10
MKTF-41	2/24/2016	6893.64	NA	6873.74	19.90	ND	NA	40.10
MKTF-41	6/9/2016	6893.64	NA	6873.99	19.65	ND	NA	40.10
MKTF-41	9/9/2016	6893.64	NA	6873.53	20.11	ND	NA	40.10
MKTF-41	11/5/2016	6893.64	NA	6873.87	19.77	ND	NA	40.10
MKTF-41	3/7/2017	6893.64	NA	6874.04	19.60	ND	NA	40.10
MKTF-41	6/6/2017	6893.64	NA	6875.15	18.49	ND	NA	40.10
MKTF-41	9/25/2017	6893.64	NA	6873.39	20.25	ND	NA	40.10
MKTF-41	11/27/2017	6893.64	NA	6873.83	19.81	ND	NA	39.71
MKTF-41	2/7/2018	6893.64	NA	6873.41	20.23	ND	NA	39.72
MKTF-41	4/25/2018	6893.64	NA	6873.67	19.97	ND	NA	39.91
MKTF-41	8/15/2018	6893.64	NA	6873.38	20.26	ND	NA	39.74
MKTF-41	11/14/2018	6893.64	NA	6873.13	20.51	ND	NA	39.71
MKTF-41	2/13/2019	6893.64	NA	6873.54	20.10	ND	NA	40.10
MKTF-41	5/7/2019	6893.64	NA	6874.12	19.52	ND	NA	40.10
MKTF-41	8/22/2019	6893.64	NA	6874.09	19.55	ND	NA	39.74
MKTF-41	10/23/2019	6893.64	NA	6873.62	20.02	ND	NA	39.71
MKTF-41	2/26/2020	6893.64	NA	6873.49	20.15	ND	NA	40.10
MKTF-41	6/29/2020	6893.64	NA	6873.87	19.77	ND	NA	40.10
MKTF-41	9/14/2020	6893.64	NA	6872.92	20.72	ND	NA	39.66
MKTF-41	11/10/2020	6893.64	NA	6872.63	21.01	ND	NA	39.66
MKTF-41	12/4/2020	6893.64	NA	6872.74	20.90	ND	NA	39.80
MKTF-42	11/18/2014	6892.95	NA	6874.16	18.79	ND	NA	33.15

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MKTF-42	3/11/2015	6892.95	NA	6874.98	17.97	ND	NA	33.15
MKTF-42	6/9/2015	6892.95	NA	6875.35	17.60	ND	NA	33.15
MKTF-42	8/21/2015	6892.95	NA	6875.51	17.44	ND	NA	33.15
MKTF-42	11/5/2015	6892.95	NA	6875.69	17.26	ND	NA	33.15
MKTF-42	2/24/2016	6892.95	NA	6875.26	17.69	ND	NA	33.15
MKTF-42	6/9/2016	6892.95	NA	6875.65	17.30	ND	NA	33.15
MKTF-42	9/9/2016	6892.95	NA	6875.65	17.30	ND	NA	33.15
MKTF-42	11/5/2016	6892.95	NA	6875.69	17.26	ND	NA	33.15
MKTF-42	3/7/2017	6892.95	NA	6877.23	15.72	ND	NA	33.15
MKTF-42	6/6/2017	6892.95	NA	6875.83	17.12	ND	NA	33.15
MKTF-42	9/25/2017	6892.95	NA	6876.12	16.83	ND	NA	33.15
MKTF-42	11/27/2017	6892.95	NA	6876.14	16.81	ND	NA	33.18
MKTF-42	2/7/2018	6892.95	NA	6875.54	17.41	ND	NA	32.90
MKTF-42	4/25/2018	6892.95	NA	6875.82	17.13	ND	NA	33.08
MKTF-42	8/15/2018	6892.95	NA	6876.18	16.77	ND	NA	33.20
MKTF-42	11/14/2018	6892.95	NA	6876.01	16.94	ND	NA	33.18
MKTF-42	2/13/2019	6892.95	NA	6875.77	17.18	ND	NA	33.15
MKTF-42	5/7/2019	6892.95	NA	6876.27	16.68	ND	NA	33.15
MKTF-42	8/22/2019	6892.95	NA	6876.55	16.40	ND	NA	33.20
MKTF-42	10/23/2019	6892.95	NA	6876.43	16.52	ND	NA	33.18
MKTF-42	2/26/2020	6892.95	NA	6876.16	16.79	ND	NA	33.15
MKTF-42	6/30/2020	6892.95	NA	6876.70	16.25	ND	NA	33.15
MKTF-42	9/14/2020	6892.95	NA	6876.60	16.35	ND	NA	33.10
MKTF-42	11/10/2020	6892.95	NA	6877.65	15.30	ND	NA	33.10
MKTF-42	12/4/2020	6892.95	NA	6876.54	16.41	ND	NA	32.95
MKTF-43	11/18/2014	6876.90	NA	6869.95	6.95	ND	NA	15.43
MKTF-43	3/11/2015	6876.90	NA	6871.70	5.20	ND	NA	15.43
MKTF-43	6/10/2015	6876.90	NA	6873.27	3.63	ND	NA	15.43
MKTF-43	8/21/2015	6876.90	NA	6873.10	3.80	ND	NA	15.43
MKTF-43	11/5/2015	6876.90	NA	6871.78	5.12	ND	NA	15.43
MKTF-43	2/24/2016	6876.90	NA	6871.90	5.00	ND	NA	15.43
MKTF-43	6/9/2016	6876.90	NA	6873.23	3.67	ND	NA	15.43
MKTF-43	9/9/2016	6876.90	NA	6872.92	3.98	ND	NA	15.43
MKTF-43	11/5/2016	6876.90	NA	6871.78	5.12	ND	NA	15.43
MKTF-43	3/8/2017	6876.90	NA	6871.56	5.34	ND	NA	15.43
MKTF-43	6/6/2017	6876.90	NA	6873.28	3.62	ND	NA	15.43
MKTF-43	9/25/2017	6876.90	NA	6872.76	4.14	ND	NA	15.43
MKTF-43	11/27/2017	6876.90	NA	6871.25	5.65	ND	NA	15.38
MKTF-43	2/7/2018	6876.90	NA	6870.47	6.43	ND	NA	15.38
MKTF-43	4/25/2018	6876.90	NA	6871.85	5.05	ND	NA	15.30
MKTF-43	8/15/2018	6876.90	NA	6874.24	2.66	ND	NA	15.41
MKTF-43	11/14/2018	6876.90	NA	6871.48	5.42	ND	NA	15.38
MKTF-43	2/13/2019	6876.90	NA	6870.91	5.99	ND	NA	15.43
MKTF-43	5/8/2019	6876.90	NA	6872.93	3.97	ND	NA	15.43
MKTF-43	8/22/2019	6876.90	NA	6873.23	3.67	ND	NA	15.41
MKTF-43	10/24/2019	6876.90	NA	6872.56	4.34	ND	NA	15.38
MKTF-43	2/26/2020	6876.90	NA	6870.57	6.33	ND	NA	15.43
MKTF-43	6/30/2020	6876.90	NA	6871.40	5.50	ND	NA	15.43
MKTF-43	9/14/2020	6876.90	NA	6870.45	6.45	ND	NA	16.22
MKTF-43	11/10/2020	6876.90	NA	6869.42	7.48	ND	NA	16.22
MKTF-43	12/4/2020	6876.90	NA	6868.78	8.12	ND	NA	16.92

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MKTF-44	11/18/2014	6869.95	NA	6821.15	48.80	ND	NA	51.15
MKTF-44	3/12/2015	6869.95	NA	6831.51	38.44	ND	NA	51.15
MKTF-44	6/10/2015	6869.95	NA	6840.40	29.55	ND	NA	51.15
MKTF-44	8/17/2015	6869.95	NA	6838.72	31.23	ND	NA	51.15
MKTF-44	11/9/2015	6869.95	NA	6836.63	33.32	ND	NA	51.15
MKTF-44	2/24/2016	6869.95	NA	6841.21	28.74	ND	NA	51.15
MKTF-44	6/9/2016	6869.95	NA	6842.12	27.83	ND	NA	51.15
MKTF-44	9/8/2016	6869.95	NA	6838.61	31.34	ND	NA	51.15
MKTF-44	11/9/2016	6869.95	NA	6836.63	33.32	ND	NA	51.15
MKTF-44	3/8/2017	6869.95	NA	6844.56	25.39	ND	NA	51.15
MKTF-44	6/5/2017	6869.95	NA	6837.05	32.90	ND	NA	51.15
MKTF-44	9/25/2017	6869.95	NA	6839.77	30.18	ND	NA	51.15
MKTF-44	11/27/2017	6869.95	NA	6836.25	33.70	ND	NA	51.16
MKTF-44	2/7/2018	6869.95	NA	6832.39	37.56	ND	NA	51.16
MKTF-44	4/25/2018	6869.95	NA	6833.23	36.72	ND	NA	51.08
MKTF-44	8/15/2018	6869.95	NA	6834.25	35.70	ND	NA	51.20
MKTF-44	11/14/2018	6869.95	NA	6843.53	26.42	ND	NA	51.16
MKTF-44	2/13/2019	6869.95	NA	6836.56	33.39	ND	NA	51.15
MKTF-44	5/8/2019	6869.95	NA	6835.75	34.20	ND	NA	51.15
MKTF-44	8/22/2019	6869.95	NA	6838.99	30.96	ND	NA	51.20
MKTF-44	10/24/2019	6869.95	NA	6831.41	38.54	ND	NA	51.16
MKTF-44	3/4/2020	6869.95	NA	6839.61	30.34	ND	NA	51.15
MKTF-44	6/26/2020	6869.95	NA	6836.87	33.08	ND	NA	51.15
MKTF-44	9/14/2020	6869.95	NA	6841.95	28.00	ND	NA	51.95
MKTF-44	12/4/2020	6869.95	NA	6830.36	39.59	ND	NA	51.39
MKTF-45	2/10/2015	6949.59	6936.01	6933.07	16.52	13.58	2.94	30.24
MKTF-45	3/17/2015	6949.59	6936.45	6934.65	14.94	13.14	1.80	30.24
MKTF-45	6/8/2015	6949.59	6936.39	6932.84	16.75	13.20	3.55	30.24
MKTF-45	8/18/2015	6949.59	6936.09	6935.98	13.61	13.50	0.11	30.24
MKTF-45	11/3/2015	6949.59	6935.89	6935.57	14.02	13.70	0.32	30.24
MKTF-45	3/17/2016	6949.59	6936.45	6934.65	14.94	13.14	1.80	30.24
MKTF-45	6/10/2016	6949.59	6937.11	6936.79	12.80	12.48	0.32	30.24
MKTF-45	9/13/2016	6949.59	6937.64	6937.19	12.40	11.95	0.45	30.24
MKTF-45	11/3/2016	6949.59	6935.89	6935.57	14.02	13.70	0.32	30.24
MKTF-45	3/1/2017	6949.59	6939.27	6938.96	10.63	10.32	0.31	30.24
MKTF-45	6/14/2017	6949.59	6938.09	6937.59	12.00	11.50	0.50	30.24
MKTF-45	10/3/2017	6949.59	6938.11	6937.58	12.01	11.48	0.53	30.24
MKTF-45	11/30/2017	6949.59	6936.83	6936.36	13.23	12.76	0.47	30.24
MKTF-45	2/15/2018	6949.59	6936.50	6936.35	13.24	13.09	0.15	30.24
MKTF-45	4/26/2018	6949.59	6936.72	6936.29	13.30	12.87	0.43	30.28
MKTF-45	8/16/2018	6949.59	6936.44	6936.01	13.58	13.15	0.43	30.33
MKTF-45	11/27/2018	6949.59	6935.99	6935.44	14.15	13.60	0.55	30.24
MKTF-45	3/26/2019	6949.59	6937.59	6937.09	12.50	12.00	0.50	30.24
MKTF-45	5/14/2019	6949.59	6937.16	6936.57	13.02	12.43	0.59	30.24
MKTF-45	8/19/2019	6949.59	6935.57	6935.11	14.48	14.02	0.46	30.33
MKTF-45	10/28/2019	6949.59	6937.62	6936.59	13.00	11.97	1.03	30.24
MKTF-45	10/29/2019	6949.59	6938.21	6935.84	13.75	11.38	2.37	30.24
MKTF-45	11/6/2019	6949.59	6940.02	6927.07	22.52	9.57	12.95	30.24
MKTF-45	11/7/2019	6949.59	6940.59	6927.34	22.25	9.00	13.25	30.24
MKTF-45	11/11/2019	6949.59	6940.84	6925.99	23.60	8.75	14.85	30.24
MKTF-45	11/12/2019	6949.59	6939.97	6925.67	23.92	9.62	14.30	30.24

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MKTF-45	11/13/2019	6949.59	6939.89	6923.66	25.93	9.70	16.23	30.24
MKTF-45	11/14/2019	6949.59	6939.53	6924.30	25.29	10.06	15.23	30.24
MKTF-45	11/15/2019	6949.59	6939.31	6925.02	24.57	10.28	14.29	30.24
MKTF-45	11/19/2019	6949.59	6938.75	6926.84	22.75	10.84	11.91	30.24
MKTF-45	11/21/2019	6949.59	6938.59	6927.69	21.90	11.00	10.90	30.24
MKTF-45	12/2/2019	6949.59	6937.21	6930.64	18.95	12.38	6.57	30.24
MKTF-45	2/3/2020	6949.59	6939.99	6930.97	18.62	9.60	9.02	30.24
MKTF-45	6/30/2020	6949.59	6938.51	6930.51	19.08	11.08	8.00	30.24
MKTF-45	9/14/2020	6949.59	6936.45	6931.16	18.43	13.14	5.29	37.45
MKTF-45	11/10/2020	6949.59	6936.65	6934.83	14.76	12.94	1.82	37.45
MKTF-45	12/4/2020	6949.59	6936.93	6935.08	14.51	12.66	1.85	30.45
MKTF-46	10/29/2019	NA	NA	NA	10.28	ND	NA	21.29
MKTF-46	11/12/2019	NA	NA	NA	10.46	ND	NA	21.29
MKTF-46	12/2/2019	NA	NA	NA	10.70	ND	NA	21.29
MKTF-46	3/5/2020	6957.60	NA	6946.67	10.93	ND	NA	18.00
MKTF-46	6/30/2020	6957.60	NA	6946.52	11.08	ND	NA	18.00
MKTF-46	9/14/2020	6957.60	NA	6947.42	10.18	ND	NA	25.29
MKTF-46	11/10/2020	6957.60	NA	6947.03	10.57	ND	NA	25.29
MKTF-46	12/4/2020	6957.60	NA	6946.83	10.77	ND	NA	21.30
MKTF-47	12/2/2019	NA	NA	NA	9.78	ND	NA	14.30
MKTF-47	3/5/2020	6959.09	NA	6949.20	9.89	ND	NA	14.00
MKTF-47	6/29/2020	6959.09	NA	6949.59	9.50	ND	NA	14.00
MKTF-47	9/15/2020	6959.09	6950.56	6950.55	8.54	8.53	0.01	14.31
MKTF-47	11/10/2020	6959.09	NA	6949.76	9.33	ND	NA	14.31
MKTF-47	12/4/2020	6959.09	6949.51	6949.50	9.59	9.58	0.01	14.31
MKTF-48	12/2/2019	NA	NA	NA	11.85	ND	NA	20.92
MKTF-48	3/3/2020	6961.73	6949.07	6948.91	12.82	12.66	0.16	18.00
MKTF-48	6/29/2020	6961.73	NA	6950.15	11.58	ND	NA	18.00
MKTF-48	9/15/2020	6961.73	6949.88	6949.87	11.86	11.85	0.01	19.91
MKTF-48	11/10/2020	6961.73	6949.33	6949.22	12.51	12.40	0.11	19.91
MKTF-48	12/4/2020	6961.73	6948.96	6948.63	13.10	12.77	0.33	20.94
MKTF-49	12/3/2019	NA	NA	NA	19.90	ND	NA	24.90
MKTF-49	3/4/2020	6946.76	NA	6926.49	20.27	ND	NA	28.00
MKTF-49	6/30/2020	6946.76	NA	6926.11	20.65	ND	NA	28.00
MKTF-49	9/15/2020	6946.76	NA	6926.43	20.33	ND	NA	24.96
MKTF-49	11/10/2020	6946.76	NA	6926.01	20.75	ND	NA	24.96
MKTF-49	12/4/2020	6946.76	NA	6925.95	20.81	ND	NA	24.97
MKTF-50	12/3/2019	NA	NA	NA	15.61	ND	NA	21.65
MKTF-50	3/4/2020	6942.82	NA	6926.95	15.87	ND	NA	26.00
MKTF-50	6/30/2020	6942.82	NA	6926.82	16.00	ND	NA	26.00
MKTF-50	9/15/2020	6942.82	6927.46	6927.45	15.37	15.36	0.01	22.64
MKTF-50	11/10/2020	6942.82	NA	6926.79	16.03	ND	NA	22.64
MKTF-50	12/4/2020	6942.82	NA	6926.65	16.17	ND	NA	21.63
MW-1	9/16/2014	6878.12	NA	6871.01	7.11	ND	NA	130.83
MW-1	8/10/2015	6878.12	NA	6871.22	6.90	ND	NA	130.83
MW-1	9/7/2016	6878.12	NA	6871.11	7.01	ND	NA	130.83
MW-1	9/20/2017	6878.12	NA	6871.10	7.02	ND	NA	130.83
MW-1	8/15/2018	6878.12	NA	6870.37	7.75	ND	NA	130.83
MW-1	12/5/2018	6878.12	NA	6870.76	7.36	ND	NA	130.83
MW-1	8/12/2019	6878.12	NA	6871.18	6.94	ND	NA	130.83
MW-1	9/14/2020	6878.12	NA	6870.40	7.72	ND	NA	135.30

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MW-2	9/16/2014	6880.30	NA	6871.10	9.20	ND	NA	137.48
MW-2	8/10/2015	6880.30	NA	6871.17	9.13	ND	NA	137.48
MW-2	9/7/2016	6880.30	NA	6866.20	14.10	ND	NA	137.48
MW-2	9/20/2017	6880.30	NA	6864.66	15.64	ND	NA	137.48
MW-2	8/15/2018	6880.30	NA	6870.95	9.35	ND	NA	137.48
MW-2	12/5/2018	6880.30	NA	6863.67	16.63	ND	NA	137.48
MW-2	8/13/2019	6880.30	NA	6871.30	9.00	ND	NA	137.48
MW-2	9/14/2020	6880.30	NA	6870.56	9.74	ND	NA	138.20
MW-4	9/17/2014	6881.63	NA	6873.95	7.68	ND	NA	121.72
MW-4	8/10/2015	6881.63	NA	6874.33	7.30	ND	NA	121.72
MW-4	9/7/2016	6881.63	NA	6874.25	7.38	ND	NA	121.72
MW-4	9/21/2017	6881.63	NA	6874.07	7.56	ND	NA	121.72
MW-4	8/15/2018	6881.63	NA	6873.92	7.71	ND	NA	121.72
MW-4	12/5/2018	6881.63	NA	6873.80	7.83	ND	NA	121.72
MW-4	8/13/2019	6881.63	NA	6874.63	7.00	ND	NA	121.72
MW-4	9/14/2020	6881.63	NA	6873.63	8.00	ND	NA	125.90
MW-5	9/17/2014	6882.83	NA	6871.45	11.38	ND	NA	130.83
MW-5	8/10/2015	6882.83	NA	6871.63	11.20	ND	NA	130.83
MW-5	9/7/2016	6882.83	NA	6869.33	13.50	ND	NA	130.83
MW-5	9/11/2017	6882.83	NA	6871.61	11.22	ND	NA	130.83
MW-5	8/15/2018	6882.83	NA	6871.32	11.51	ND	NA	130.83
MW-5	12/6/2018	6882.83	NA	6866.03	16.80	ND	NA	130.83
MW-5	8/14/2019	6882.83	NA	6871.78	11.05	ND	NA	130.83
MW-5	9/14/2020	6882.83	NA	6870.84	11.99	ND	NA	133.00
NAPIS-1	3/10/2014	6913.86	NA	6907.08	6.78	ND	NA	13.53
NAPIS-1	6/5/2014	6913.86	NA	6907.00	6.86	ND	NA	13.53
NAPIS-1	9/11/2014	6913.86	NA	6907.01	6.85	ND	NA	13.53
NAPIS-1	11/11/2014	6913.86	NA	6906.90	6.96	ND	NA	13.53
NAPIS-1	3/10/2015	6913.86	NA	6906.96	6.90	ND	NA	13.53
NAPIS-1	6/2/2015	6913.86	NA	6906.86	7.00	ND	NA	13.53
NAPIS-1	8/10/2015	6913.86	NA	6906.86	7.00	ND	NA	13.53
NAPIS-1	10/28/2015	6913.86	NA	6906.66	7.20	ND	NA	13.53
NAPIS-1	3/1/2016	6913.86	NA	6907.21	6.65	ND	NA	13.53
NAPIS-1	6/7/2016	6913.86	NA	6907.22	6.64	ND	NA	13.53
NAPIS-1	9/1/2016	6913.86	NA	6906.87	6.99	ND	NA	13.53
NAPIS-1	11/14/2016	6913.86	NA	6907.04	6.82	ND	NA	13.53
NAPIS-1	2/21/2017	6913.86	NA	6907.16	6.70	ND	NA	13.53
NAPIS-1	6/2/2017	6913.86	NA	6907.01	6.85	ND	NA	13.53
NAPIS-1	9/5/2017	6913.86	6907.54	6906.68	7.18	6.32	0.86	13.53
NAPIS-1	12/4/2017	6913.86	6907.66	6907.01	6.85	6.20	0.65	13.75
NAPIS-1	2/12/2018	6913.86	6907.71	6905.76	8.10	6.15	1.95	13.53
NAPIS-1	4/25/2018	6913.86	6907.28	6906.04	7.82	6.58	1.24	13.76
NAPIS-1	8/15/2018	6913.86	NA	NA	NA	NA	NA	13.76
NAPIS-1	11/8/2018	6913.86	NA	NA	NA	NA	NA	13.76
NAPIS-1	3/28/2019	6913.86	NA	NA	NA	NA	NA	13.76
NAPIS-1	5/28/2019	6913.86	6906.14	6905.98	7.88	7.72	0.16	13.53
NAPIS-1	8/22/2019	6913.86	6906.41	6906.33	7.53	7.45	0.08	13.53
NAPIS-1	10/21/2019	6913.86	6906.20	6906.00	7.86	7.66	0.20	13.53
NAPIS-1	9/15/2020	6913.86	6907.16	6907.15	6.71	6.70	0.01	13.58
NAPIS-1	11/10/2020	6913.86	6906.67	6906.66	7.20	7.19	0.01	13.58
NAPIS-1	12/7/2020	6913.86	NA	6906.42	7.44	ND	NA	13.76

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NAPIS-2	3/10/2014	6912.65	NA	6904.62	8.03	ND	NA	13.61
NAPIS-2	6/5/2014	6912.65	NA	6904.45	8.20	ND	NA	13.61
NAPIS-2	9/11/2014	6912.65	NA	6904.55	8.10	ND	NA	13.61
NAPIS-2	11/11/2014	6912.65	NA	6904.45	8.20	ND	NA	13.61
NAPIS-2	3/10/2015	6912.65	NA	6904.21	8.44	ND	NA	13.61
NAPIS-2	6/2/2015	6912.65	NA	6904.11	8.54	ND	NA	13.61
NAPIS-2	8/10/2015	6912.65	NA	6904.25	8.40	ND	NA	13.61
NAPIS-2	10/28/2015	6912.65	NA	6904.33	8.32	ND	NA	13.61
NAPIS-2	3/1/2016	6912.65	NA	6905.00	7.65	ND	NA	13.61
NAPIS-2	6/7/2016	6912.65	NA	6906.25	6.40	ND	NA	13.61
NAPIS-2	9/1/2016	6912.65	NA	6903.81	8.84	ND	NA	13.61
NAPIS-2	11/14/2016	6912.65	NA	6904.45	8.20	ND	NA	13.61
NAPIS-2	2/21/2017	6912.65	NA	6904.76	7.89	ND	NA	13.61
NAPIS-2	6/1/2017	6912.65	NA	6904.30	8.35	ND	NA	13.61
NAPIS-2	9/5/2017	6912.65	NA	6904.33	8.32	ND	NA	13.61
NAPIS-2	12/4/2017	6912.65	NA	6904.67	7.98	ND	NA	14.60
NAPIS-2	2/9/2018	6912.65	NA	6904.40	8.25	ND	NA	14.60
NAPIS-2	4/26/2018	6912.65	NA	6904.07	8.58	ND	NA	14.52
NAPIS-2	8/15/2018	6912.65	NA	NA	NA	NA	NA	14.52
NAPIS-2	11/8/2018	6912.65	NA	NA	NA	NA	NA	14.52
NAPIS-2	3/28/2019	6912.65	NA	NA	NA	NA	NA	14.52
NAPIS-2	5/28/2019	6912.65	NA	6903.11	9.54	ND	NA	13.61
NAPIS-2	8/22/2019	6912.65	NA	6903.50	9.15	ND	NA	13.61
NAPIS-2	10/21/2019	6912.65	NA	6903.25	9.40	ND	NA	13.61
NAPIS-2	9/15/2020	6912.65	NA	6904.53	8.12	ND	NA	14.60
NAPIS-2	11/10/2020	6912.65	NA	6904.14	8.51	ND	NA	14.60
NAPIS-2	12/7/2020	6912.65	NA	6903.93	8.72	ND	NA	14.61
NAPIS-3	3/10/2014	6912.76	NA	6903.86	8.90	ND	NA	30.42
NAPIS-3	6/5/2014	6912.76	NA	6903.91	8.85	ND	NA	30.42
NAPIS-3	9/11/2014	6912.76	NA	6904.79	7.97	ND	NA	30.42
NAPIS-3	11/13/2014	6912.76	NA	6903.58	9.18	ND	NA	30.42
NAPIS-3	3/10/2015	6912.76	NA	6903.17	9.59	ND	NA	30.42
NAPIS-3	6/2/2015	6912.76	NA	6903.66	9.10	ND	NA	30.42
NAPIS-3	8/10/2015	6912.76	NA	6904.27	8.49	ND	NA	30.42
NAPIS-3	10/28/2015	6912.76	NA	6903.54	9.22	ND	NA	30.42
NAPIS-3	3/1/2016	6912.76	NA	6904.21	8.55	ND	NA	30.42
NAPIS-3	6/7/2016	6912.76	NA	6905.04	7.72	ND	NA	30.42
NAPIS-3	9/1/2016	6912.76	NA	6903.66	9.10	ND	NA	30.42
NAPIS-3	11/14/2016	6912.76	NA	6903.65	9.11	ND	NA	30.42
NAPIS-3	2/21/2017	6912.76	NA	6903.56	9.20	ND	NA	30.42
NAPIS-3	6/1/2017	6912.76	NA	6902.56	10.20	ND	NA	30.42
NAPIS-3	9/8/2017	6912.76	NA	6903.66	9.10	ND	NA	30.42
NAPIS-3	12/14/2017	6912.76	NA	6903.76	9.00	ND	NA	31.58
NAPIS-3	2/9/2018	6912.76	NA	6903.06	9.70	ND	NA	31.60
NAPIS-3	4/26/2018	6912.76	NA	6903.16	9.60	ND	NA	31.51
NAPIS-3	8/15/2018	6912.76	NA	NA	NA	NA	NA	31.51
NAPIS-3	11/8/2018	6912.76	NA	NA	NA	NA	NA	31.51
NAPIS-3	3/28/2019	6912.76	NA	NA	NA	NA	NA	31.51
NAPIS-3	5/28/2019	6912.76	NA	6902.19	10.57	ND	NA	30.42
NAPIS-3	8/22/2019	6912.76	NA	6902.58	10.18	ND	NA	30.42
NAPIS-3	10/21/2019	6912.76	NA	6902.74	10.02	ND	NA	30.42

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
NAPIS-3	9/15/2020	6912.76	NA	6903.51	9.25	ND	NA	31.50
NAPIS-3	11/10/2020	6912.76	NA	6903.29	9.47	ND	NA	31.50
NAPIS-3	12/7/2020	6912.76	NA	6904.25	8.51	ND	NA	31.50
OAPIS-1	3/10/2014	6916.73	NA	6905.23	11.50	ND	NA	28.30
OAPIS-1	6/5/2014	6916.73	NA	6904.98	11.75	ND	NA	28.30
OAPIS-1	9/12/2014	6916.73	NA	6905.62	11.11	ND	NA	28.30
OAPIS-1	11/11/2014	6916.73	NA	6899.52	17.21	ND	NA	28.30
OAPIS-1	3/10/2015	6916.73	NA	6904.89	11.84	ND	NA	28.30
OAPIS-1	6/2/2015	6916.73	NA	6904.72	12.01	ND	NA	28.30
OAPIS-1	8/10/2015	6916.73	NA	6905.40	11.33	ND	NA	28.30
OAPIS-1	10/29/2015	6916.73	NA	6905.71	11.02	ND	NA	28.30
OAPIS-1	3/1/2016	6916.73	NA	6904.87	11.86	ND	NA	28.30
OAPIS-1	6/7/2016	6916.73	NA	6905.23	11.50	ND	NA	28.30
OAPIS-1	9/1/2016	6916.73	NA	6905.41	11.32	ND	NA	28.30
OAPIS-1	11/14/2016	6916.73	NA	6905.29	11.44	ND	NA	28.30
OAPIS-1	2/21/2017	6916.73	NA	6905.13	11.60	ND	NA	28.30
OAPIS-1	6/1/2017	6916.73	NA	6905.27	11.46	ND	NA	28.30
OAPIS-1	9/5/2017	6916.73	NA	6905.64	11.09	ND	NA	28.30
OAPIS-1	12/4/2017	6916.73	NA	6904.85	11.88	ND	NA	27.78
OAPIS-1	2/9/2018	6916.73	NA	6904.13	12.60	ND	NA	27.78
OAPIS-1	4/26/2018	6916.73	NA	6904.31	12.42	ND	NA	27.75
OAPIS-1	8/15/2018	6916.73	NA	6905.13	11.60	ND	NA	27.86
OAPIS-1	11/19/2018	6916.73	NA	6904.84	11.89	ND	NA	27.78
OAPIS-1	3/28/2019	6916.73	NA	6905.30	11.43	ND	NA	26.00
OAPIS-1	5/8/2019	6916.73	NA	6904.64	12.09	ND	NA	26.00
OAPIS-1	8/22/2019	6916.73	NA	6905.64	11.09	ND	NA	27.86
OAPIS-1	10/21/2019	6916.73	NA	6905.29	11.44	ND	NA	27.78
OAPIS-1	9/15/2020	6916.73	NA	6904.83	11.90	ND	NA	28.00
OAPIS-1	11/10/2020	6916.73	NA	6904.71	12.02	ND	NA	28.00
OAPIS-1	12/7/2020	6916.73	NA	6904.42	12.31	ND	NA	28.00
OW-01	3/7/2014	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	6/3/2014	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	9/11/2014	6866.62	NA	6866.61	0.01	ND	NA	94.55
OW-01	11/10/2014	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	3/9/2015	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	6/3/2015	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	8/12/2015	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	10/28/2015	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	3/3/2016	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	6/6/2016	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	9/6/2016	6866.62	NA	6866.62	0.00	ND	NA	94.55
OW-01	11/15/2016	6866.62	NA	6864.90	1.72	ND	NA	94.55
OW-01	2/27/2017	6866.62	NA	6864.91	1.71	ND	NA	94.55
OW-01	5/31/2017	6866.62	NA	6864.85	1.77	ND	NA	94.55
OW-01	9/6/2017	6866.62	NA	6864.92	1.70	ND	NA	94.55
OW-01	12/8/2017	6866.62	NA	6864.91	1.71	ND	NA	94.55
OW-01	2/27/2018	6866.62	NA	6865.17	1.45	ND	NA	94.55
OW-01	4/25/2018	6866.62	NA	6864.82	1.80	ND	NA	94.54
OW-01	8/14/2018	6866.62	NA	6864.82	1.80	ND	NA	94.55
OW-01	11/7/2018	6866.62	NA	6865.29	1.33	ND	NA	94.55
OW-01	3/27/2019	6866.62	NA	6864.93	1.69	ND	NA	94.55

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-01	5/21/2019	6866.62	NA	6864.89	1.73	ND	NA	94.55
OW-01	8/15/2019	6866.62	NA	6865.25	1.37	ND	NA	94.55
OW-01	10/16/2019	6866.62	NA	6865.17	1.45	ND	NA	94.55
OW-01	9/15/2020	6866.62	NA	6865.17	1.45	ND	NA	99.39
OW-01	12/7/2020	6866.62	NA	6864.87	1.75	ND	NA	99.39
OW-10	3/7/2014	6874.91	NA	6874.91	0.00	ND	NA	60.33
OW-10	6/3/2014	6874.91	NA	6873.46	1.45	ND	NA	60.33
OW-10	9/12/2014	6874.91	NA	6872.58	2.33	ND	NA	60.33
OW-10	11/10/2014	6874.91	NA	6872.11	2.80	ND	NA	60.33
OW-10	3/9/2015	6874.91	NA	6873.95	0.96	ND	NA	60.33
OW-10	6/3/2015	6874.91	NA	6873.91	1.00	ND	NA	60.33
OW-10	8/12/2015	6874.91	NA	6874.53	0.38	ND	NA	60.33
OW-10	10/28/2015	6874.91	NA	6873.44	1.47	ND	NA	60.33
OW-10	3/3/2016	6874.91	NA	6873.49	1.42	ND	NA	60.33
OW-10	6/6/2016	6874.91	NA	6873.69	1.22	ND	NA	60.33
OW-10	9/6/2016	6874.91	NA	6873.21	1.70	ND	NA	60.33
OW-10	11/15/2016	6874.91	NA	6874.37	0.54	ND	NA	60.33
OW-10	2/27/2017	6874.91	NA	6874.35	0.56	ND	NA	60.33
OW-10	5/31/2017	6874.91	NA	6873.84	1.07	ND	NA	60.33
OW-10	9/7/2017	6874.91	NA	6873.03	1.88	ND	NA	60.33
OW-10	12/7/2017	6874.91	NA	6872.66	2.25	ND	NA	60.33
OW-10	2/27/2018	6874.91	NA	6872.93	1.98	ND	NA	60.33
OW-10	4/25/2018	6874.91	NA	6873.05	1.86	ND	NA	60.13
OW-10	8/15/2018	6874.91	NA	6872.50	2.41	ND	NA	60.13
OW-10	11/8/2018	6874.91	NA	6872.41	2.50	ND	NA	60.33
OW-10	3/27/2019	6874.91	NA	6874.91	0.00	ND	NA	60.33
OW-10	5/22/2019	6874.91	NA	6874.91	0.00	ND	NA	60.33
OW-10	8/15/2019	6874.91	NA	6873.89	1.02	ND	NA	60.13
OW-10	10/17/2019	6874.91	NA	6872.58	2.33	ND	NA	60.33
OW-10	9/20/2020	6874.91	NA	6867.21	7.70	ND	NA	66.30
OW-10	10/9/2020	6874.91	NA	6867.21	7.70	ND	NA	66.30
OW-10	12/7/2020	6874.91	NA	6867.30	7.61	ND	NA	66.30
OW-11	9/12/2014	6923.51	NA	6903.40	20.11	ND	NA	65.79
OW-11	8/10/2015	6923.51	NA	6904.21	19.30	ND	NA	65.79
OW-11	9/9/2016	6923.51	NA	6904.72	18.79	ND	NA	65.79
OW-11	9/18/2017	6923.51	NA	6905.43	18.08	ND	NA	65.79
OW-11	8/15/2018	6923.51	NA	6904.31	19.20	ND	NA	65.79
OW-11	8/20/2019	6923.51	NA	6905.81	17.70	ND	NA	65.79
OW-11	9/15/2020	6923.51	NA	6905.00	18.51	ND	NA	65.83
OW-12	9/12/2014	6940.69	NA	6892.91	47.78	ND	NA	128.85
OW-12	8/13/2015	6940.69	NA	6893.27	47.42	ND	NA	128.85
OW-12	9/8/2016	6940.69	NA	6893.46	47.23	ND	NA	128.85
OW-12	9/19/2017	6940.69	NA	6893.95	46.74	ND	NA	128.85
OW-12	8/15/2018	6940.69	NA	6894.19	46.50	ND	NA	128.85
OW-12	9/14/2020	6940.69	NA	6894.24	46.45	ND	NA	131.20
OW-12	11/9/2020	6940.69	NA	6894.20	46.49	ND	NA	131.20
OW-13	3/7/2014	6920.07	NA	6898.30	21.77	ND	NA	99.15
OW-13	6/3/2014	6920.07	NA	6898.12	21.95	ND	NA	99.15
OW-13	9/15/2014	6920.07	NA	6897.46	22.61	ND	NA	99.15
OW-13	11/10/2014	6920.07	NA	6897.62	22.45	ND	NA	99.15
OW-13	3/9/2015	6920.07	NA	6898.15	21.92	ND	NA	99.15

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-13	6/1/2015	6920.07	NA	6898.31	21.76	ND	NA	99.15
OW-13	8/10/2015	6920.07	NA	6897.93	22.14	ND	NA	99.15
OW-13	10/27/2015	6920.07	NA	6897.97	22.10	ND	NA	99.15
OW-13	3/4/2016	6920.07	NA	6898.64	21.43	ND	NA	99.15
OW-13	6/6/2016	6920.07	NA	6898.62	21.45	ND	NA	99.15
OW-13	8/31/2016	6920.07	NA	6898.13	21.94	ND	NA	99.15
OW-13	11/15/2016	6920.07	NA	6898.39	21.68	ND	NA	99.15
OW-13	2/27/2017	6920.07	NA	6898.96	21.11	ND	NA	99.15
OW-13	5/31/2017	6920.07	NA	6898.62	21.45	ND	NA	99.15
OW-13	9/6/2017	6920.07	NA	6898.66	21.41	ND	NA	99.15
OW-13	12/11/2017	6920.07	NA	6899.07	21.00	ND	NA	99.15
OW-13	2/28/2018	6920.07	NA	6899.57	20.50	ND	NA	99.15
OW-13	4/26/2018	6920.07	NA	6899.66	20.41	ND	NA	99.00
OW-13	8/14/2018	6920.07	NA	6899.37	20.70	ND	NA	102.00
OW-13	11/6/2018	6920.07	NA	6899.37	20.70	ND	NA	99.15
OW-13	2/5/2019	6920.07	NA	6899.69	20.38	ND	NA	99.15
OW-13	5/1/2019	6920.07	NA	6900.07	20.00	ND	NA	99.15
OW-13	8/12/2019	6920.07	NA	6899.57	20.50	ND	NA	102.00
OW-13	10/14/2019	6920.07	NA	6899.33	20.74	ND	NA	99.15
OW-13	9/14/2020	6920.07	NA	6899.08	20.99	ND	NA	91.65
OW-13	11/9/2020	6920.07	NA	6899.69	20.38	ND	NA	91.65
OW-13	12/7/2020	6920.07	NA	6899.83	20.24	ND	NA	91.65
OW-14	3/7/2014	6926.65	NA	6902.53	24.12	ND	NA	46.52
OW-14	6/3/2014	6926.65	NA	6902.50	24.15	ND	NA	46.52
OW-14	9/15/2014	6926.65	NA	6902.25	24.40	ND	NA	46.52
OW-14	11/10/2014	6926.65	NA	6902.40	24.25	ND	NA	46.52
OW-14	3/9/2015	6926.65	NA	6902.70	23.95	ND	NA	46.52
OW-14	6/1/2015	6926.65	NA	6902.77	23.88	ND	NA	46.52
OW-14	8/10/2015	6926.65	NA	6902.69	23.96	ND	NA	46.52
OW-14	10/27/2015	6926.65	NA	6902.96	23.69	ND	NA	46.52
OW-14	3/4/2016	6926.65	NA	6903.45	23.20	ND	NA	46.52
OW-14	6/6/2016	6926.65	NA	6903.47	23.18	ND	NA	46.52
OW-14	8/31/2016	6926.65	NA	6903.15	23.50	ND	NA	46.52
OW-14	11/15/2016	6926.65	NA	6903.37	23.28	ND	NA	46.52
OW-14	2/27/2017	6926.65	NA	6903.82	22.83	ND	NA	46.52
OW-14	5/30/2017	6926.65	NA	6903.47	23.18	ND	NA	46.52
OW-14	9/6/2017	6926.65	NA	6904.09	22.56	ND	NA	46.52
OW-14	12/11/2017	6926.65	NA	6904.45	22.20	ND	NA	46.52
OW-14	2/27/2018	6926.65	NA	6904.85	21.80	ND	NA	46.52
OW-14	4/26/2018	6926.65	NA	6904.90	21.75	ND	NA	46.75
OW-14	8/14/2018	6926.65	NA	6904.70	21.95	ND	NA	46.78
OW-14	11/6/2018	6926.65	NA	6904.83	21.82	ND	NA	46.52
OW-14	2/5/2019	6926.65	NA	6905.01	21.64	ND	NA	46.52
OW-14	5/1/2019	6926.65	NA	6905.20	21.45	ND	NA	46.52
OW-14	8/12/2019	6926.65	NA	NA	NA	NA	NA	46.78
OW-14	11/1/2019	6926.65	NA	NA	NA	NA	NA	46.52
OW-14	9/14/2020	6926.65	NA	NA	NA	NA	NA	46.52
OW-14	12/7/2020	6926.65	NA	6902.25	24.40	NA	NA	46.52
OW-29	3/7/2014	6917.00	NA	6898.15	18.85	ND	NA	51.08
OW-29	6/2/2014	6917.00	NA	6898.05	18.95	ND	NA	51.08
OW-29	9/15/2014	6917.00	NA	6897.65	19.35	ND	NA	51.08

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-29	11/11/2014	6917.00	NA	6897.84	19.16	ND	NA	51.08
OW-29	3/9/2015	6917.00	NA	6898.33	18.67	ND	NA	51.08
OW-29	6/1/2015	6917.00	NA	6898.33	18.67	ND	NA	51.08
OW-29	8/10/2015	6917.00	NA	6898.06	18.94	ND	NA	51.08
OW-29	10/27/2015	6917.00	NA	6898.28	18.72	ND	NA	51.08
OW-29	3/4/2016	6917.00	NA	6898.85	18.15	ND	NA	51.08
OW-29	6/6/2016	6917.00	NA	6898.84	18.16	ND	NA	51.08
OW-29	8/31/2016	6917.00	NA	6898.40	18.60	ND	NA	51.08
OW-29	11/15/2016	6917.00	NA	6898.77	18.23	ND	NA	51.08
OW-29	2/27/2017	6917.00	NA	6899.18	17.82	ND	NA	51.08
OW-29	5/30/2017	6917.00	NA	6898.84	18.16	ND	NA	51.08
OW-29	9/6/2017	6917.00	NA	6898.95	18.05	ND	NA	51.08
OW-29	12/11/2017	6917.00	NA	6899.50	17.50	ND	NA	51.08
OW-29	2/27/2018	6917.00	NA	6899.88	17.12	ND	NA	51.08
OW-29	4/26/2018	6917.00	NA	6900.02	16.98	ND	NA	51.90
OW-29	8/14/2018	6917.00	NA	6899.48	17.52	ND	NA	52.40
OW-29	11/6/2018	6917.00	NA	6899.78	17.22	ND	NA	51.08
OW-29	2/5/2019	6917.00	NA	6900.08	16.92	ND	NA	51.08
OW-29	5/1/2019	6917.00	NA	6900.29	16.71	ND	NA	51.08
OW-29	8/12/2019	6917.00	NA	6899.84	17.16	ND	NA	52.40
OW-29	10/14/2019	6917.00	NA	6899.76	17.24	ND	NA	51.08
OW-29	9/14/2020	6917.00	NA	6902.43	14.57	ND	NA	51.05
OW-29	11/9/2020	6917.00	NA	6899.77	17.23	ND	NA	51.05
OW-29	12/7/2020	6917.00	NA	6899.85	17.15	ND	NA	51.05
OW-30	3/7/2014	6924.69	NA	6901.27	23.42	ND	NA	49.90
OW-30	6/3/2014	6924.69	NA	6901.18	23.51	ND	NA	49.90
OW-30	9/17/2014	6924.69	NA	6900.85	23.84	ND	NA	49.90
OW-30	11/11/2014	6924.69	NA	6900.99	23.70	ND	NA	49.90
OW-30	3/9/2015	6924.69	NA	6901.44	23.25	ND	NA	49.90
OW-30	6/1/2015	6924.69	NA	6901.49	23.20	ND	NA	49.90
OW-30	8/10/2015	6924.69	NA	6901.27	23.42	ND	NA	49.90
OW-30	10/27/2015	6924.69	NA	6901.55	23.14	ND	NA	49.90
OW-30	3/8/2016	6924.69	NA	6902.14	22.55	ND	NA	49.90
OW-30	6/6/2016	6924.69	NA	6902.05	22.64	ND	NA	49.90
OW-30	8/31/2016	6924.69	NA	6901.39	23.30	ND	NA	49.90
OW-30	11/14/2016	6924.69	NA	6901.94	22.75	ND	NA	49.90
OW-30	2/27/2017	6924.69	NA	6902.45	22.24	ND	NA	49.90
OW-30	5/31/2017	6924.69	NA	6902.05	22.64	ND	NA	49.90
OW-30	9/6/2017	6924.69	NA	6902.41	22.28	ND	NA	49.90
OW-30	12/12/2017	6924.69	NA	6902.94	21.75	ND	NA	49.90
OW-30	2/28/2018	6924.69	NA	6903.36	21.33	ND	NA	49.90
OW-30	4/26/2018	6924.69	NA	6903.41	21.28	ND	NA	50.20
OW-30	8/15/2018	6924.69	NA	6902.99	21.70	ND	NA	51.40
OW-30	12/3/2018	6924.69	NA	6903.39	21.30	ND	NA	49.90
OW-30	3/27/2019	6924.69	NA	6903.56	21.13	ND	NA	49.90
OW-30	6/5/2019	6924.69	NA	6903.55	21.14	ND	NA	49.90
OW-30	8/12/2019	6924.69	NA	NA	NA	NA	NA	51.40
OW-30	11/1/2019	6924.69	NA	NA	NA	ND	NA	49.90
OW-30	9/15/2020	6924.69	NA	NA	NA	ND	NA	49.90
OW-30	12/7/2020	6924.69	NA	6902.47	22.22	ND	NA	49.90
OW-50	9/15/2014	6914.21	NA	6897.35	16.86	ND	NA	64.00

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-50	8/10/2015	6914.21	NA	6897.74	16.47	ND	NA	64.00
OW-50	9/9/2016	6914.21	NA	6898.02	16.19	ND	NA	64.00
OW-50	9/11/2017	6914.21	NA	6898.61	15.60	ND	NA	64.00
OW-50	8/14/2018	6914.21	NA	6899.09	15.12	ND	NA	65.25
OW-50	11/7/2018	6914.21	NA	6899.01	15.20	ND	NA	64.00
OW-50	3/27/2019	6914.21	NA	6899.81	14.40	ND	NA	64.00
OW-50	5/1/2019	6914.21	NA	6899.82	14.39	ND	NA	64.00
OW-50	8/16/2019	6914.21	NA	6899.47	14.74	ND	NA	64.00
OW-50	10/15/2019	6914.21	NA	6899.29	14.92	ND	NA	64.00
OW-50	9/14/2020	6914.21	NA	6899.10	15.11	ND	NA	39.02
OW-50	11/9/2020	6914.21	NA	6899.34	14.87	ND	NA	39.02
OW-50	12/7/2020	6914.21	NA	6899.49	14.72	ND	NA	39.02
OW-52	9/15/2014	6907.68	NA	6891.88	15.80	ND	NA	77.74
OW-52	8/10/2015	6907.68	NA	6892.19	15.49	ND	NA	77.74
OW-52	9/9/2016	6907.68	NA	6892.40	15.28	ND	NA	77.74
OW-52	9/11/2017	6907.68	NA	6892.83	14.85	ND	NA	77.74
OW-52	8/15/2018	6907.68	NA	6893.16	14.52	ND	NA	79.00
OW-52	11/7/2018	6907.68	NA	6893.24	14.44	ND	NA	77.74
OW-52	3/27/2019	6907.68	NA	6893.71	13.97	ND	NA	77.74
OW-52	5/1/2019	6907.68	NA	6893.94	13.74	ND	NA	77.74
OW-52	8/16/2019	6907.68	NA	6893.47	14.21	ND	NA	77.74
OW-52	10/15/2019	6907.68	NA	6893.28	14.40	ND	NA	77.74
OW-52	9/14/2020	6907.68	NA	6893.12	14.56	ND	NA	40.43
OW-52	10/9/2020	6907.68	NA	6893.16	14.52	ND	NA	40.43
OW-52	12/7/2020	6907.68	NA	6893.26	14.42	ND	NA	40.43
OW-53	3/29/2017	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	6/21/2017	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	9/11/2017	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	12/5/2017	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	2/21/2018	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	4/26/2018	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	8/15/2018	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	11/6/2018	6914.38	NA	Dry	Dry	ND	NA	33.90
OW-53	2/6/2019	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	5/2/2019	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	8/21/2019	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	10/15/2019	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	9/14/2020	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	11/9/2020	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-53	12/7/2020	6914.38	NA	Dry	Dry	ND	NA	33.91
OW-54	3/29/2017	6918.92	NA	6900.48	18.44	ND	NA	31.04
OW-54	6/21/2017	6918.92	NA	6900.29	18.63	ND	NA	31.04
OW-54	9/11/2017	6918.92	NA	6900.22	18.70	ND	NA	31.04
OW-54	12/5/2017	6918.92	NA	6900.65	18.27	ND	NA	31.06
OW-54	2/21/2018	6918.92	NA	6900.87	18.05	ND	NA	30.87
OW-54	4/26/2018	6918.92	NA	6901.09	17.83	ND	NA	29.70
OW-54	8/14/2018	6918.92	NA	6900.69	18.23	ND	NA	29.62
OW-54	11/6/2018	6918.92	NA	6901.02	17.90	ND	NA	31.06
OW-54	2/6/2019	6918.92	NA	6901.34	17.58	ND	NA	31.04
OW-54	5/2/2019	6918.92	NA	6901.40	17.52	ND	NA	31.04
OW-54	8/21/2019	6918.92	NA	6900.92	18.00	ND	NA	29.62

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-54	10/15/2019	6918.92	NA	6900.83	18.09	ND	NA	31.06
OW-54	9/14/2020	6918.92	NA	6900.75	18.17	ND	NA	24.58
OW-54	10/9/2020	6918.92	NA	6901.00	17.92	ND	NA	24.58
OW-54	12/7/2020	6918.92	NA	6901.14	17.78	ND	NA	24.58
OW-55	3/29/2017	6923.25	NA	6904.86	18.39	ND	NA	30.70
OW-55	6/21/2017	6923.25	NA	6904.78	18.47	ND	NA	30.70
OW-55	9/11/2017	6923.25	NA	6904.76	18.49	ND	NA	30.70
OW-55	12/5/2017	6923.25	NA	6905.20	18.05	ND	NA	30.90
OW-55	2/21/2018	6923.25	NA	6905.45	17.80	ND	NA	30.95
OW-55	4/26/2018	6923.25	NA	6905.64	17.61	ND	NA	30.92
OW-55	8/14/2018	6923.25	NA	6905.31	17.94	ND	NA	30.70
OW-55	11/6/2018	6923.25	NA	6905.53	17.72	ND	NA	30.90
OW-55	2/6/2019	6923.25	NA	6905.88	17.37	ND	NA	30.70
OW-55	5/2/2019	6923.25	NA	6905.87	17.38	ND	NA	30.70
OW-55	8/21/2019	6923.25	NA	6905.55	17.70	ND	NA	30.70
OW-55	10/15/2019	6923.25	NA	6905.52	17.73	ND	NA	30.90
OW-55	9/14/2020	6923.25	NA	6905.29	17.96	ND	NA	24.48
OW-55	10/9/2020	6923.25	NA	6905.55	17.70	ND	NA	24.48
OW-55	12/7/2020	6923.25	NA	6905.64	17.61	ND	NA	24.48
OW-56	3/29/2017	6920.18	NA	6907.89	12.29	ND	NA	18.59
OW-56	6/21/2017	6920.18	NA	6906.65	13.53	ND	NA	18.59
OW-56	9/11/2017	6920.18	NA	6905.68	14.50	ND	NA	18.59
OW-56	12/5/2017	6920.18	NA	6906.75	13.43	ND	NA	18.58
OW-56	2/21/2018	6920.18	NA	6907.34	12.84	ND	NA	18.59
OW-56	4/26/2018	6920.18	NA	6907.56	12.62	ND	NA	18.59
OW-56	8/14/2018	6920.18	NA	6906.36	13.82	ND	NA	18.59
OW-56	11/6/2018	6920.18	NA	6906.13	14.05	ND	NA	18.58
OW-56	2/6/2019	6920.18	NA	6907.18	13.00	ND	NA	18.59
OW-56	5/2/2019	6920.18	NA	6907.68	12.50	ND	NA	18.59
OW-56	8/21/2019	6920.18	NA	6906.52	13.66	ND	NA	18.59
OW-56	10/15/2019	6920.18	NA	6905.80	14.38	ND	NA	18.58
OW-56	9/14/2020	6920.18	NA	6905.82	14.36	ND	NA	18.58
OW-56	11/9/2020	6920.18	NA	6905.97	14.21	ND	NA	18.58
OW-56	12/7/2020	6920.18	NA	6906.45	13.73	ND	NA	18.58
OW-57	3/30/2017	6933.10	NA	NA	NA	NA	NA	28.35
OW-57	6/20/2017	6933.10	NA	6912.58	20.52	ND	NA	28.35
OW-57	9/19/2017	6933.10	NA	6912.95	20.15	ND	NA	28.35
OW-57	12/5/2017	6933.10	NA	6912.99	20.11	ND	NA	28.35
OW-57	2/19/2018	6933.10	NA	6913.22	19.88	ND	NA	28.35
OW-57	4/25/2018	6933.10	NA	6913.08	20.02	ND	NA	28.06
OW-57	8/15/2018	6933.10	NA	6912.94	20.16	ND	NA	28.07
OW-57	11/29/2018	6933.10	NA	6912.80	20.30	ND	NA	28.35
OW-57	2/19/2019	6933.10	NA	6912.81	20.29	ND	NA	28.10
OW-57	5/15/2019	6933.10	NA	6913.08	20.02	ND	NA	28.10
OW-57	8/20/2019	6933.10	NA	6913.32	19.78	ND	NA	28.07
OW-57	11/4/2019	6933.10	NA	6913.13	19.97	ND	NA	28.35
OW-57	9/14/2020	6933.10	NA	6912.60	20.50	ND	NA	28.09
OW-57	11/9/2020	6933.10	NA	6912.57	20.53	ND	NA	28.09
OW-57	12/7/2020	6933.10	NA	6912.46	20.64	ND	NA	28.39
OW-58	3/29/2017	6934.50	NA	6908.50	26.00	ND	NA	47.55
OW-58	6/21/2017	6934.50	NA	6909.36	25.14	ND	NA	47.55

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-58	9/19/2017	6934.50	NA	6909.46	25.04	ND	NA	47.55
OW-58	12/6/2017	6934.50	NA	6909.83	24.67	ND	NA	47.50
OW-58	2/20/2018	6934.50	NA	6909.98	24.52	ND	NA	47.62
OW-58	4/25/2018	6934.50	NA	6910.25	24.25	ND	NA	47.50
OW-58	8/16/2018	6934.50	NA	6910.02	24.48	ND	NA	47.49
OW-58	11/29/2018	6934.50	NA	6910.23	24.27	ND	NA	47.50
OW-58	3/28/2019	6934.50	NA	6910.22	24.28	ND	NA	47.30
OW-58	6/5/2019	6934.50	NA	6910.41	24.09	ND	NA	47.30
OW-58	8/20/2019	6934.50	NA	6910.50	24.00	ND	NA	47.49
OW-58	11/18/2019	6934.50	NA	6910.51	23.99	ND	NA	47.50
OW-58	9/14/2020	6934.50	NA	6910.95	23.55	ND	NA	48.00
OW-58	11/9/2020	6934.50	NA	6911.19	23.31	ND	NA	48.00
OW-58	12/8/2020	6934.50	NA	6910.18	24.32	ND	NA	47.95
OW-58A	9/15/2020	6935.88	NA	6909.01	26.87	ND	NA	36.00
OW-58A	11/9/2020	6935.88	NA	6911.57	24.31	ND	NA	36.91
OW-58A	12/8/2020	6935.88	NA	6909.17	26.71	ND	NA	36.38
OW-59	9/21/2017	6889.73	NA	6865.43	24.30	ND	NA	38.30
OW-59	12/5/2017	6889.73	NA	6865.43	24.30	ND	NA	38.50
OW-59	2/21/2018	6889.73	NA	6865.73	24.00	ND	NA	38.55
OW-59	4/26/2018	6889.73	NA	6865.68	24.05	ND	NA	38.48
OW-59	8/14/2018	6889.73	NA	6865.60	24.13	ND	NA	38.52
OW-59	11/6/2018	6889.73	NA	6865.83	23.90	ND	NA	38.50
OW-59	2/13/2019	6889.73	NA	6865.83	23.90	ND	NA	38.30
OW-59	5/2/2019	6889.73	NA	6865.93	23.80	ND	NA	38.30
OW-59	8/21/2019	6889.73	NA	6865.71	24.02	ND	NA	38.52
OW-59	10/15/2019	6889.73	NA	6865.62	24.11	ND	NA	38.50
OW-59	9/14/2020	6889.73	NA	6865.67	24.06	ND	NA	38.52
OW-59	12/7/2020	6889.73	NA	6865.82	23.91	ND	NA	38.55
OW-60	9/21/2017	6893.51	NA	6877.06	16.45	ND	NA	45.55
OW-60	12/5/2017	6893.51	NA	6877.11	16.40	ND	NA	45.70
OW-60	2/21/2018	6893.51	NA	6877.25	16.26	ND	NA	46.06
OW-60	4/26/2018	6893.51	NA	6876.99	16.52	ND	NA	46.15
OW-60	8/14/2018	6893.51	NA	6876.99	16.52	ND	NA	46.42
OW-60	11/6/2018	6893.51	NA	6877.26	16.25	ND	NA	45.70
OW-60	2/13/2019	6893.51	NA	6877.08	16.43	ND	NA	45.50
OW-60	5/2/2019	6893.51	NA	6876.96	16.55	ND	NA	45.50
OW-60	8/21/2019	6893.51	NA	6876.98	16.53	ND	NA	46.42
OW-60	10/15/2019	6893.51	NA	6877.10	16.41	ND	NA	45.70
OW-60	9/14/2020	6893.51	NA	6876.94	16.57	ND	NA	45.70
OW-60	11/9/2020	6893.51	NA	6877.16	16.35	ND	NA	45.70
OW-60	12/7/2020	6893.51	NA	6876.96	16.55	ND	NA	45.70
OW-61	3/21/2018	NA	NA	NA	16.80	16.71	0.09	31.68
OW-61	4/24/2018	NA	NA	NA	18.04	17.22	0.82	31.67
OW-61	8/16/2018	NA	NA	NA	22.10	17.40	4.70	31.70
OW-61	11/29/2018	NA	NA	NA	22.00	17.95	4.05	32.00
OW-61	2/19/2019	NA	NA	NA	22.09	18.00	4.09	32.00
OW-61	5/15/2019	NA	NA	NA	21.13	17.62	3.51	32.00
OW-61	8/20/2019	NA	NA	NA	20.15	17.42	2.73	31.70
OW-61	11/4/2019	NA	NA	NA	20.63	17.54	3.09	32.00
OW-61	9/15/2020	6963.57	6946.69	6944.17	19.40	16.88	2.52	31.85
OW-61	11/9/2020	6963.57	6945.35	6943.99	19.58	18.22	1.36	31.85

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
OW-61	12/8/2020	6963.57	6945.17	6943.27	20.30	18.40	1.90	31.33
OW-62	3/21/2018	6937.36	NA	6914.43	22.93	ND	NA	31.57
OW-62	4/24/2018	6937.36	NA	6914.22	23.14	ND	NA	31.58
OW-62	8/15/2018	6937.36	NA	6913.66	23.70	ND	NA	31.59
OW-62	11/29/2018	6937.36	NA	6913.37	23.99	ND	NA	31.59
OW-62	2/19/2019	6937.36	6913.61	6912.41	24.95	23.75	1.20	31.47
OW-62	5/15/2019	6937.36	6913.96	6913.36	24.00	23.40	0.60	31.47
OW-62	8/20/2019	6937.36	6913.50	6913.07	24.29	23.86	0.43	31.47
OW-62	11/18/2019	6937.36	6913.64	6913.02	24.34	23.72	0.62	31.47
OW-62	9/15/2020	6937.36	6913.74	6913.49	23.87	23.62	0.25	32.05
OW-62	11/9/2020	6937.36	6913.66	6913.36	24.00	23.70	0.30	32.05
OW-62	12/8/2020	6937.36	6913.67	6913.38	23.98	23.69	0.29	31.66
OW-63	3/21/2018	NA	NA	NA	20.19	ND	NA	32.18
OW-63	4/24/2018	NA	NA	NA	20.33	ND	NA	32.18
OW-63	8/16/2018	NA	NA	NA	20.60	ND	NA	32.20
OW-63	11/29/2018	NA	NA	NA	20.95	ND	NA	32.00
OW-63	2/19/2019	NA	NA	NA	20.74	ND	NA	32.00
OW-63	5/15/2019	NA	NA	NA	20.35	ND	NA	32.00
OW-63	8/19/2019	NA	NA	NA	20.12	ND	NA	32.20
OW-63	11/18/2019	NA	NA	NA	20.30	ND	NA	32.00
OW-63	9/14/2020	6935.06	NA	6914.33	20.73	ND	NA	32.05
OW-63	11/9/2020	6935.06	NA	6914.21	20.85	ND	NA	32.05
OW-63	12/8/2020	6935.06	NA	6914.09	20.97	ND	NA	32.22
OW-64	3/21/2018	NA	NA	NA	7.72	ND	NA	27.62
OW-64	4/24/2018	NA	NA	NA	7.85	ND	NA	27.63
OW-64	8/16/2018	NA	NA	NA	7.51	ND	NA	27.35
OW-64	11/29/2018	NA	NA	NA	8.11	8.06	0.05	27.35
OW-64	2/19/2019	NA	NA	NA	7.02	7.00	0.02	27.63
OW-64	5/15/2019	NA	NA	NA	6.83	ND	NA	27.63
OW-64	8/19/2019	NA	NA	NA	7.10	ND	NA	27.35
OW-64	11/18/2019	NA	NA	NA	8.40	ND	NA	27.35
OW-64	9/14/2020	6947.40	NA	6939.45	7.95	ND	NA	27.35
OW-64	11/9/2020	6947.40	NA	6939.22	8.18	ND	NA	27.35
OW-64	12/7/2020	6947.40	NA	6939.14	8.26	ND	NA	27.35
OW-65	3/21/2018	NA	NA	NA	23.60	23.40	0.20	41.66
OW-65	4/24/2018	NA	NA	NA	26.35	23.61	2.74	41.65
OW-65	8/16/2018	NA	NA	NA	26.64	24.96	1.68	41.66
OW-65	11/29/2018	NA	NA	NA	31.80	24.05	7.75	40.00
OW-65	2/19/2019	NA	NA	NA	31.51	22.24	9.27	40.00
OW-65	5/15/2019	NA	NA	NA	32.21	23.47	8.74	40.00
OW-65	8/20/2019	NA	NA	NA	31.15	21.97	9.18	41.66
OW-65	9/14/2020	6954.05	6929.35	6923.29	30.76	24.70	6.06	42.80
OW-65	11/9/2020	6954.05	6929.00	6921.70	32.35	25.05	7.30	42.80
OW-65	12/8/2020	6954.05	6928.26	6922.10	31.95	25.79	6.16	42.50
RW-1	3/14/2014	6946.06	6917.95	6914.41	31.65	28.11	3.54	43.04
RW-1	6/9/2014	6946.06	6918.01	6913.00	33.06	28.05	5.01	43.04
RW-1	9/18/2014	6946.06	6917.75	NA	NA	28.31	NA	43.04
RW-1	11/13/2014	6946.06	6917.91	6913.02	33.04	28.15	4.89	43.04
RW-1	3/23/2015	6946.06	6917.96	6913.26	32.80	28.10	4.70	43.04
RW-1	6/9/2015	6946.06	6918.36	6913.96	32.10	27.70	4.40	43.04
RW-1	8/23/2015	6946.06	6917.98	6916.04	30.02	28.08	1.94	43.04

APPENDIX A. FLUID LEVEL MEASUREMENTS
MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION, GALLUP, NEW MEXICO

Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
RW-1	10/29/2015	6946.06	6918.41	6915.96	30.10	27.65	2.45	43.04
RW-1	3/4/2016	6946.06	6918.01	6915.51	30.55	28.05	2.50	43.04
RW-1	6/8/2016	6946.06	6918.08	6914.26	31.80	27.98	3.82	43.04
RW-1	9/13/2016	6946.06	6918.16	6914.02	32.04	27.90	4.14	43.04
RW-1	11/16/2016	6946.06	6918.26	6915.16	30.90	27.80	3.10	43.04
RW-1	3/16/2017	6946.06	6919.01	6915.51	30.55	27.05	3.50	43.04
RW-1	6/20/2017	6946.06	6919.29	6917.64	28.42	26.77	1.65	43.04
RW-1	9/19/2017	6946.06	6919.54	6918.46	27.60	26.52	1.08	43.04
RW-1	12/12/2017	6946.06	6919.56	6918.56	27.50	26.50	1.00	43.04
RW-1	2/13/2018	6946.06	6919.12	6918.84	27.22	26.94	0.28	43.04
RW-1	4/25/2018	6946.06	6919.12	6918.85	27.21	26.94	0.27	43.35
RW-1	8/16/2018	6946.06	6918.62	6918.36	27.70	27.44	0.26	43.45
RW-1	11/7/2018	6946.06	NA	NA	NA	NA	NA	43.45
RW-1	3/28/2019	6946.06	NA	NA	NA	NA	NA	43.45
RW-1	5/8/2019	6946.06	NA	NA	NA	NA	NA	43.45
RW-1	8/16/2019	6946.06	NA	NA	NA	NA	NA	43.45
RW-1	11/1/2019	6946.06	NA	NA	NA	NA	NA	43.45
RW-1	9/19/2020	6946.06	6917.99	6915.86	30.20	28.07	2.13	43.45
RW-1	11/10/2020	6946.06	6916.56	6915.73	30.33	29.50	0.83	43.45
RW-1	12/8/2020	6946.06	6916.56	6915.73	30.33	29.50	0.83	43.45
RW-2	3/17/2014	6928.53	NA	6903.94	24.59	ND	NA	39.80
RW-2	6/9/2014	6928.53	NA	6904.74	23.79	ND	NA	39.80
RW-2	9/18/2014	6928.53	NA	6904.58	23.95	ND	NA	39.80
RW-2	11/13/2014	6928.53	NA	6904.63	23.90	ND	NA	39.80
RW-2	3/23/2015	6928.53	NA	6905.01	23.52	ND	NA	39.80
RW-2	6/9/2015	6928.53	NA	6905.51	23.02	ND	NA	39.80
RW-2	8/23/2015	6928.53	NA	6905.16	23.37	ND	NA	39.80
RW-2	10/29/2015	6928.53	NA	6905.73	22.80	ND	NA	39.80
RW-2	3/4/2016	6928.53	NA	6906.08	22.45	ND	NA	39.80
RW-2	6/8/2016	6928.53	NA	6906.22	22.31	ND	NA	39.80
RW-2	9/13/2016	6928.53	NA	6906.06	22.47	ND	NA	39.80
RW-2	11/16/2016	6928.53	NA	6906.31	22.22	ND	NA	39.80
RW-2	3/16/2017	6928.53	NA	6906.88	21.65	ND	NA	39.80
RW-2	6/20/2017	6928.53	NA	6907.34	21.19	ND	NA	39.80
RW-2	9/19/2017	6928.53	NA	6907.82	20.71	ND	NA	39.80
RW-2	12/5/2017	6928.53	NA	6908.19	20.34	ND	NA	40.00
RW-2	2/19/2018	6928.53	NA	6908.53	20.00	ND	NA	40.00
RW-2	4/25/2018	6928.53	NA	6908.50	20.03	ND	NA	39.99
RW-2	8/16/2018	6928.53	NA	6908.43	20.10	ND	NA	40.00
RW-2	11/7/2018	6928.53	NA	NA	NA	NA	NA	40.00
RW-2	3/28/2019	6928.53	NA	NA	NA	NA	NA	40.00
RW-2	5/8/2019	6928.53	NA	NA	NA	NA	NA	40.00
RW-2	8/16/2019	6928.53	NA	NA	NA	NA	NA	40.00
RW-2	11/1/2019	6928.53	NA	NA	NA	NA	NA	40.00
RW-2	9/19/2020	6928.53	6906.43	6906.30	22.23	22.10	0.13	40.00
RW-2	11/9/2020	6928.53	6906.44	6906.25	22.28	22.09	0.19	40.00
RW-2	12/8/2020	6928.53	6906.33	6906.15	22.38	22.20	0.18	40.00
RW-5	3/14/2014	6943.57	NA	6915.65	27.92	ND	NA	39.59
RW-5	6/9/2014	6943.57	NA	6914.77	28.80	ND	NA	39.59
RW-5	9/18/2014	6943.57	NA	6914.76	28.81	ND	NA	39.59
RW-5	11/13/2014	6943.57	NA	6914.87	28.70	ND	NA	39.59

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RW-5	3/23/2015	6943.57	NA	6914.47	29.10	ND	NA	39.59
RW-5	6/9/2015	6943.57	NA	6914.77	28.80	ND	NA	39.59
RW-5	8/23/2015	6943.57	NA	6914.49	29.08	ND	NA	39.59
RW-5	10/29/2015	6943.57	NA	6915.60	27.97	ND	NA	39.59
RW-5	3/4/2016	6943.57	NA	6915.35	28.22	ND	NA	39.59
RW-5	6/7/2016	6943.57	NA	6915.35	28.22	ND	NA	39.59
RW-5	9/13/2016	6943.57	NA	6915.87	27.70	ND	NA	39.59
RW-5	11/16/2016	6943.57	NA	6916.17	27.40	ND	NA	39.59
RW-5	3/16/2017	6943.57	NA	6916.04	27.53	ND	NA	39.59
RW-5	6/20/2017	6943.57	6918.27	6910.27	33.30	25.30	8.00	39.59
RW-5	9/19/2017	6943.57	6918.11	6911.92	31.65	25.46	6.19	39.59
RW-5	12/12/2017	6943.57	6918.82	6909.57	34.00	24.75	9.25	39.59
RW-5	2/9/2018	6943.57	6918.07	6909.97	33.60	25.50	8.10	39.59
RW-5	4/25/2018	6943.57	6916.95	6911.23	32.34	26.62	5.72	39.59
RW-5	8/16/2018	6943.57	6916.37	6910.99	32.58	27.20	5.38	39.51
RW-5	11/7/2018	6943.57	NA	NA	NA	NA	NA	39.51
RW-5	3/28/2019	6943.57	NA	NA	NA	NA	NA	39.51
RW-5	5/8/2019	6943.57	NA	NA	NA	NA	NA	39.51
RW-5	8/16/2019	6943.57	NA	NA	NA	NA	NA	39.51
RW-5	11/1/2019	6943.57	NA	NA	NA	NA	NA	39.51
RW-5	9/19/2020	6943.57	6913.98	6910.76	32.81	29.59	3.22	39.51
RW-5	11/9/2020	6943.57	6913.71	6910.54	33.03	29.86	3.17	39.51
RW-5	12/8/2020	6943.57	6910.42	6904.06	39.51	33.15	6.36	39.51
RW-6	3/17/2014	6944.01	NA	6915.97	28.04	ND	NA	40.90
RW-6	6/23/2014	6944.01	NA	6915.16	28.85	ND	NA	40.90
RW-6	9/18/2014	6944.01	NA	6915.12	28.89	ND	NA	40.90
RW-6	11/13/2014	6944.01	NA	6915.18	28.83	ND	NA	40.90
RW-6	3/23/2015	6944.01	NA	6914.83	29.18	ND	NA	40.90
RW-6	6/9/2015	6944.01	NA	6915.33	28.68	ND	NA	40.90
RW-6	8/23/2015	6944.01	NA	6914.95	29.06	ND	NA	40.90
RW-6	10/29/2015	6944.01	NA	6916.04	27.97	ND	NA	40.90
RW-6	3/4/2016	6944.01	NA	6915.76	28.25	ND	NA	40.90
RW-6	6/7/2016	6944.01	NA	6915.77	28.24	ND	NA	40.90
RW-6	9/13/2016	6944.01	NA	6916.02	27.99	ND	NA	40.90
RW-6	11/16/2016	6944.01	NA	6916.29	27.72	ND	NA	40.90
RW-6	3/16/2017	6944.01	NA	6916.44	27.57	ND	NA	40.90
RW-6	6/20/2017	6944.01	6918.51	6910.39	33.62	25.50	8.12	40.90
RW-6	9/19/2017	6944.01	6918.12	6913.04	30.97	25.89	5.08	40.90
RW-6	12/12/2017	6944.01	6919.18	6910.16	33.85	24.83	9.02	40.90
RW-6	2/9/2018	6944.01	6918.36	6910.96	33.05	25.65	7.40	40.90
RW-6	4/25/2018	6944.01	6917.08	6912.32	31.69	26.93	4.76	40.83
RW-6	8/16/2018	6944.01	6916.58	6912.23	31.78	27.43	4.35	40.85
RW-6	11/7/2018	6944.01	NA	NA	NA	NA	NA	40.85
RW-6	3/28/2019	6944.01	NA	NA	NA	NA	NA	40.85
RW-6	5/8/2019	6944.01	NA	NA	NA	NA	NA	40.85
RW-6	8/16/2019	6944.01	NA	NA	NA	NA	NA	40.85
RW-6	9/19/2020	6944.01	6914.29	6911.37	32.64	29.72	2.92	40.85
RW-6	11/9/2020	6944.01	6914.03	6910.96	33.05	29.98	3.07	40.85
RW-6	12/8/2020	6944.01	6913.83	6910.70	33.31	30.18	3.13	40.85
SMW-2	9/11/2014	6883.97	NA	6858.87	25.10	ND	NA	52.80
SMW-2	8/10/2015	6883.97	NA	6859.09	24.88	ND	NA	52.80

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SMW-2	9/9/2016	6883.97	NA	6859.13	24.84	ND	NA	52.80
SMW-2	9/11/2017	6883.97	NA	6859.18	24.79	ND	NA	52.80
SMW-2	8/15/2018	6883.97	NA	6859.48	24.49	ND	NA	52.80
SMW-2	8/19/2019	6883.97	NA	6858.67	25.30	ND	NA	52.80
SMW-2	9/14/2020	6883.97	NA	6859.27	24.70	ND	NA	53.11
SMW-4	9/11/2014	6879.52	NA	6850.42	29.10	ND	NA	69.68
SMW-4	8/10/2015	6879.52	NA	6850.20	29.32	ND	NA	69.68
SMW-4	9/6/2016	6879.52	NA	6850.52	29.00	ND	NA	69.68
SMW-4	9/11/2017	6879.52	NA	6850.19	29.33	ND	NA	69.68
SMW-4	8/15/2018	6879.52	NA	6850.48	29.04	ND	NA	69.68
SMW-4	12/6/2018	6879.52	NA	6850.27	29.25	ND	NA	69.68
SMW-4	8/13/2019	6879.52	NA	6850.42	29.10	ND	NA	69.68
SMW-4	9/14/2020	6879.52	NA	6850.37	29.15	ND	NA	62.90
STP1-NW	3/10/2015	6904.47	NA	6883.73	20.74	ND	NA	50.00
STP1-NW	6/2/2015	6904.47	NA	6883.75	20.72	ND	NA	50.00
STP1-NW	8/11/2015	6904.47	NA	6883.68	20.79	ND	NA	50.00
STP1-NW	10/29/2015	6904.47	NA	6883.87	20.60	ND	NA	50.00
STP1-NW	3/1/2016	6904.47	NA	6883.92	20.55	ND	NA	50.00
STP1-NW	6/7/2016	6904.47	NA	6883.58	20.89	ND	NA	50.00
STP1-NW	9/9/2016	6904.47	NA	6883.27	21.20	ND	NA	50.00
STP1-NW	11/14/2016	6904.47	NA	6883.45	21.02	ND	NA	50.00
STP1-NW	2/21/2017	6904.47	NA	6884.00	20.47	ND	NA	50.00
STP1-NW	6/2/2017	6904.47	NA	6883.81	20.66	ND	NA	50.00
STP1-NW	9/5/2017	6904.47	NA	6883.66	20.81	ND	NA	50.00
STP1-NW	12/4/2017	6904.47	NA	6883.92	20.55	ND	NA	49.74
STP1-NW	2/9/2018	6904.47	NA	6883.92	20.55	ND	NA	49.73
STP1-NW	4/26/2018	6904.47	NA	6883.83	20.64	ND	NA	49.65
STP1-NW	8/15/2018	6904.47	NA	6883.55	20.92	ND	NA	49.78
STP1-NW	11/19/2018	6904.47	NA	NA	NA	NA	NA	49.78
STP1-NW	2/13/2019	6904.47	NA	6884.12	20.35	ND	NA	50.00
STP1-NW	5/8/2019	6904.47	NA	6884.93	19.54	ND	NA	50.00
STP1-NW	8/21/2019	6904.47	NA	6883.68	20.79	ND	NA	50.00
STP1-NW	10/22/2019	6904.47	NA	6883.71	20.76	ND	NA	50.00
STP1-NW	12/8/2020	6904.47	NA	6883.69	20.78	ND	NA	50.28
STP1-SW	3/10/2015	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	6/2/2015	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	8/11/2015	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	10/29/2015	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	3/8/2016	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	6/7/2016	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	9/9/2016	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	11/14/2016	6912.38	NA	Dry	Dry	ND	NA	29.10
STP1-SW	2/21/2017	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	6/2/2017	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	9/5/2017	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	12/4/2017	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	2/9/2018	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	4/26/2018	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	8/15/2018	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	11/19/2018	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	2/13/2019	6912.38	NA	NA	NA	NA	NA	29.10

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Location	Date Measured	Measuring Point Elevation (ft amsl)	Product Surface Elevation (ft amsl)	Water Surface Elevation (ft amsl)	Depth To Water (ft)	Depth To Product (ft)	Product Thickness (ft)	Total Depth (ft)
STP1-SW	5/8/2019	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	8/21/2019	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	10/22/2019	6912.38	NA	NA	NA	NA	NA	29.10
STP1-SW	12/8/2020	6912.38	NA	6883.15	29.23	NA	NA	29.25

Notes:
amsl = above mean sea level
ft = feet
NA = Not applicable
ND = Not detected

Appendix B – LIF/HP Methods

APPENDIX B. LIF/HP TECHNOLOGY
LIF/HP INVESTIGATION REPORT
GALLUP REFINERY, GALLUP, NEW MEXICO

1.0 Laser-Induced Fluorescence

Dakota Technologies, LLC, describes LIF technology as a direct optical sensing tool that uses laser light to cause certain polycyclic aromatic hydrocarbons (PAHs) found in petroleum derived SPH to fluoresce (Dakota 2021). The UVOST® is housed in a shock-protected optical compartment attached to the end of a DP probe string. Fiber optic cable, pre-strung in the probe rods, continuously transmits fluorescence data back to the rig-mounted computer, providing a real time log of fluorescence data points at sub-inch intervals. The Optical Screening Tool computer software transforms the fluorescence data into multi-wavelength waveforms that are specific to the types of PAHs present in a particular SPH mixture. LIF response intensity is influenced by the quantity of hydrocarbons present and the waveform pattern is a function of the relative proportions of the PAHs present. The LIF response is compared to that of a known reference standard and is presented as percent of the reference emitter (% RE). Direct-push drilling application of LIF provides vertical high-resolution data on SPH distribution in the subsurface. UVOST® signal responses correlate to free phase and residual SPH only. Vapor, sorbed, and dissolved hydrocarbon phases are invisible to the UVOST® system.

The UVOST® LIF log displays total signal logs consisting of four wavelength channels and can callout individual waveforms, a wavelength "fingerprint" display, to aid in identification and depth specific relative SPH quantities. The LIF data log displays depth on the vertical axis and fluorescence signal intensity on the horizontal axis. The signal intensity in % RE is based on a proprietary, calibrated reference emitter, which is a known fluorescence and not a specific petroleum hydrocarbon concentration. In general, the subsurface-SPH instrument responses depend on the SPH properties (e.g., quantity and type) and subsurface soil properties. However, the signal response is not directly correlated to whether a SPH is mobile or to a specific SPH recoverability. In this sense, a UVOST® log provides a semi-quantitative representation of the SPH saturation magnitude and reveals the SPH-impacted soil depth and breadth (Dakota 2021).

2.0 Hydraulic Profiling Tool

For this investigation an HP tool was coupled with the LIF tool. The HP tool provides formation permeability data through water injection pressure measurement as the tool is advanced into the subsurface (Geoprobe 2013). The LIF/HP probe is advanced into unconsolidated soils to assess centimeter-scale subsurface permeability. As the probe is pushed through the soil, water is injected into the soil column at a controlled rate. Total injection pressure is measured by a transducer while the injection flow rate is measured (McCall 2011).

The HP tool measures downhole hydraulic pressure (P Dwn), in pounds per square inch (psi), in response to the constant pumping rate of water into the saturated formation. Flow rate (Q) in milliliters per minute (mL/min) is the rate at which water is pumped out of the HP tool probe port. Normally, water is pumped out at a constant Q of 60 mL/min. A change in Q (usually accompanied by an inverse change in P Dwn) is an indicator of soil hydraulic properties. An estimated hydraulic conductivity (K) in feet per day (ft/d) can be internally calculated utilizing pressure and flow data in conjunction with location

specific dissipation test(s). If a dissipation test is performed below the water table and the test successfully stabilizes, the result can be corrected to an absolute hydrostatic value, from which a potentiometric surface (water table) can be calculated.

The estimated K (ft/d) is calculated using the equation:

$$K = \ln(Q/P')*20.0 + 7.0$$

where: P'= downhole pressure in psi – (0.433 (psi/ft) * depth below water table (ft)) – atmospheric pressure (psi)

0.433 psi/ft = hydrostatic pressure gradient

Q = flow rate (mL/min).

Vadose zone K values are reported as estimates of the varying dry soil permeability. These values maintain qualitative value and may lend insight into vadose zone preferential pathways (Dakota 2021).

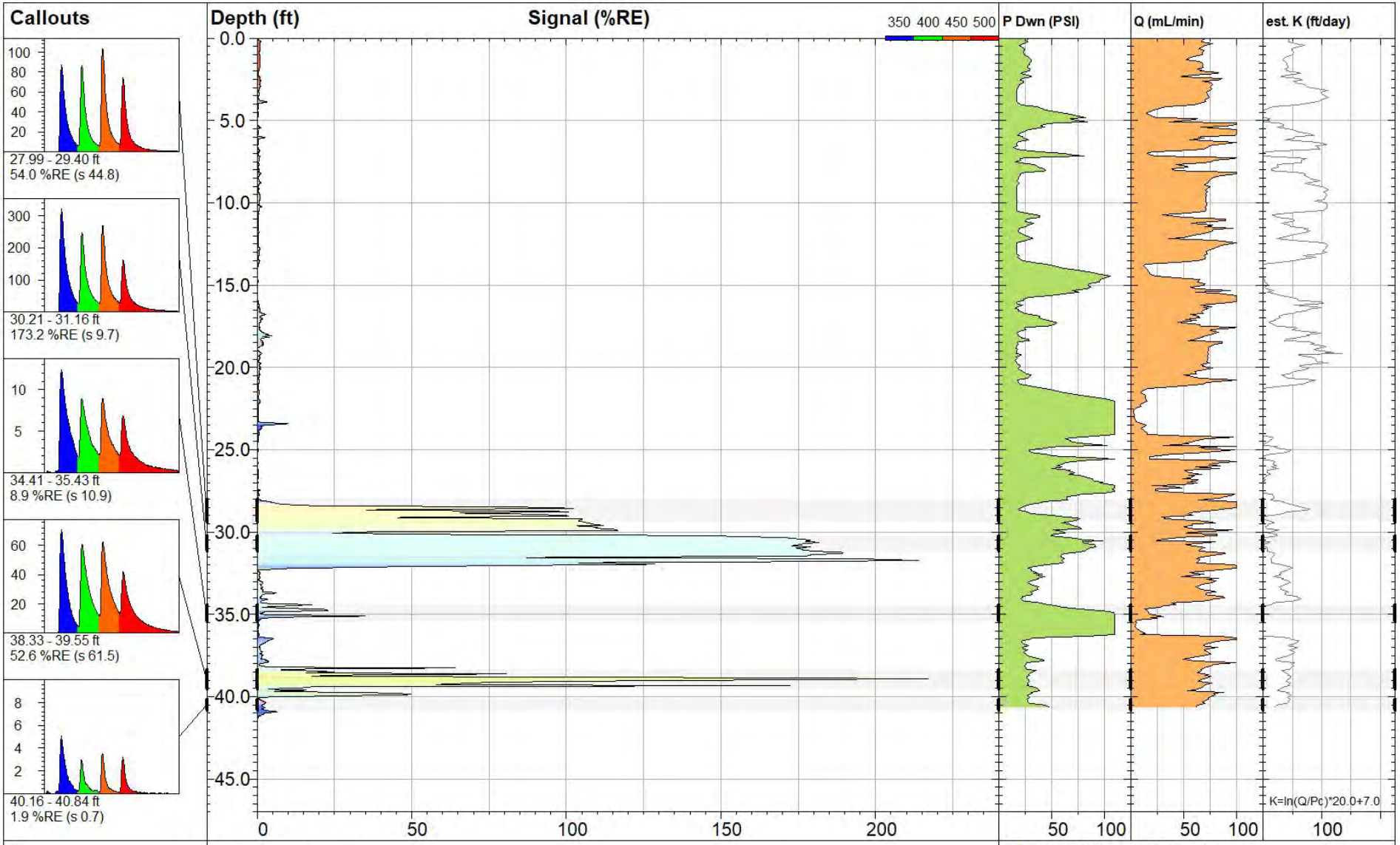
3.0 Electrical Conductivity Tool

For this investigation an EC tool was coupled with the LIF tool. The EC tool provides formation conductivity data. The electrical conductivity of unconsolidated materials is a function of the moisture content of the material and the con-ducting properties of the pore fluids and sediments. In the saturated zone, where variations in moisture content are small, fluid and matrix properties are the major factors. In formations where variations in ground water chemistry are small, differences in sediment size and type are the dominant control on electrical conductivity (Schulmeister, et al. 2003).

The electrical conductivity associated with sedimentary materials varies with particle size and mineral species. Silt-and sand-sized particles of covalently bonded minerals, such as quartz, mica, and feldspar, are generally nonconductive.

For this reason, electrical conductivity in sand and gravel aquifers primarily reflects variations in concentrations of dissolved constituents. Clay-sized particles, such as phyllosilicates, humic substances, and iron and manganese oxides and oxyhydroxides, tend to be highly conductive due to their extremely small size, relatively high surface area per unit volume, and charge characteristics. Thus, in formations where clay-sized particles are present, both lateral and vertical variations in lithology may be assessed using EC logs (Schulmeister, et al. 2003).

Appendix C – LIF/HP Logs



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EB-LIF-21

UVOST® By Dakota
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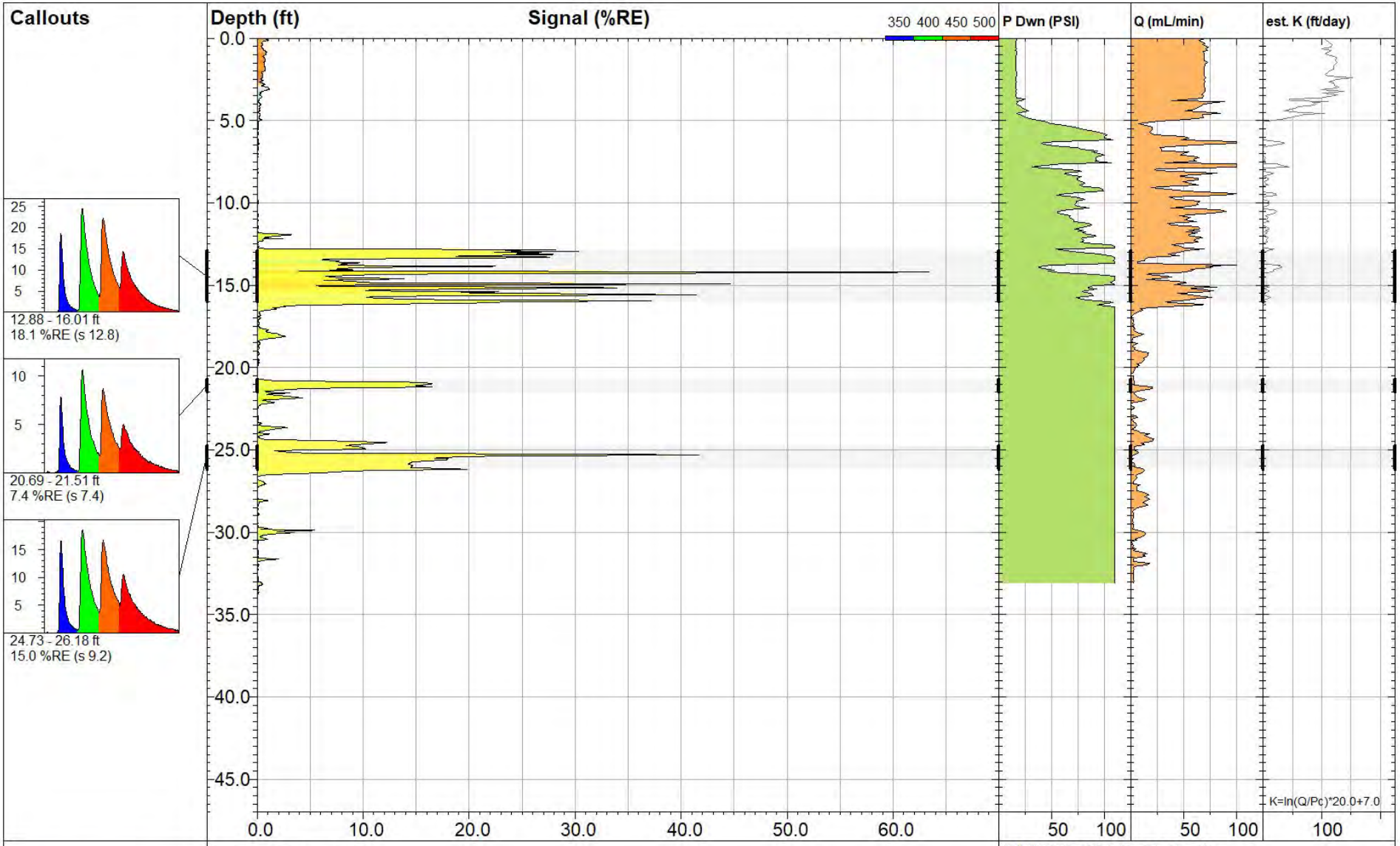
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **41.35 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **217.3 %RE @ 38.91 ft**
Operator / Unit: **BG / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-23 11:12 MST**



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EB-LIF-22

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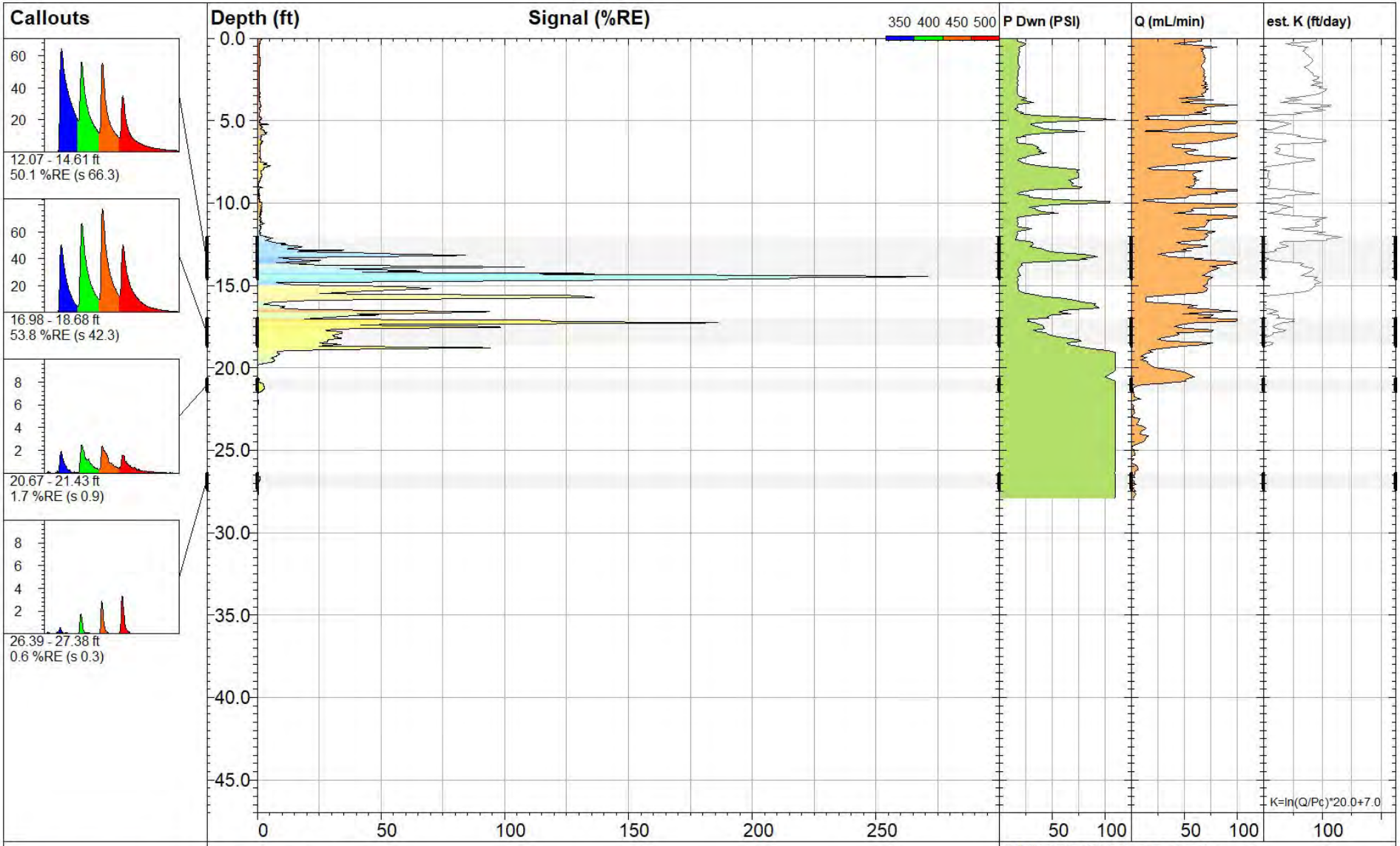
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **33.78 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **63.7 %RE @ 14.19 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 15:56 MST**



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EB-LIF-27

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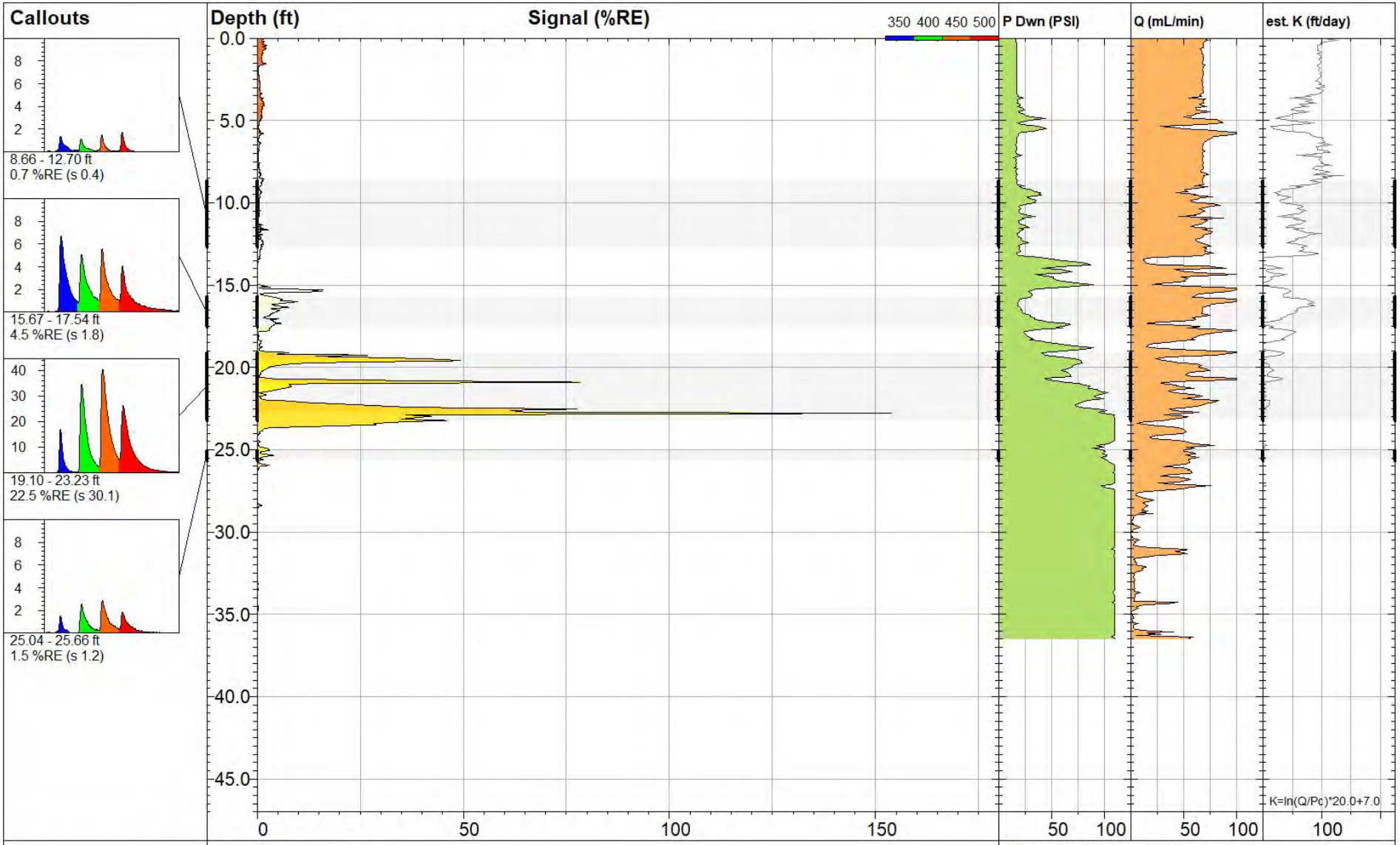
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **28.65 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **272.2 %RE @ 14.46 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 16:28 MST**



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EB-LIF-33

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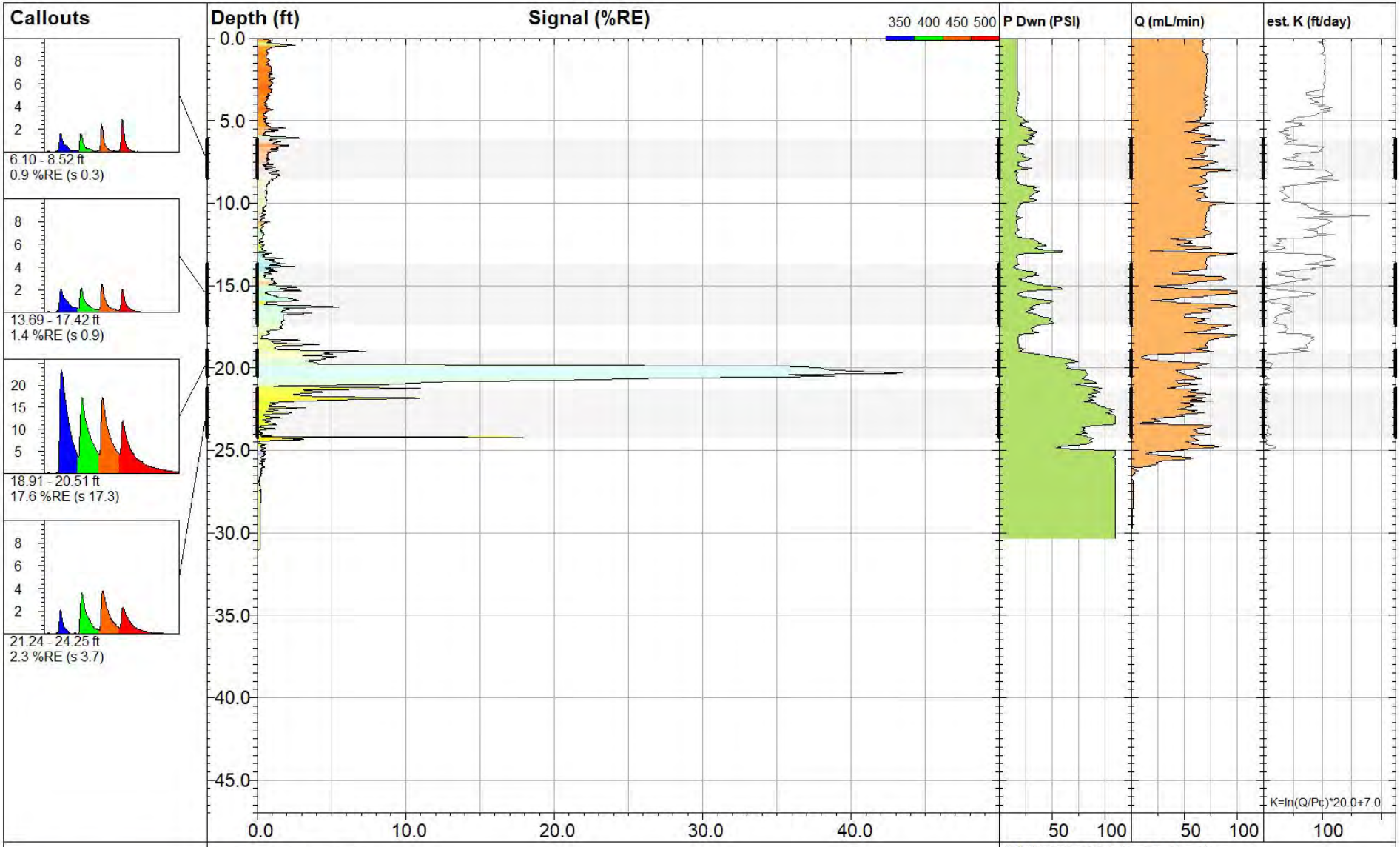
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **37.23 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **156.1 %RE @ 22.79 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-21 11:11 MST**



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EB-LIF-34

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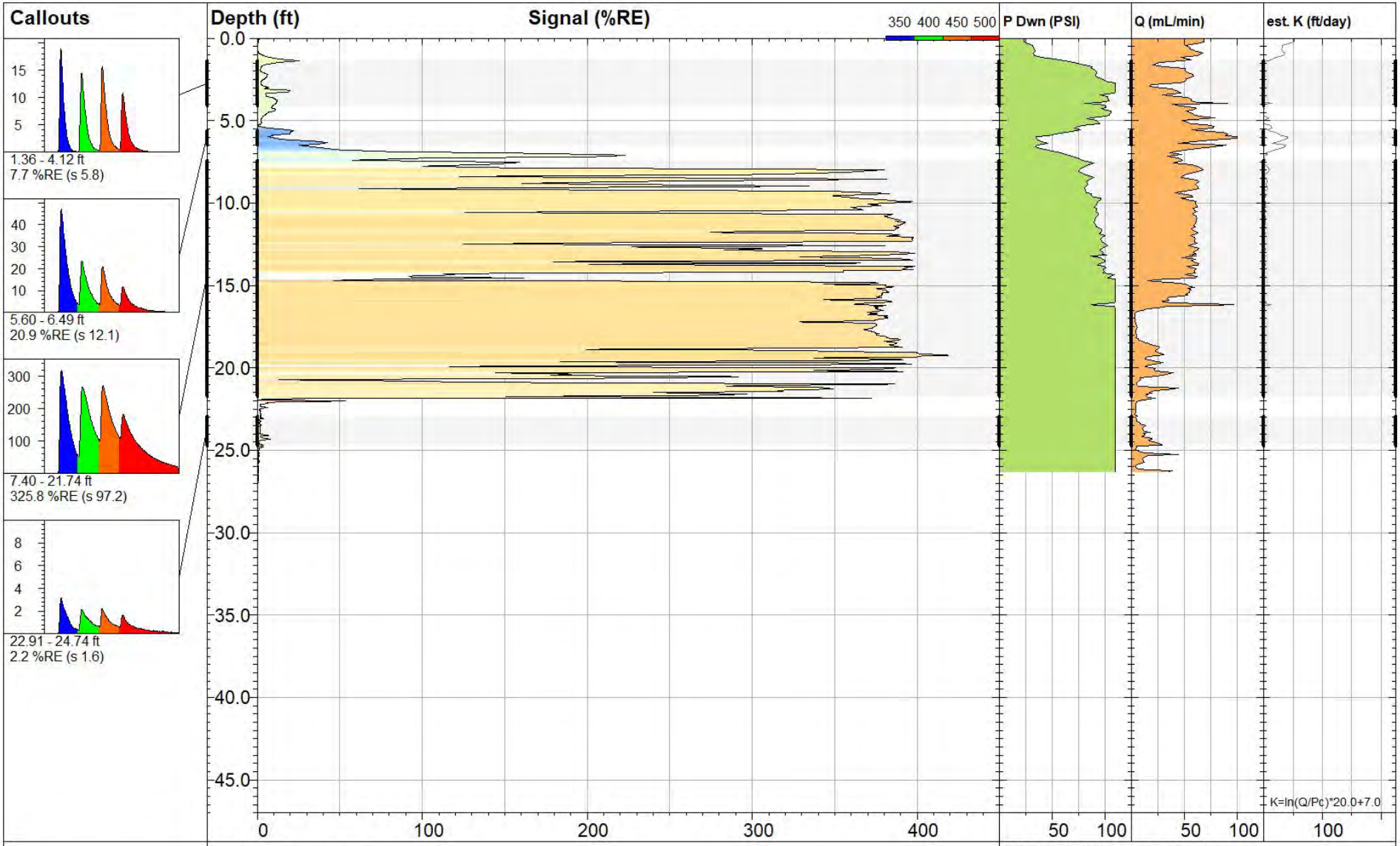
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **31.02 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **43.4 %RE @ 20.32 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-21 09:41 MST**



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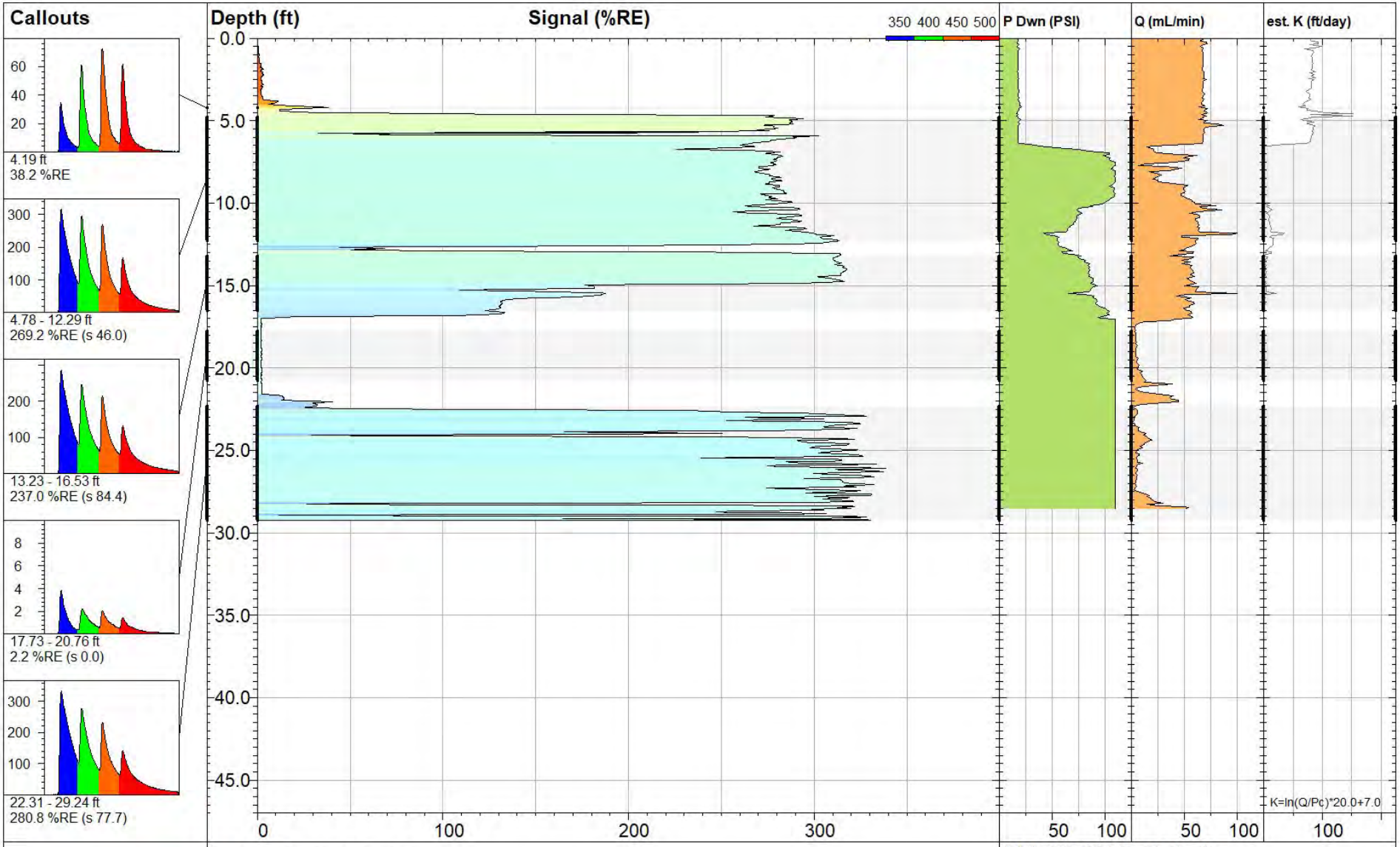
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **27.04 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **419.5 %RE @ 19.24 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 10:26 MST**



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MKTF-LIF-37

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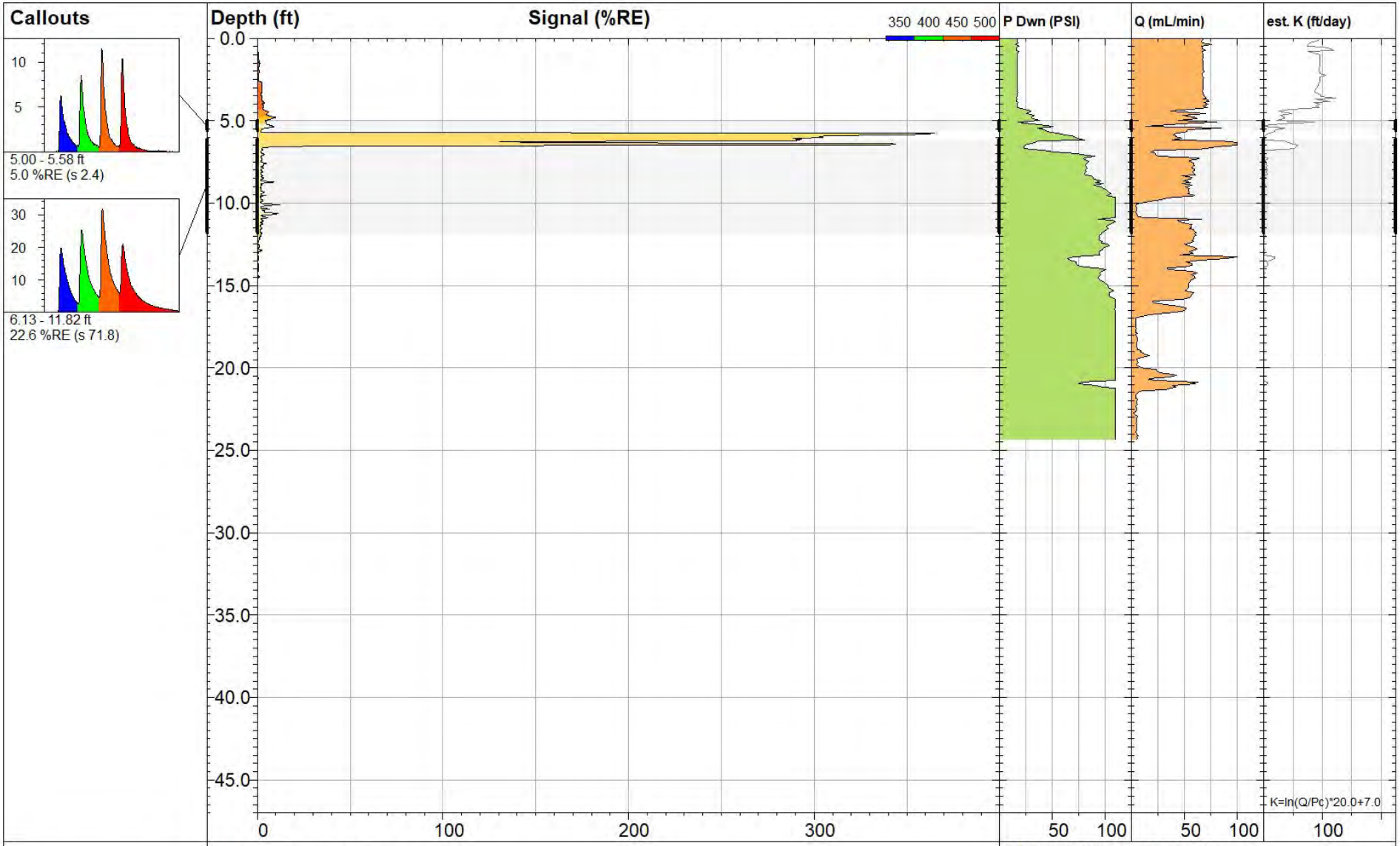
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **29.24 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **338.7 %RE @ 26.08 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 15:14 MST**



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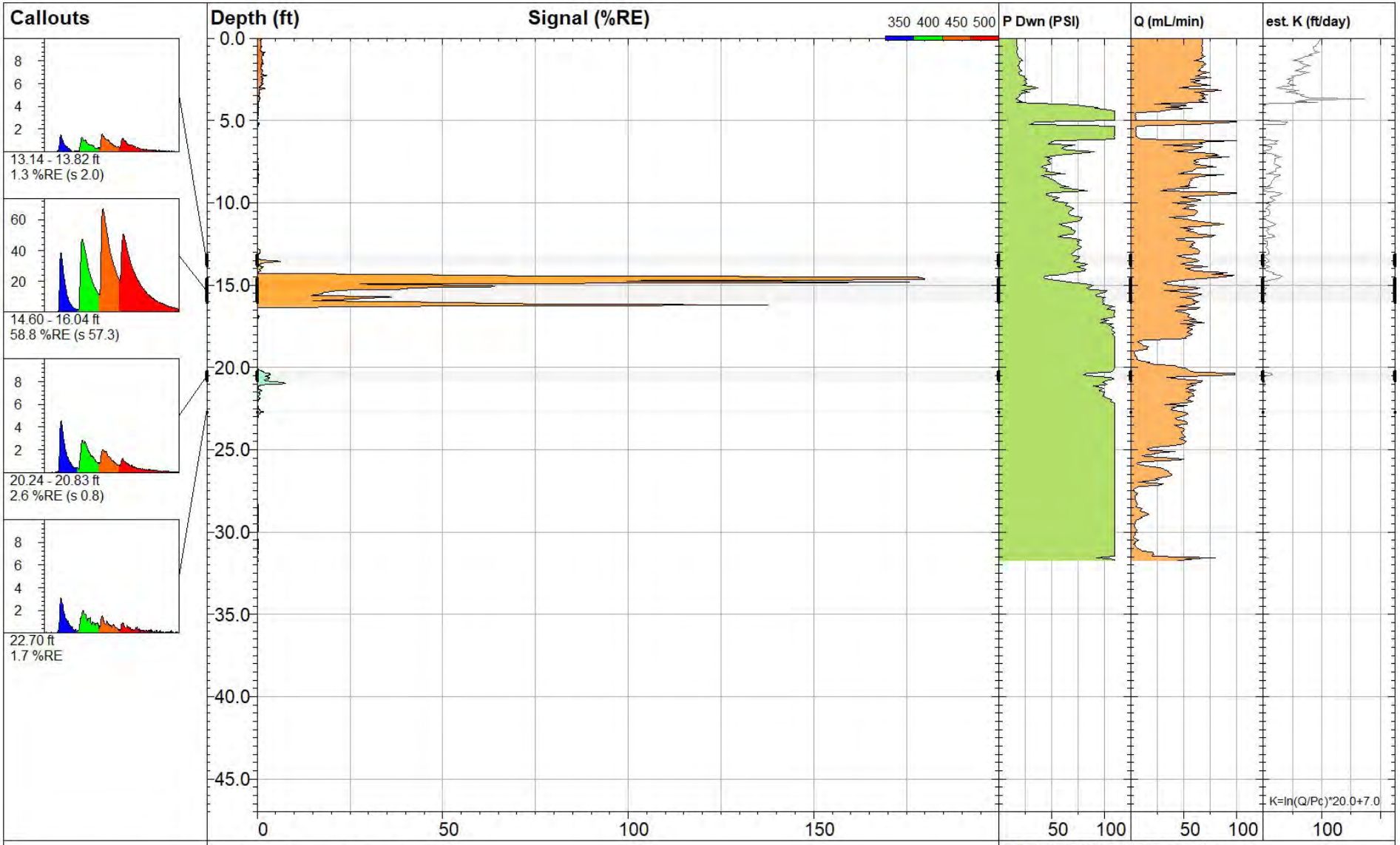
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **25.07 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **365.1 %RE @ 5.77 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 14:43 MST**



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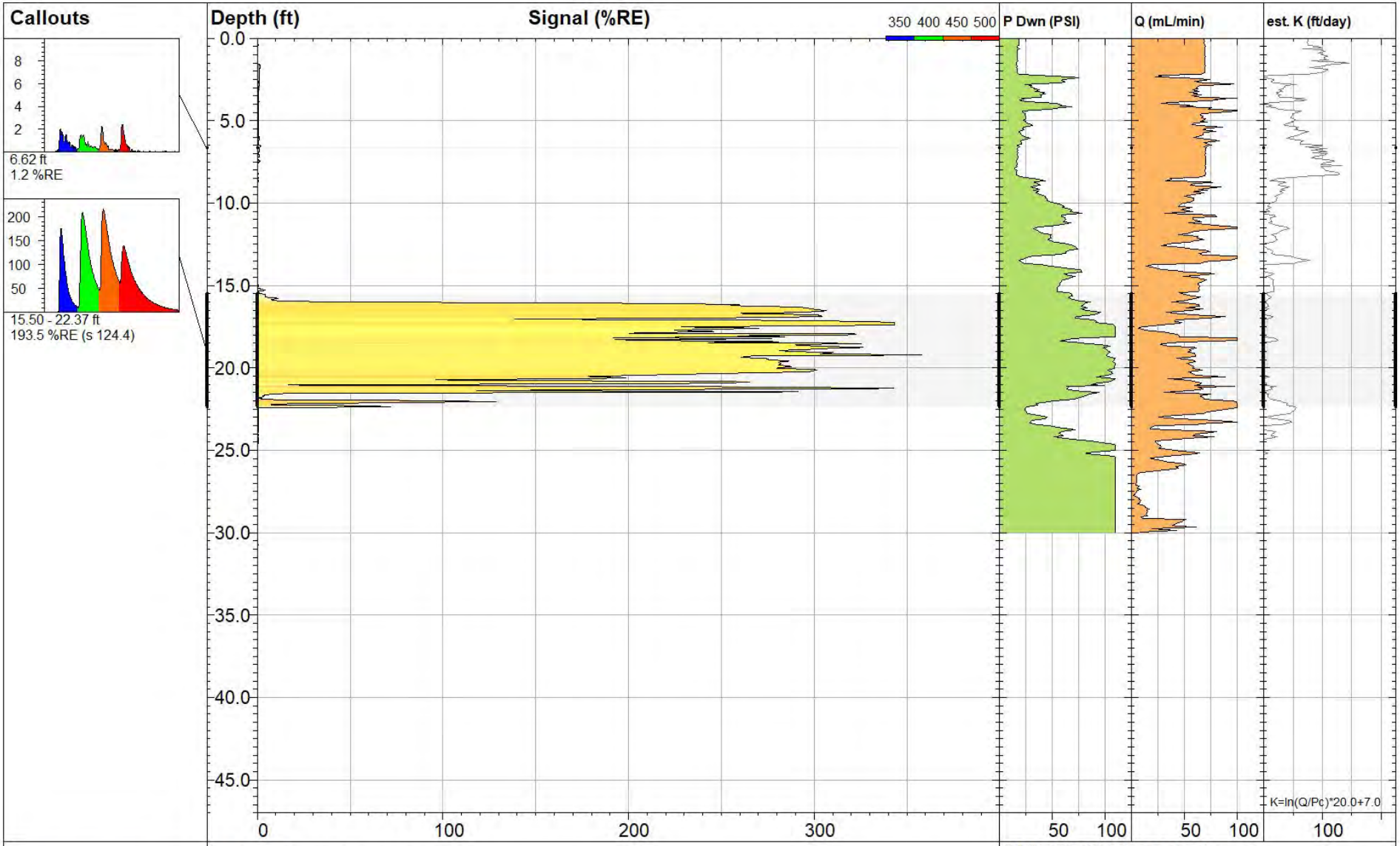
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **32.46 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **179.8 %RE @ 14.67 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 14:06 MST**



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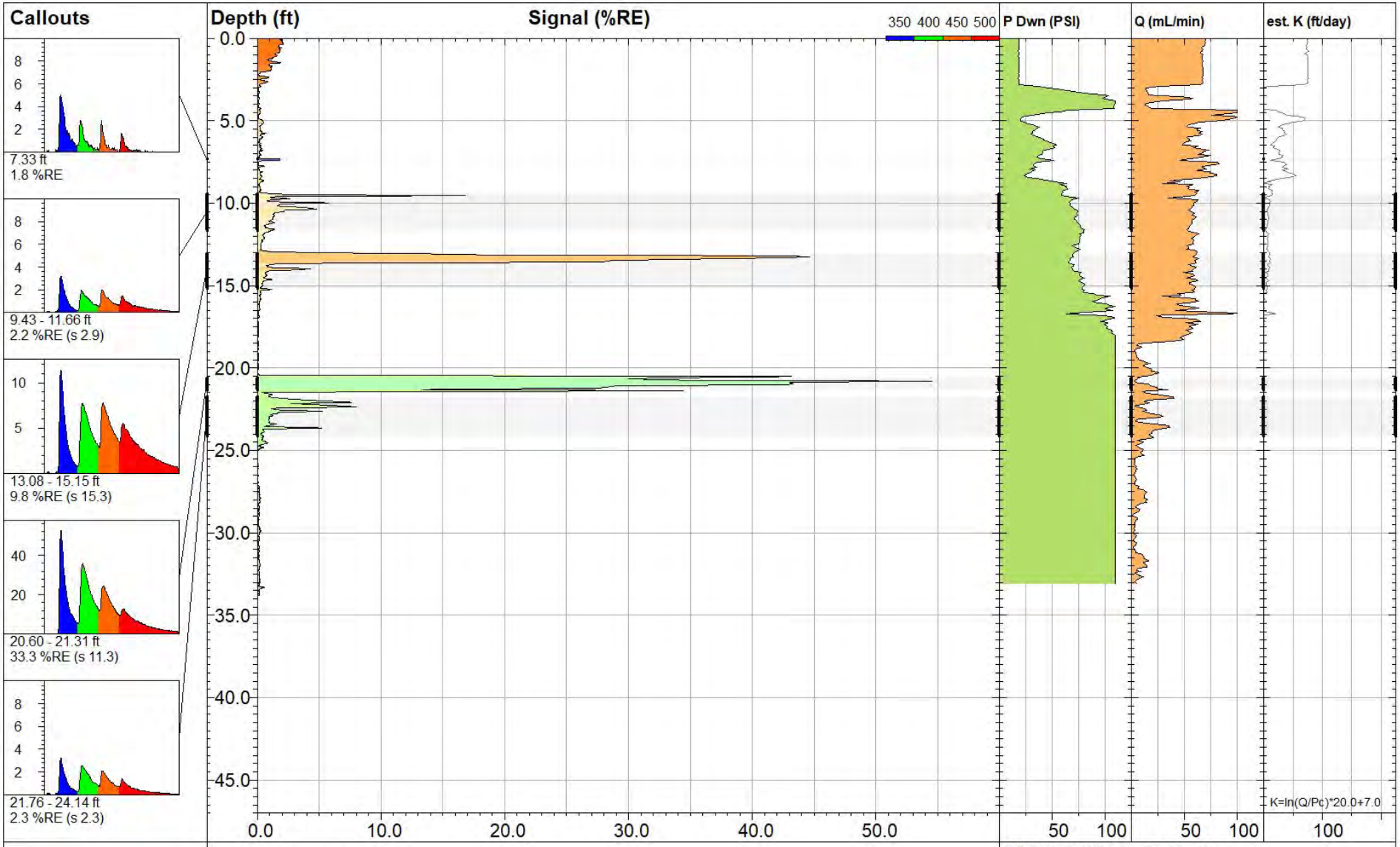
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **30.72 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **362.5 %RE @ 19.22 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 13:31 MST**



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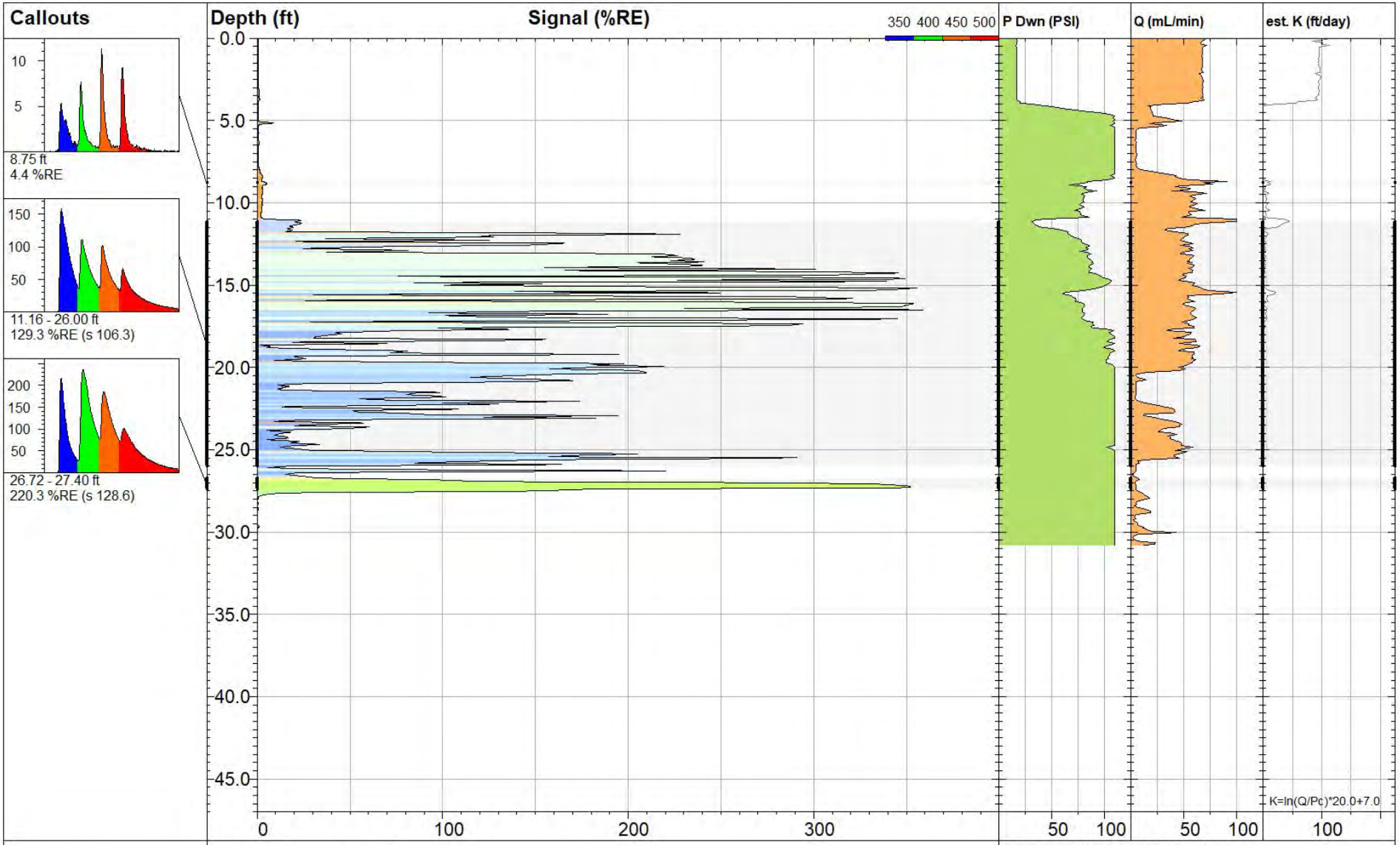
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **33.82 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **54.9 %RE @ 20.80 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-20 08:17 MST**



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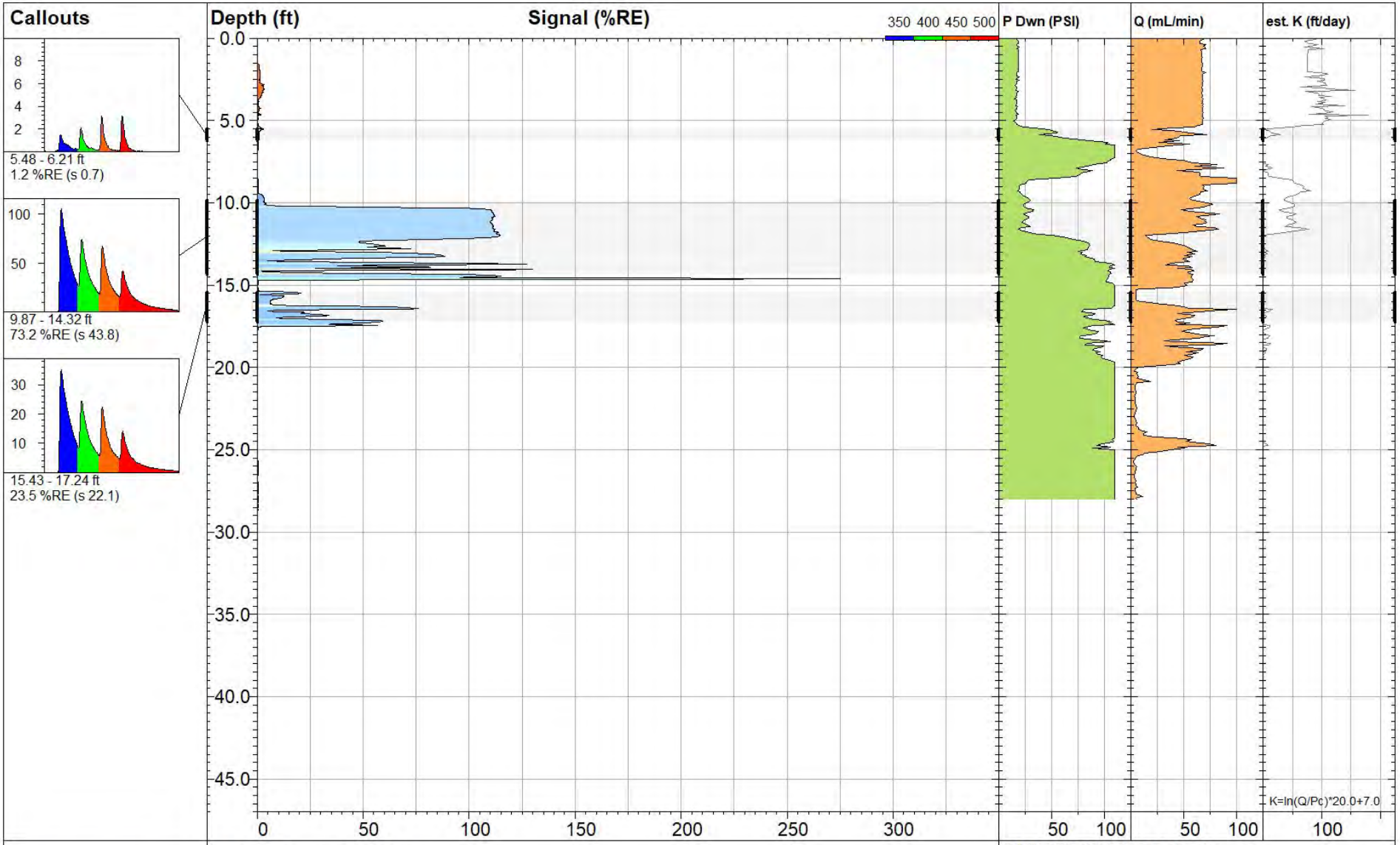
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **31.51 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **366.7 %RE @ 16.50 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 15:53 MST**



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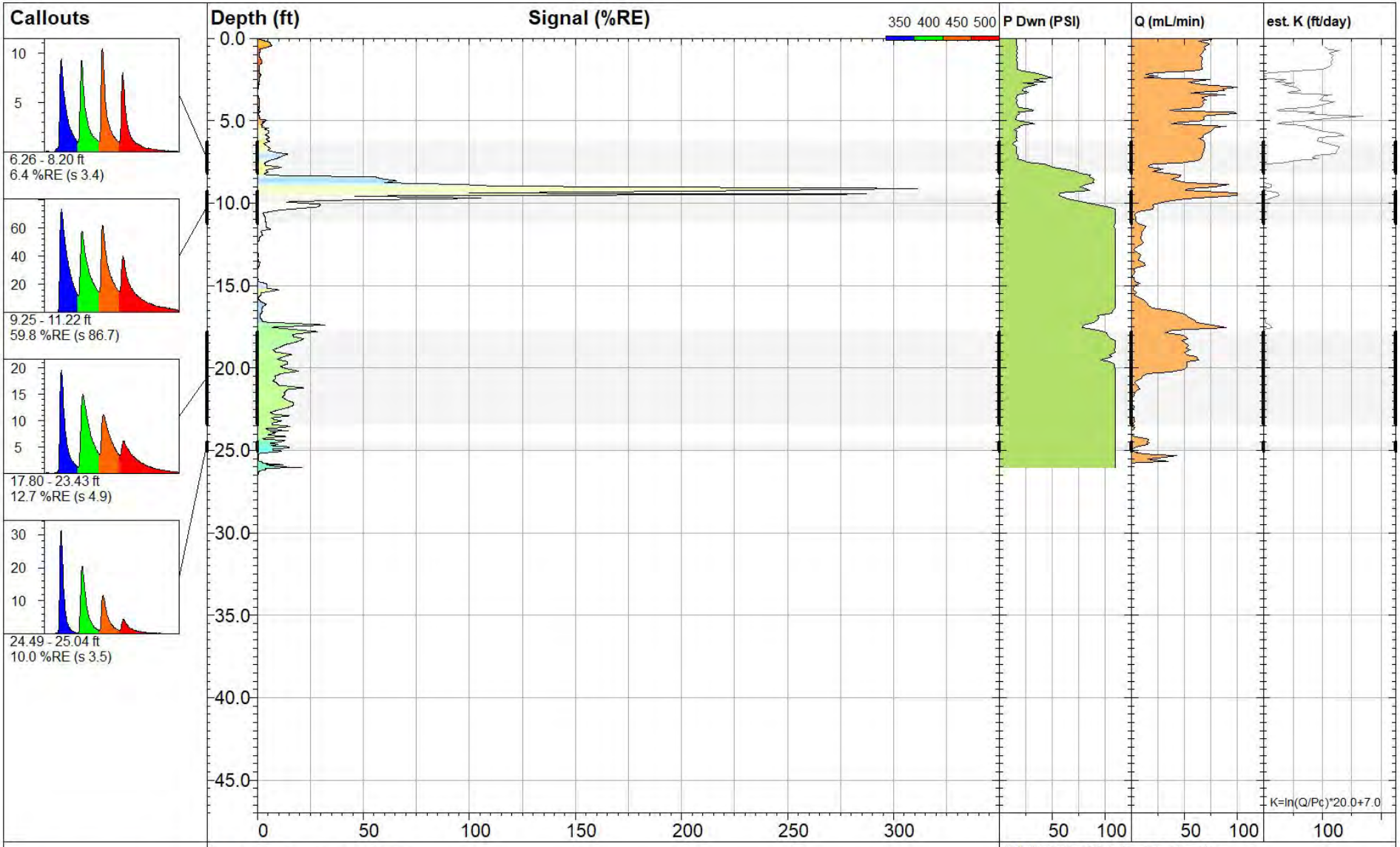
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **28.72 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **287.0 %RE @ 14.61 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-19 16:17 MST**



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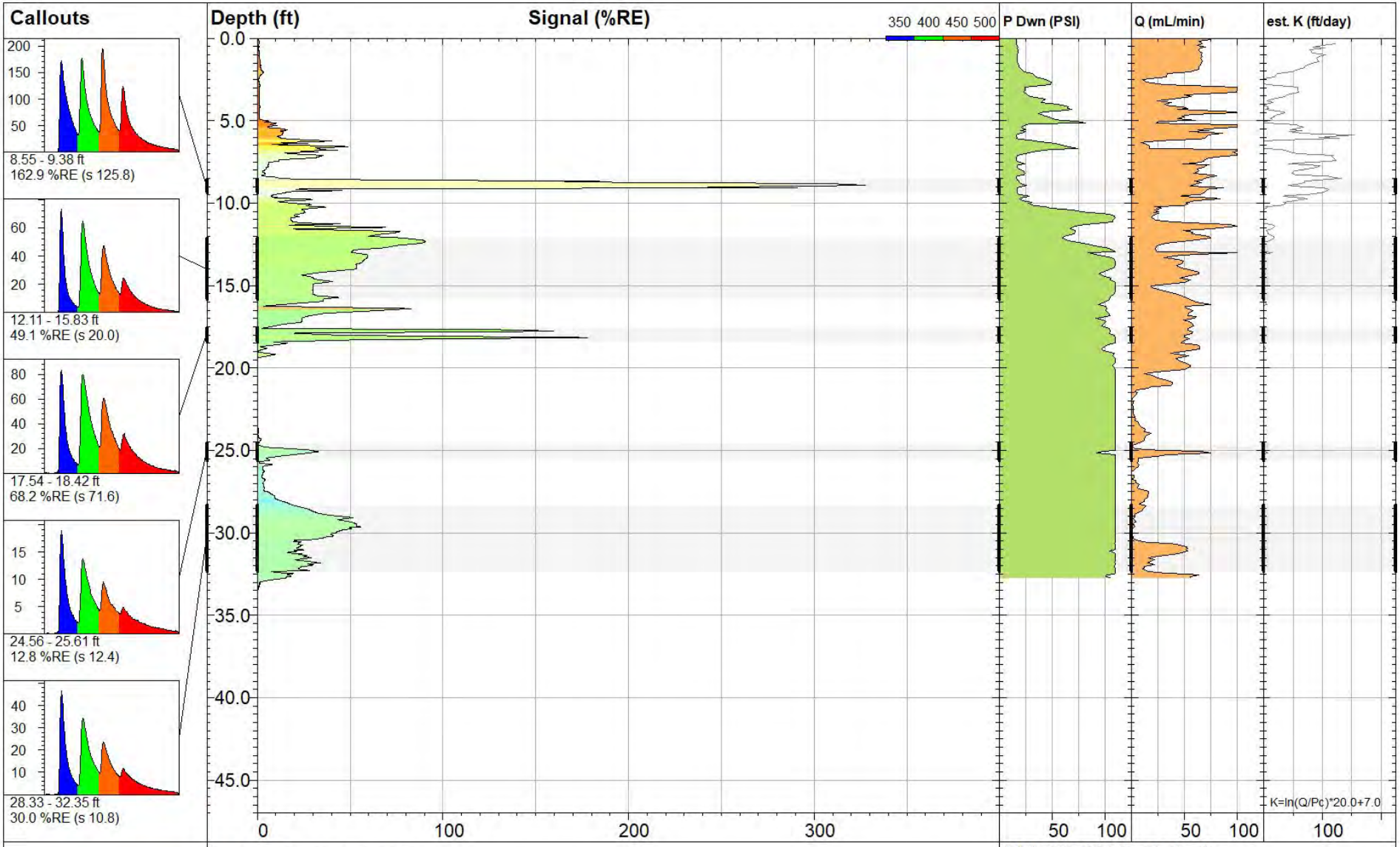
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **26.74 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **315.0 %RE @ 9.11 ft**
Operator / Unit: **BG / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-24 13:40 MST**



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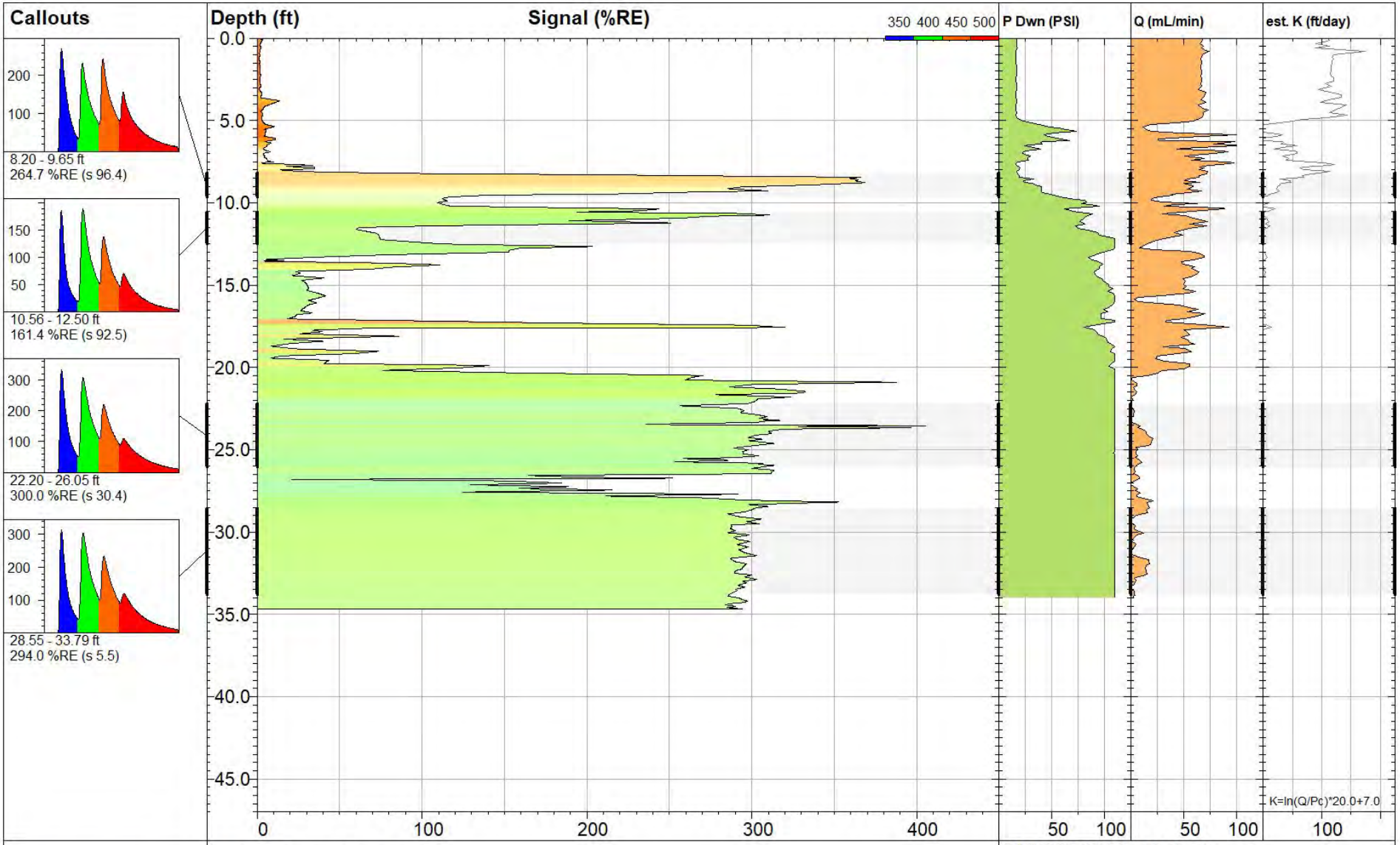
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **33.41 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **329.2 %RE @ 8.92 ft**
Operator / Unit: **BG / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-24 12:47 MST**



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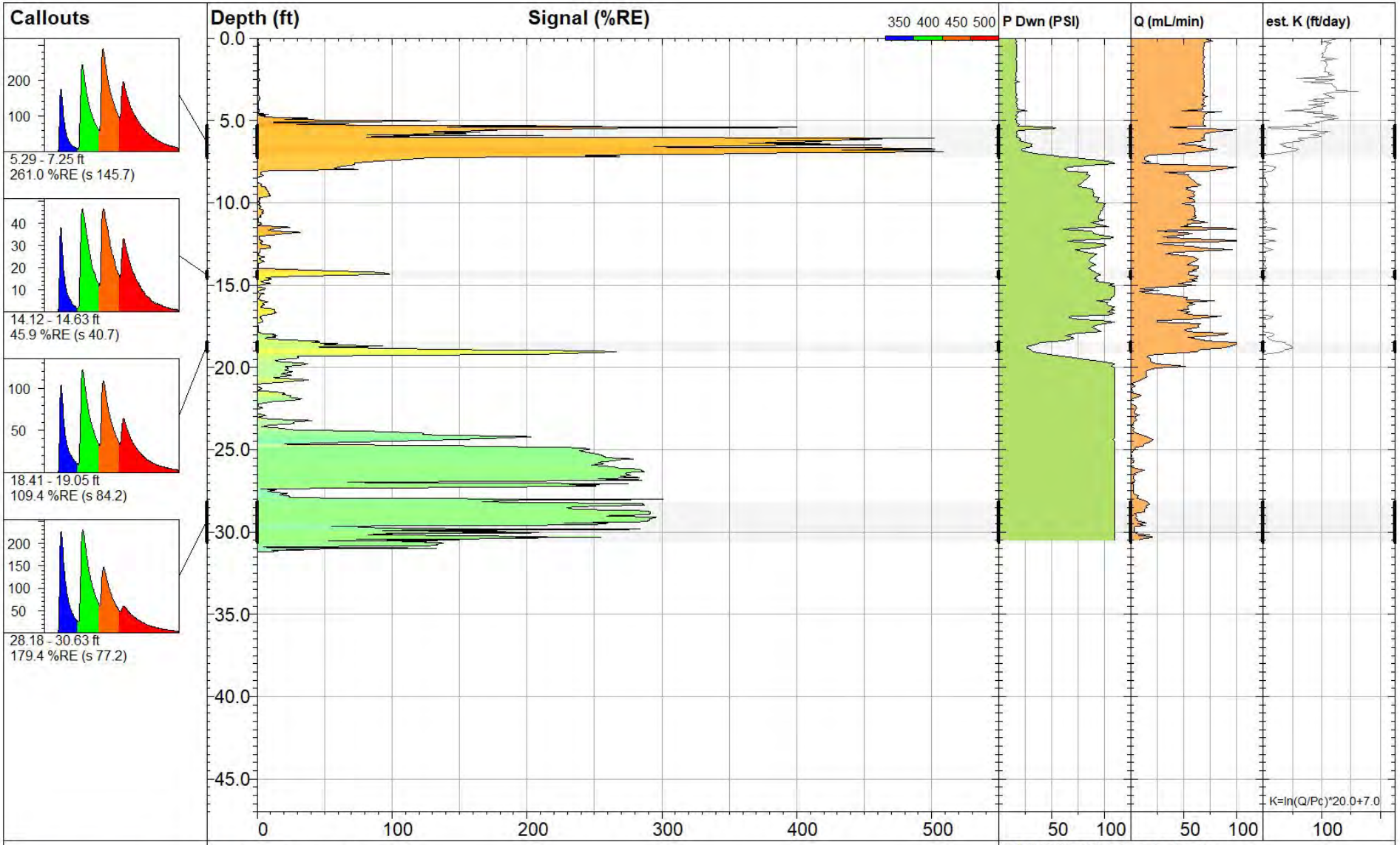
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **34.66 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **409.2 %RE @ 23.54 ft**
Operator / Unit: **BG / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-24 13:15 MST**



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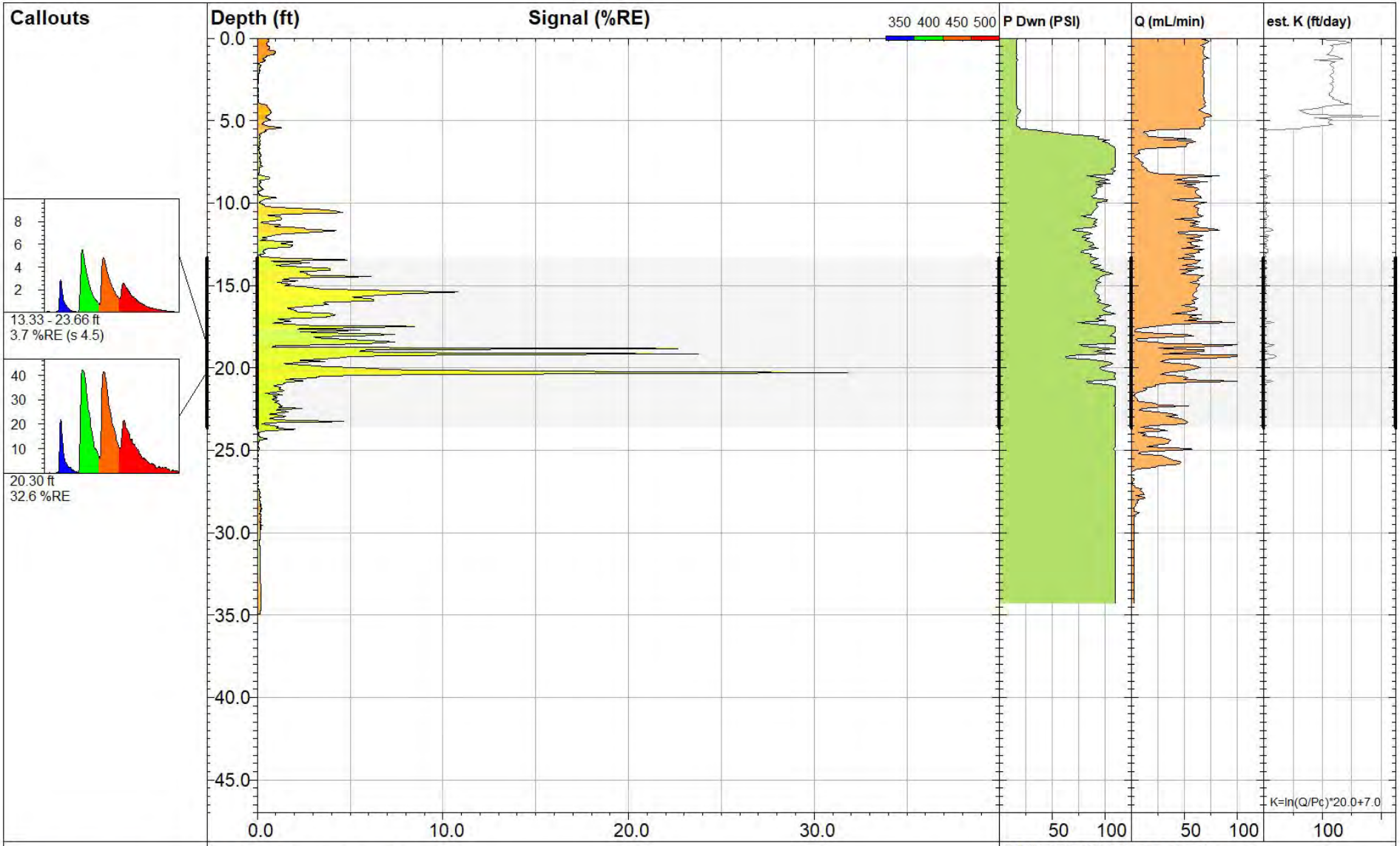
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **31.20 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **515.2 %RE @ 6.05 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 13:45 MST**



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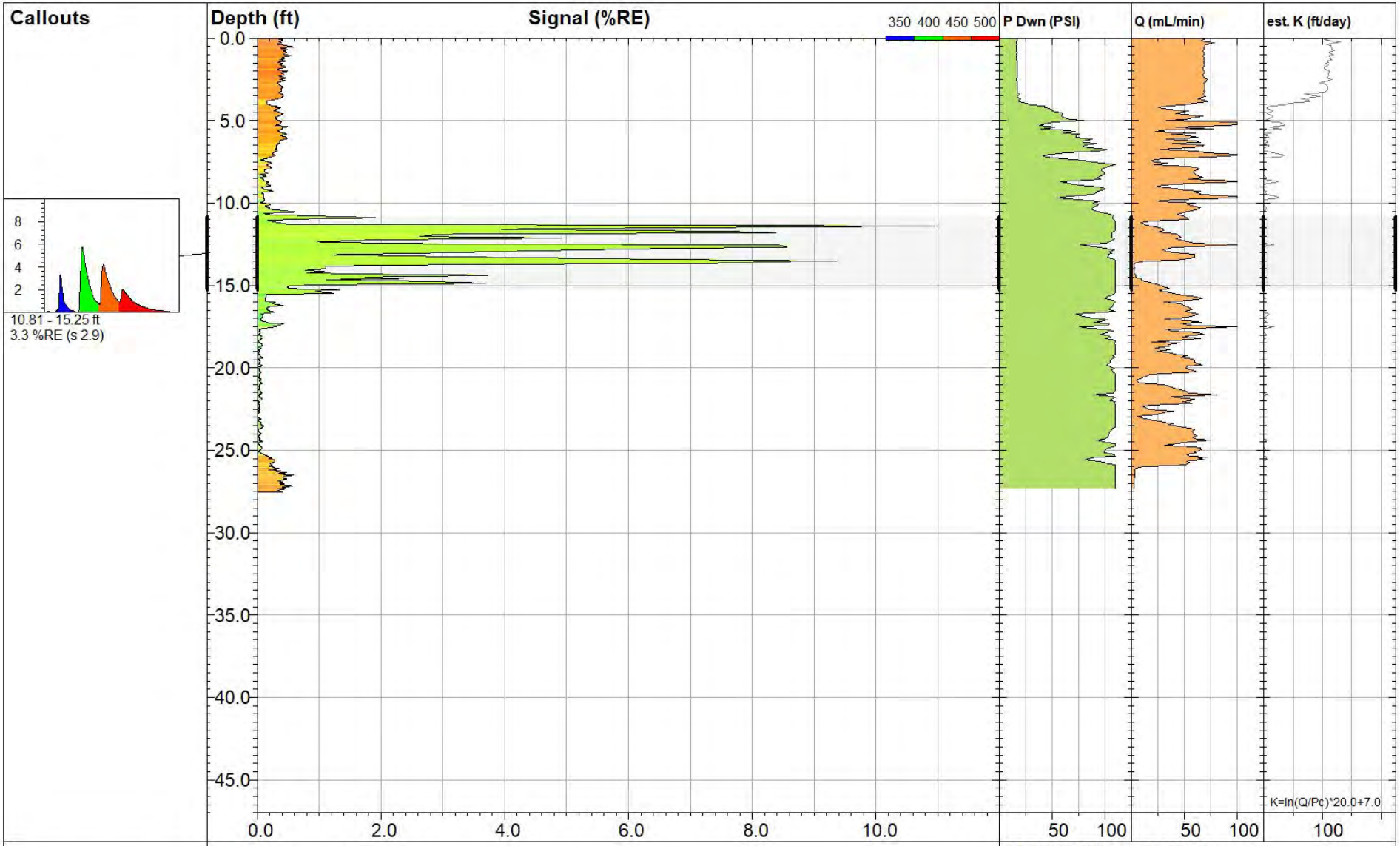
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **34.94 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **32.6 %RE @ 20.30 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 13:16 MST**



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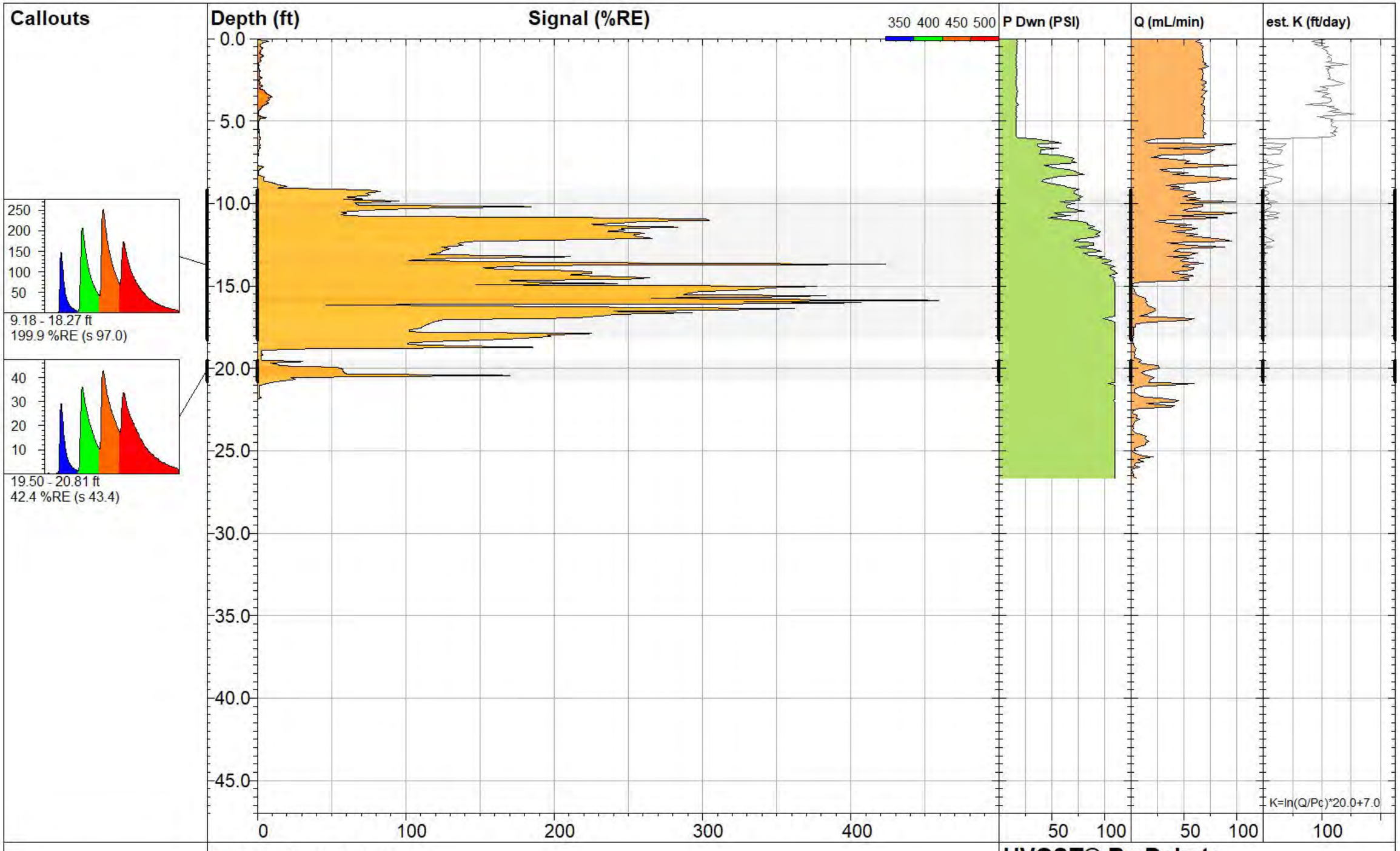
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **27.54 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **11.0 %RE @ 11.39 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 11:18 MST**



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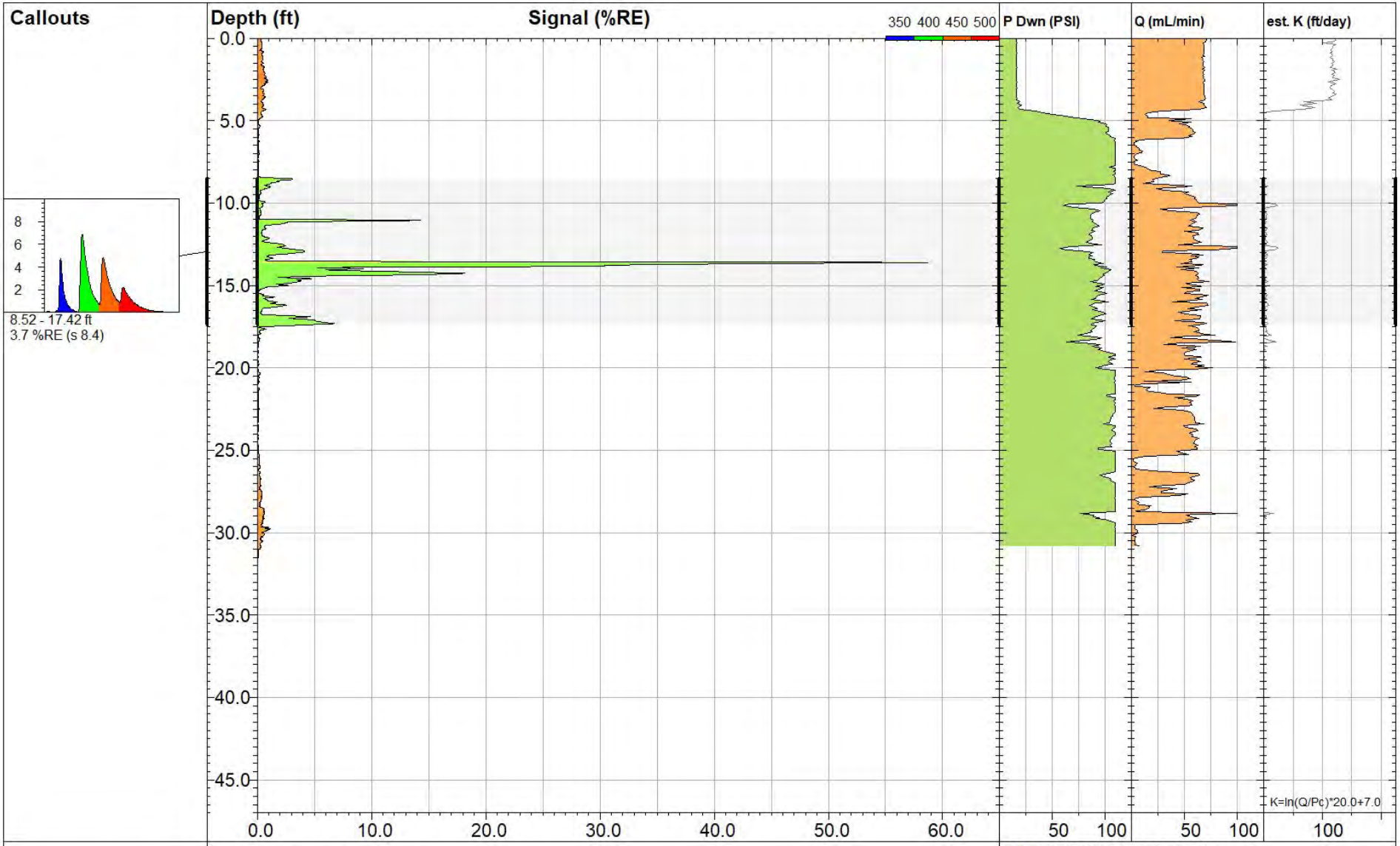
	Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **27.39 ft**
	Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **463.2 %RE @ 15.88 ft**
	Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 14:42 MST**



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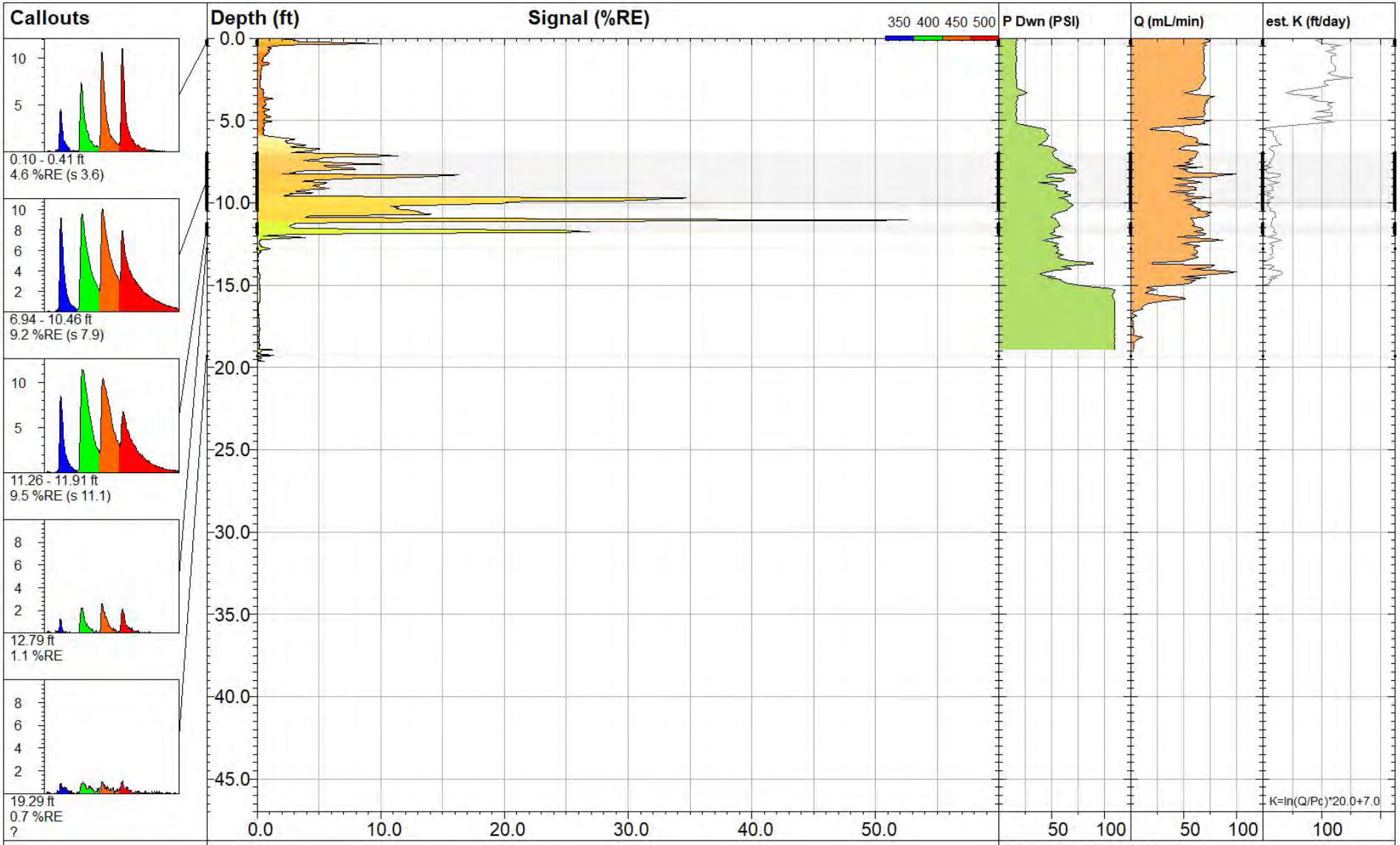
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **31.50 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **60.2 %RE @ 13.60 ft**
Operator / Unit: **DS / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 10:47 MST**



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MKTF-LIF-52

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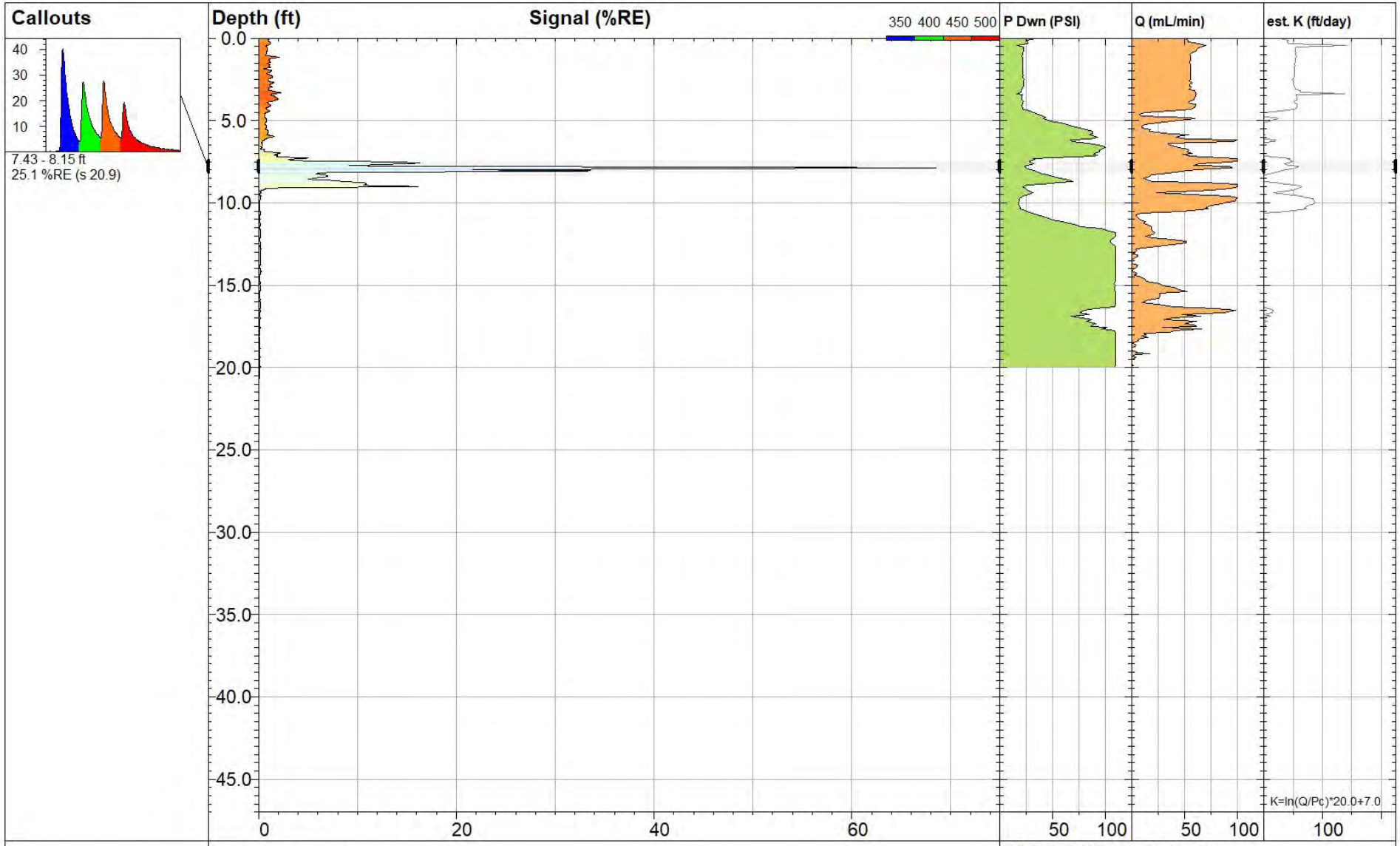
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **19.64 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **52.8 %RE @ 11.06 ft**
Operator / Unit: **BG / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-22 15:10 MST**



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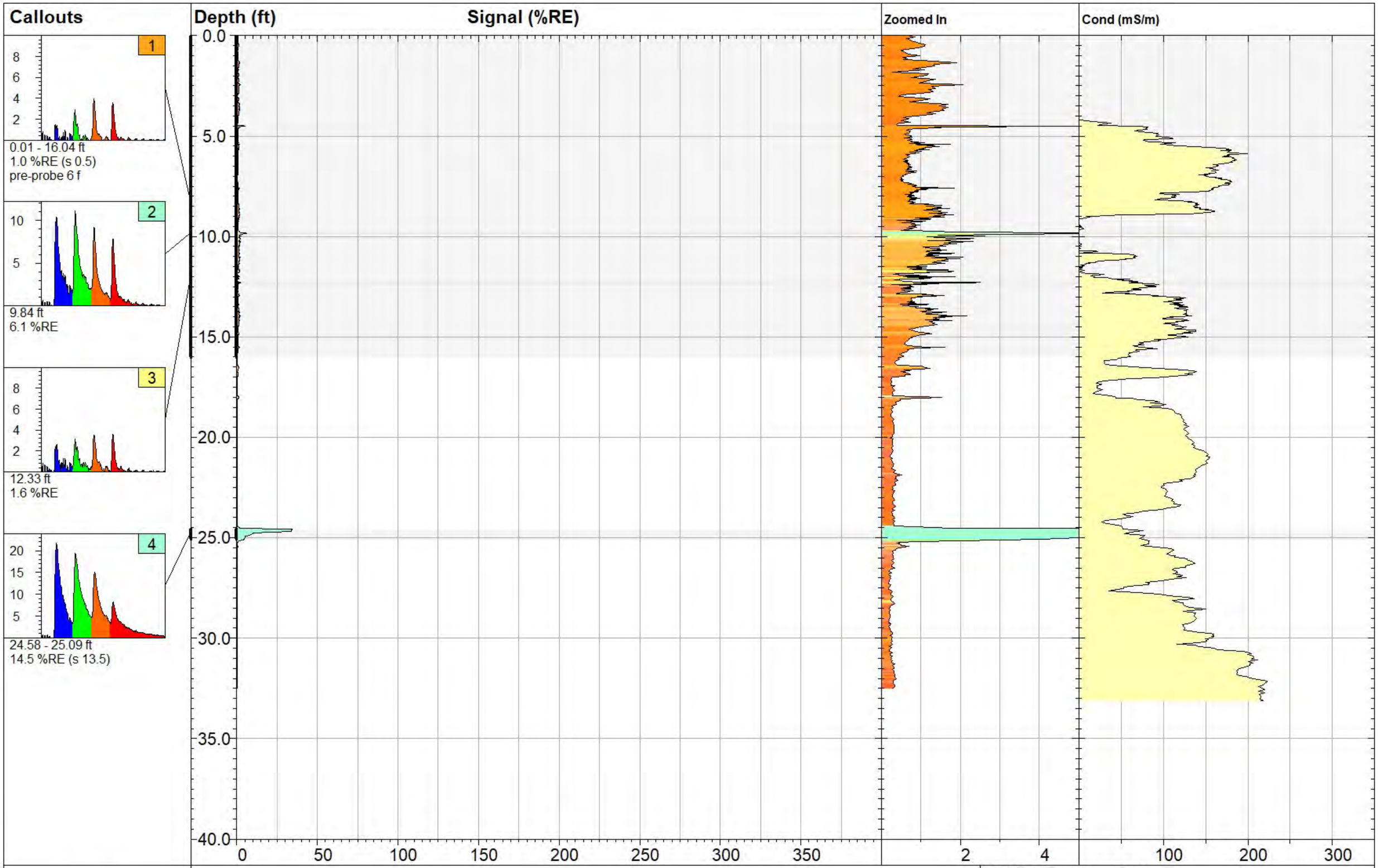
Site: **Eastern Boundry LIF Investigation**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **20.65 ft**
Client / Job: **Trihydro / 0408.19**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **70.6 %RE @ 7.87 ft**
Operator / Unit: **BG / CP / UVOST1003**	*Elevation:* **Unavailable**	*Date & Time:* **2019-11-24 09:59 MST**



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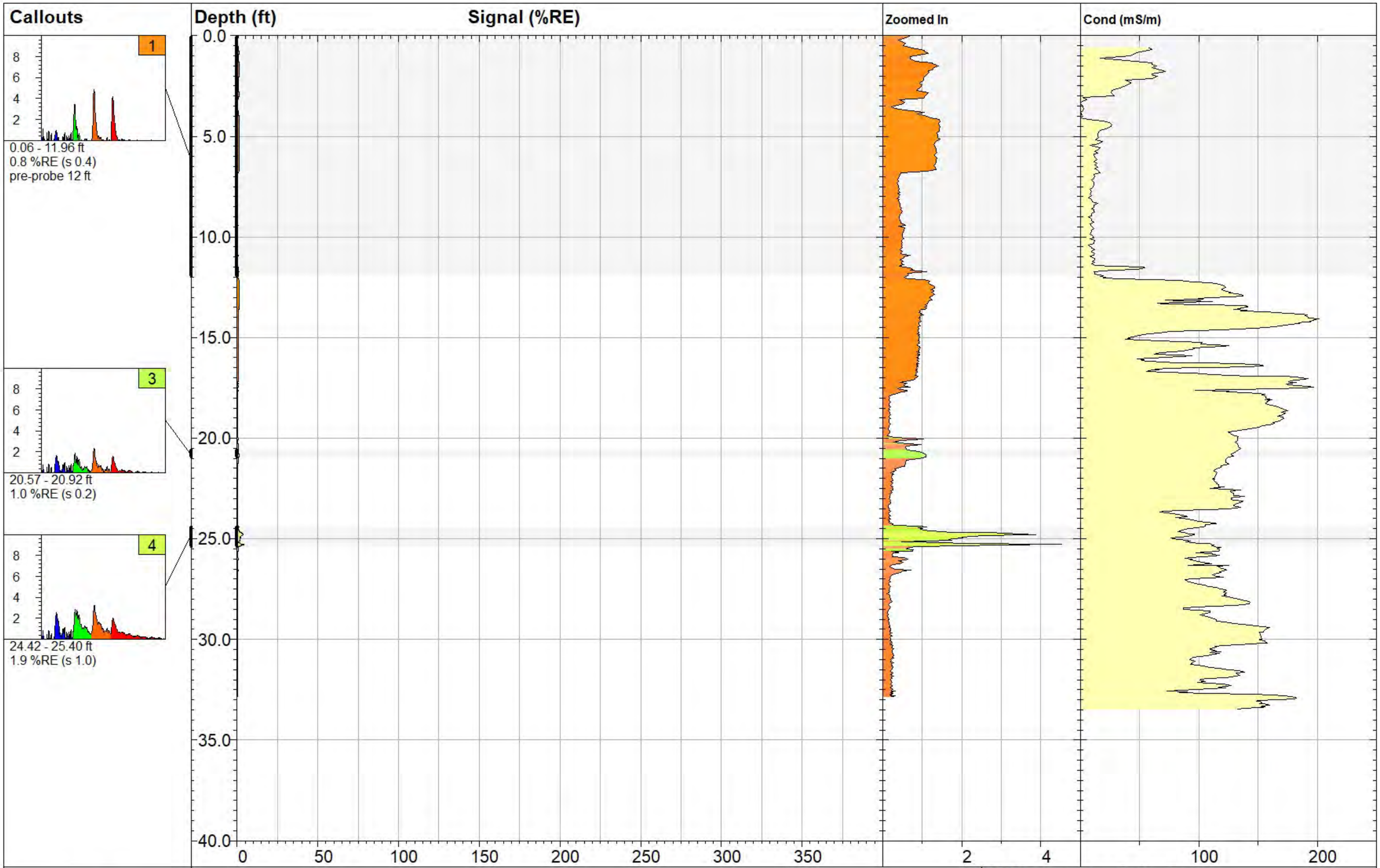
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **32.48 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **34.4 %RE @ 24.58 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 12:37 MST**



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MKTF-LIF-55

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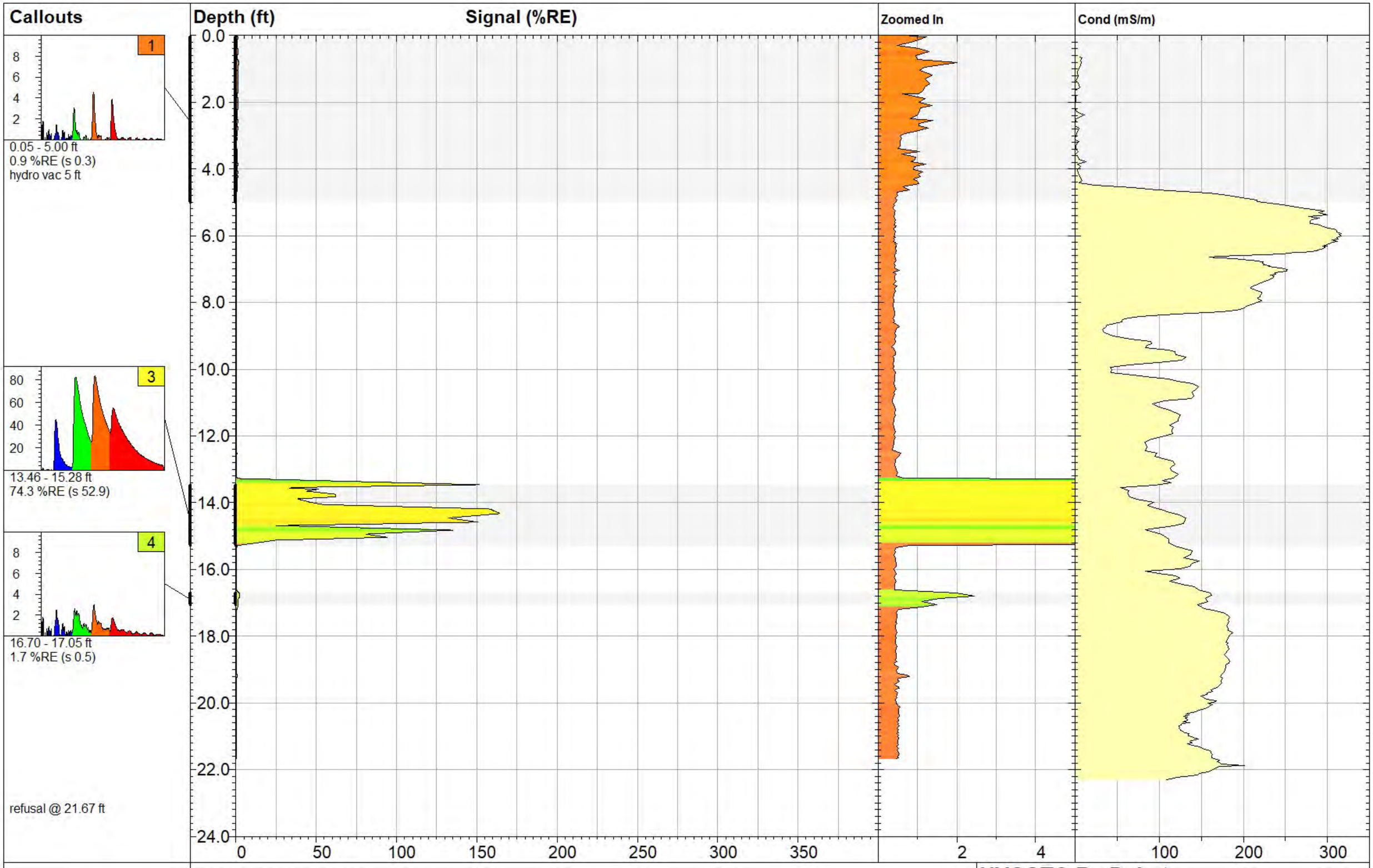
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **32.84 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **4.5 %RE @ 25.28 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 15:49 MST**



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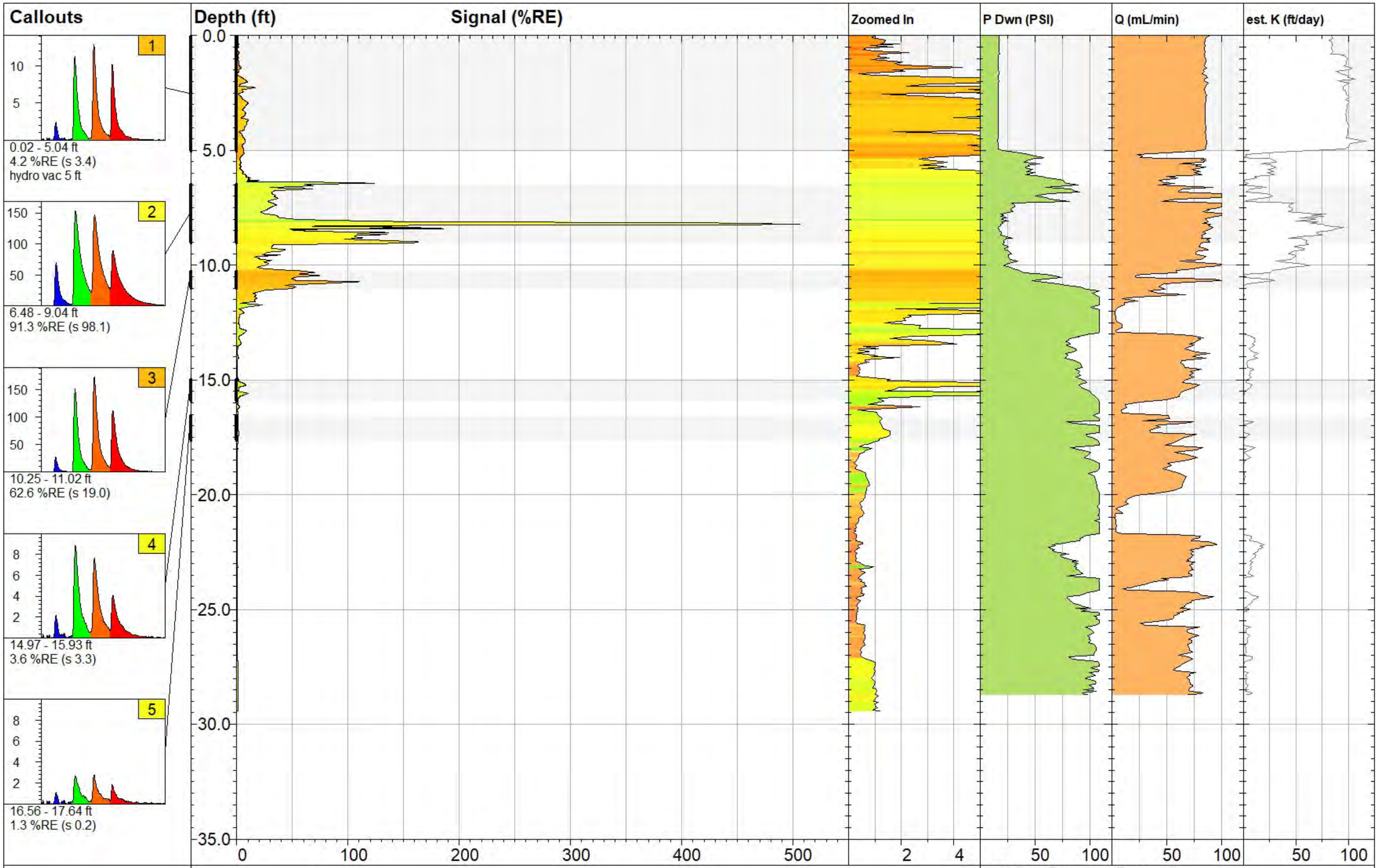
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **21.67 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **164.5 %RE @ 14.33 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 16:49 MST**



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MKTF-LIF-57

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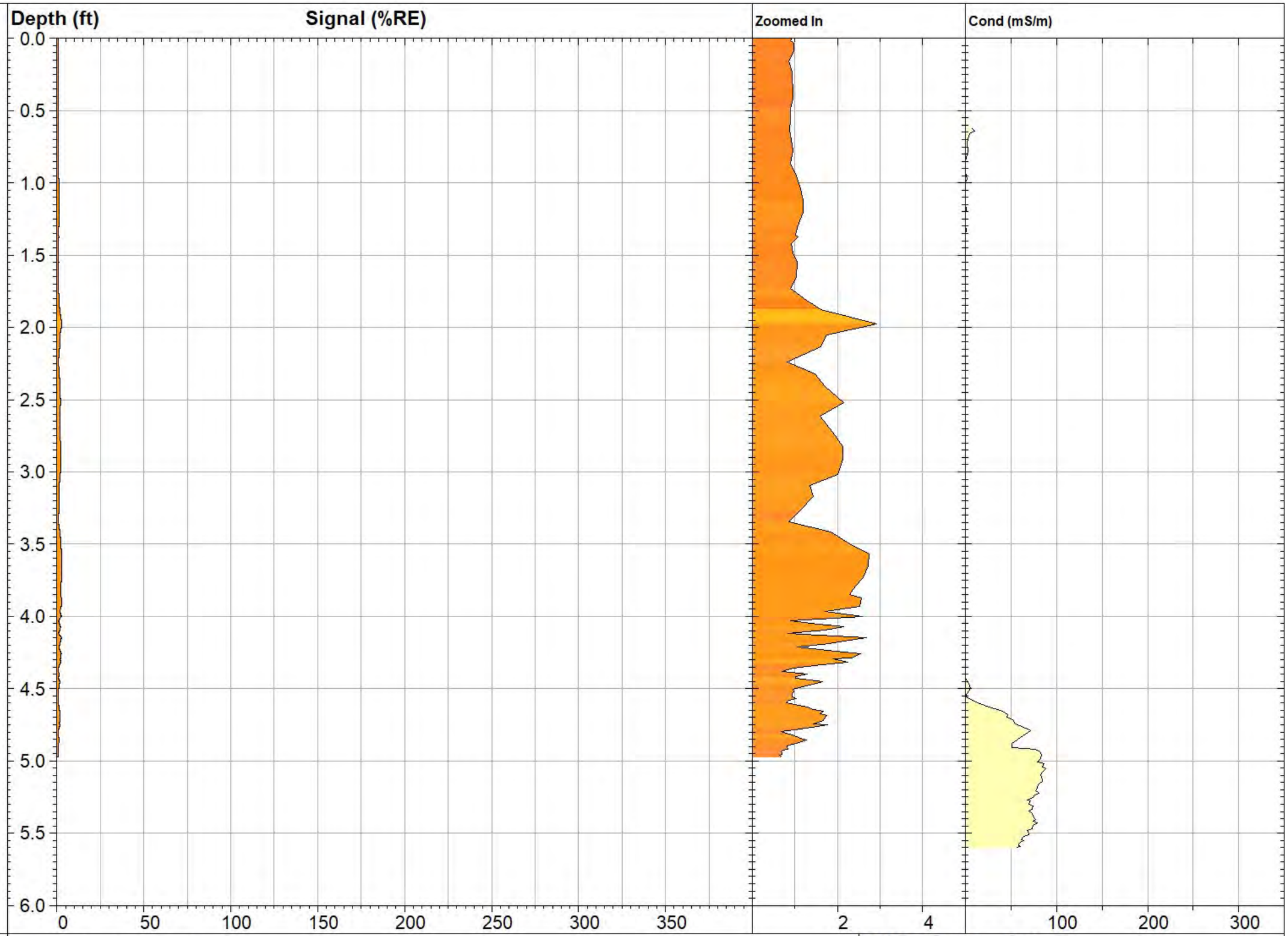
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **29.42 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **510.7 %RE @ 8.23 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 08:28 MST**

Callouts

refusal @ 4.97 ft



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MKTF-LIF-58

UVOST® By Dakota
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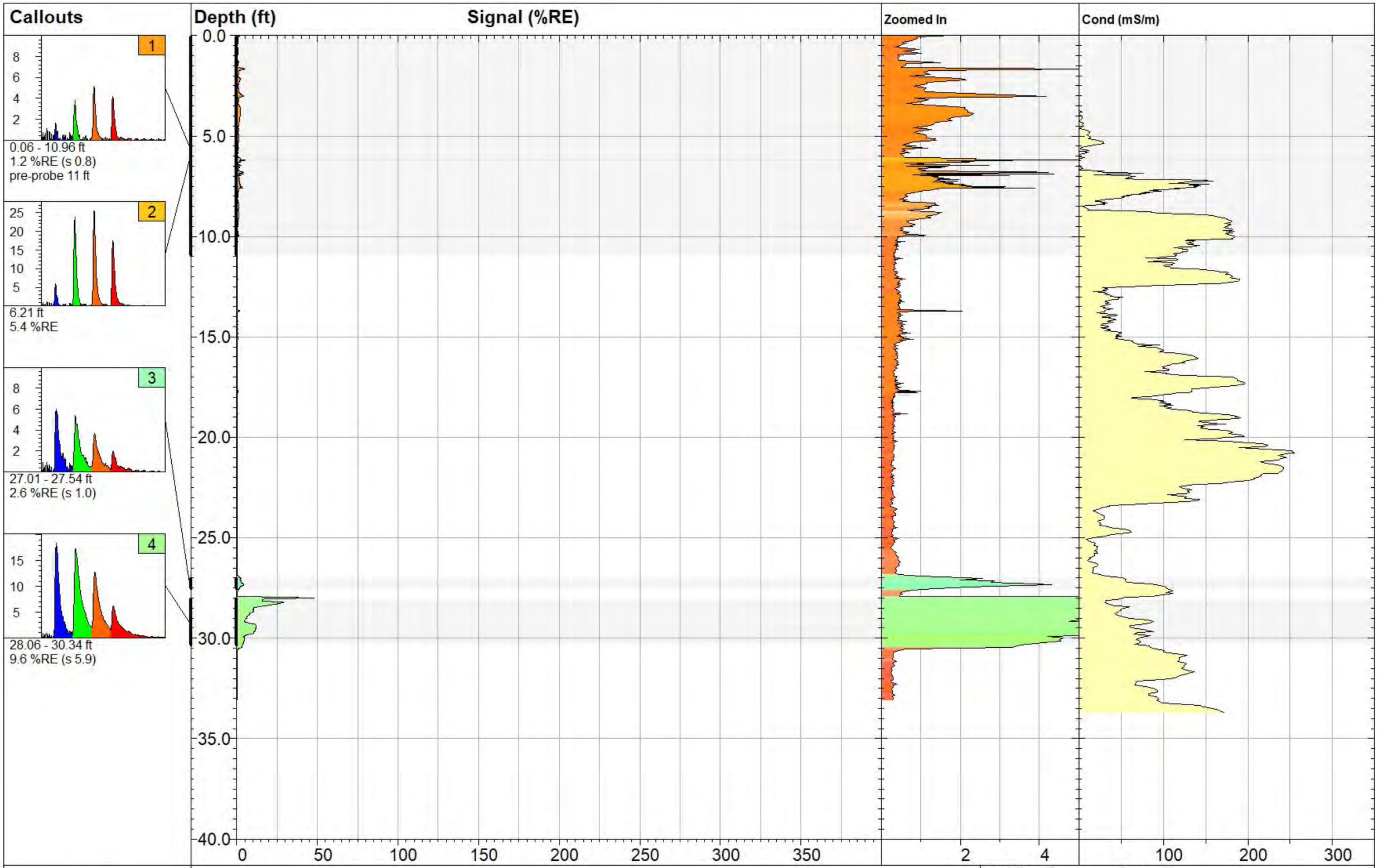
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **4.97 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **2.9 %RE @ 1.98 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 07:53 MST**



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MKTF-LIF-59

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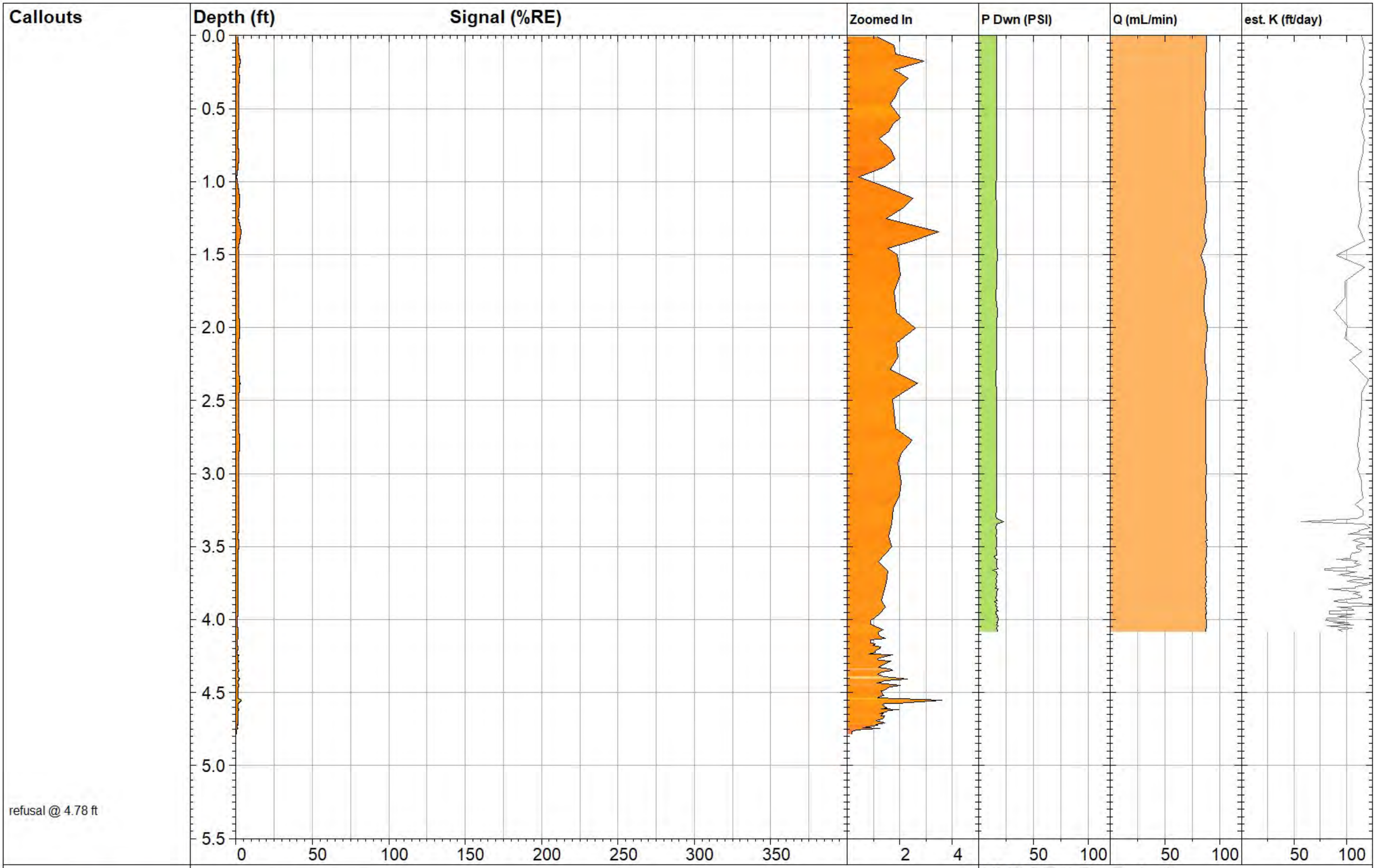
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **33.07 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **48.1 %RE @ 27.99 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 09:27 MST**



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MKTF-LIF-60

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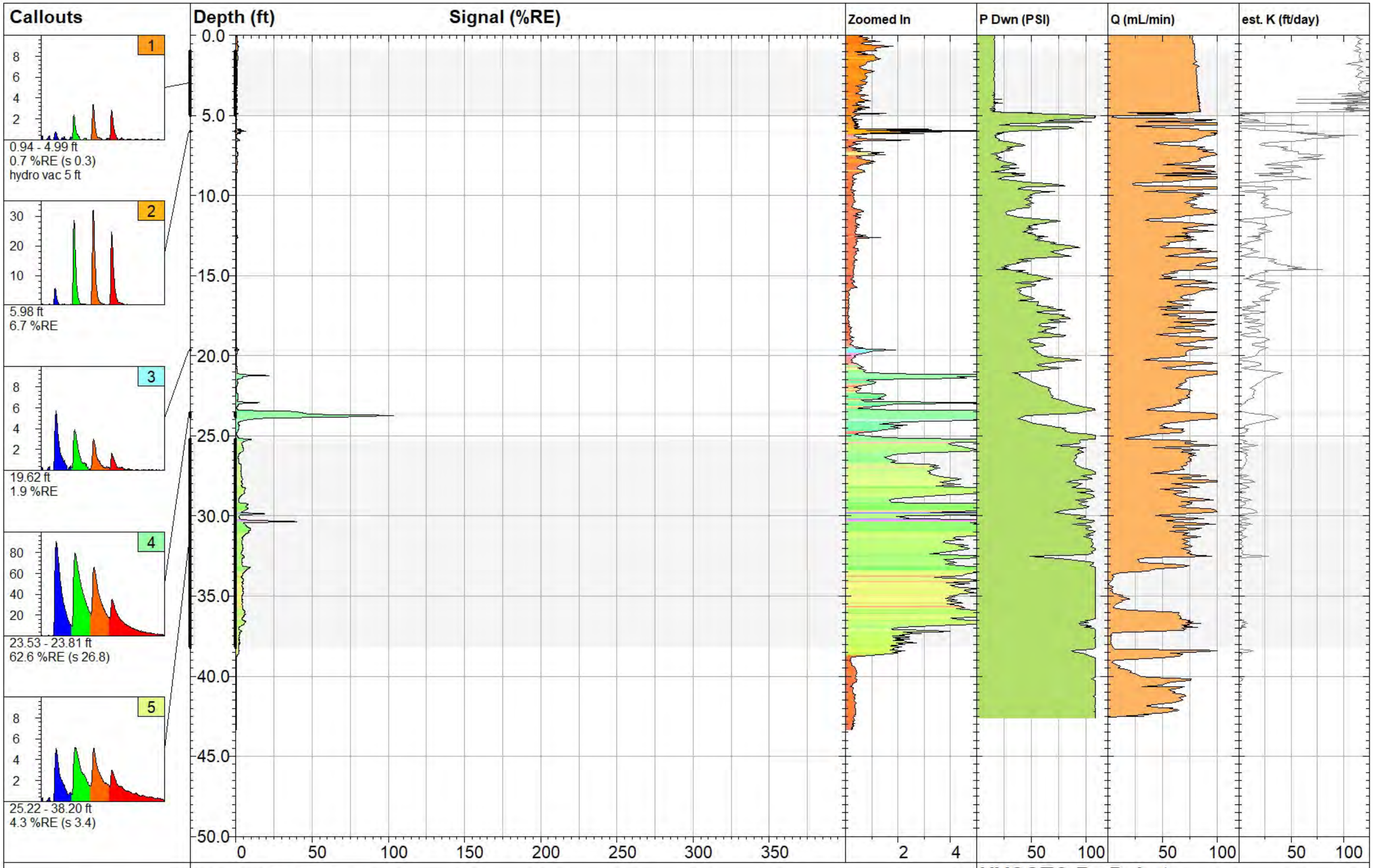
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **4.78 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **3.6 %RE @ 4.55 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 12:12 MST**



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MKTF-LIF-61

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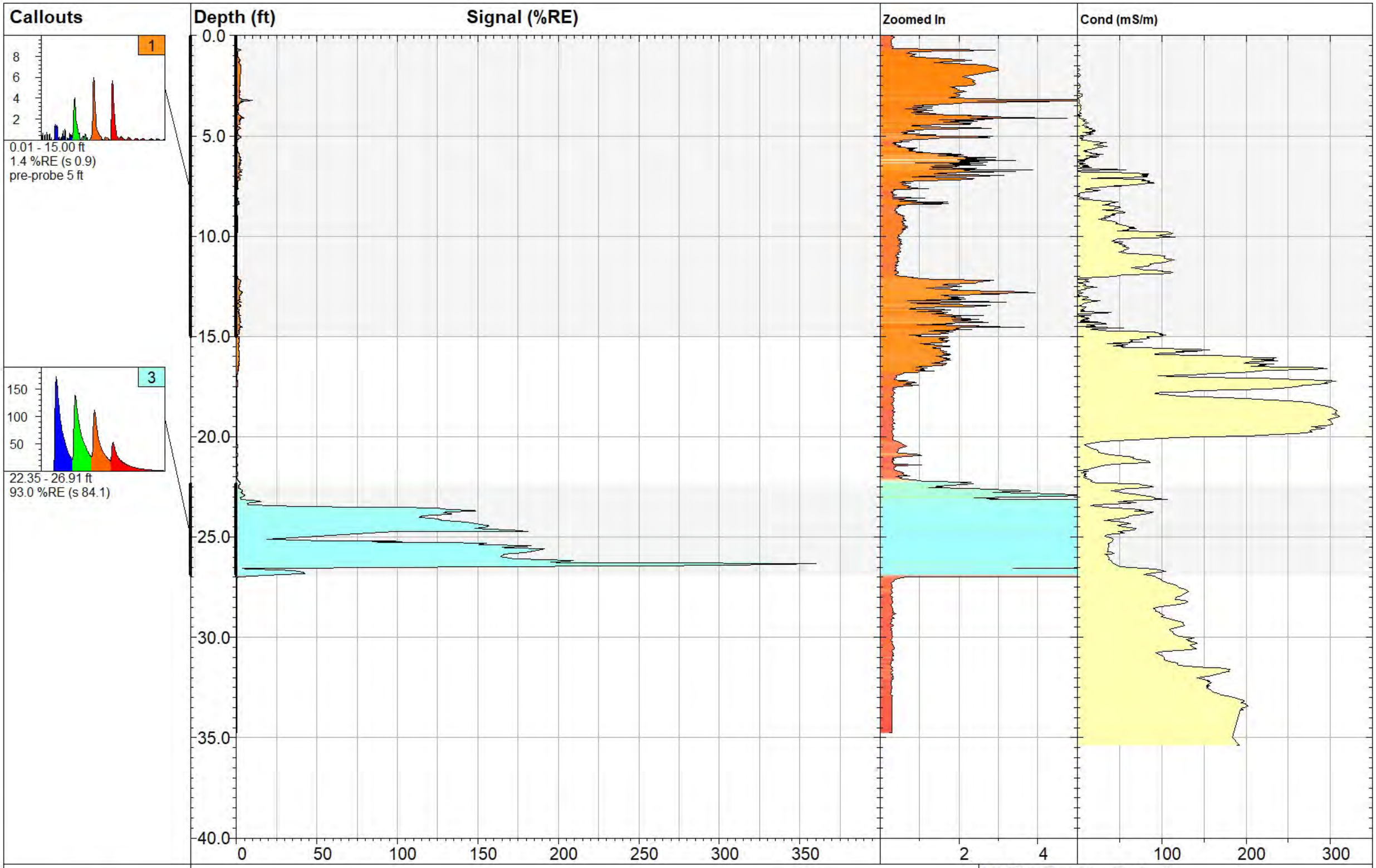
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **43.33 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **105.2 %RE @ 23.73 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 10:44 MST**



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MKTF-LIF-62

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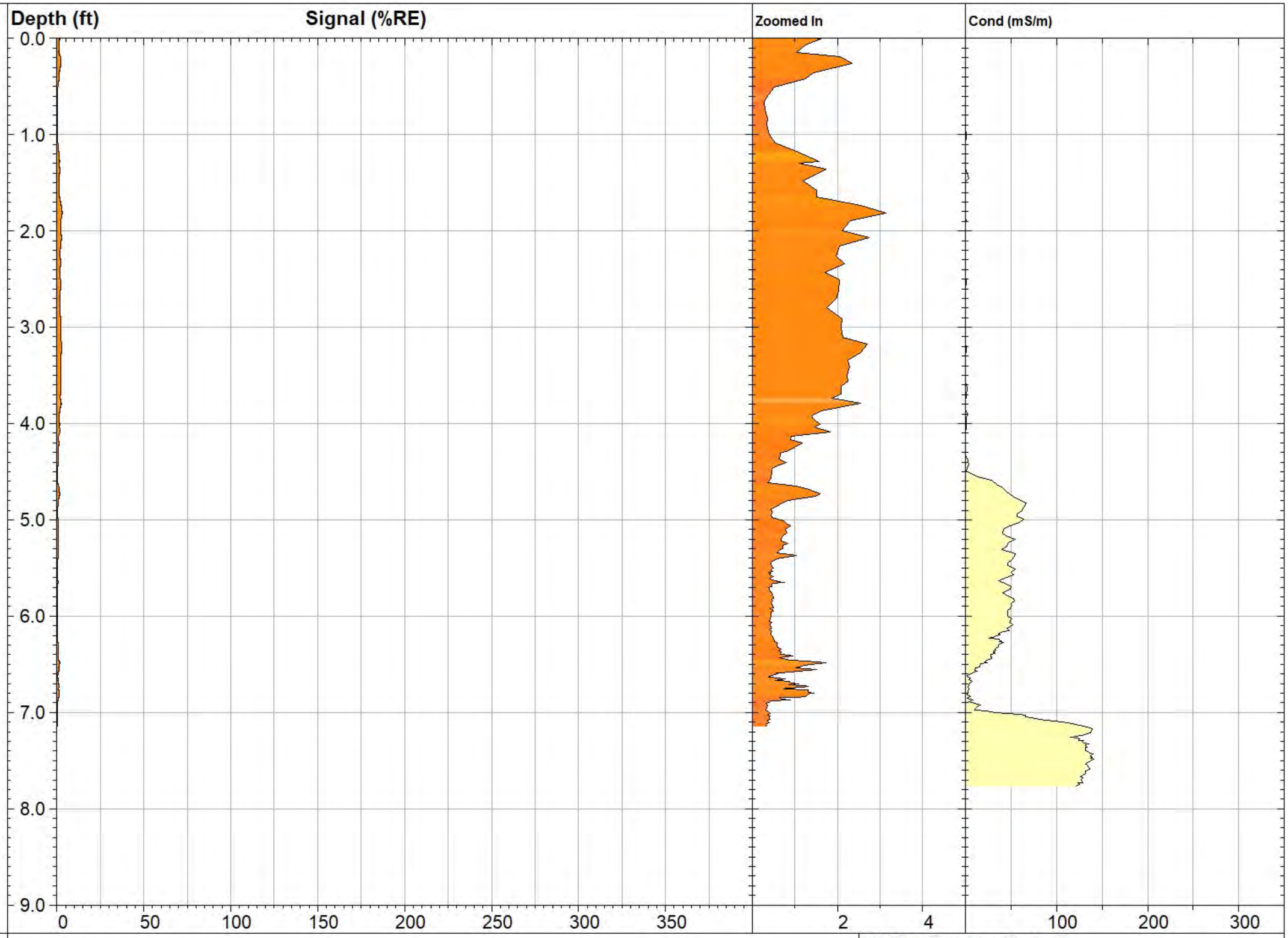
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **34.76 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **361.3 %RE @ 26.32 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 11:18 MST**

Callouts

pre-probed to 20 ft

refusal @ 7.14 ft



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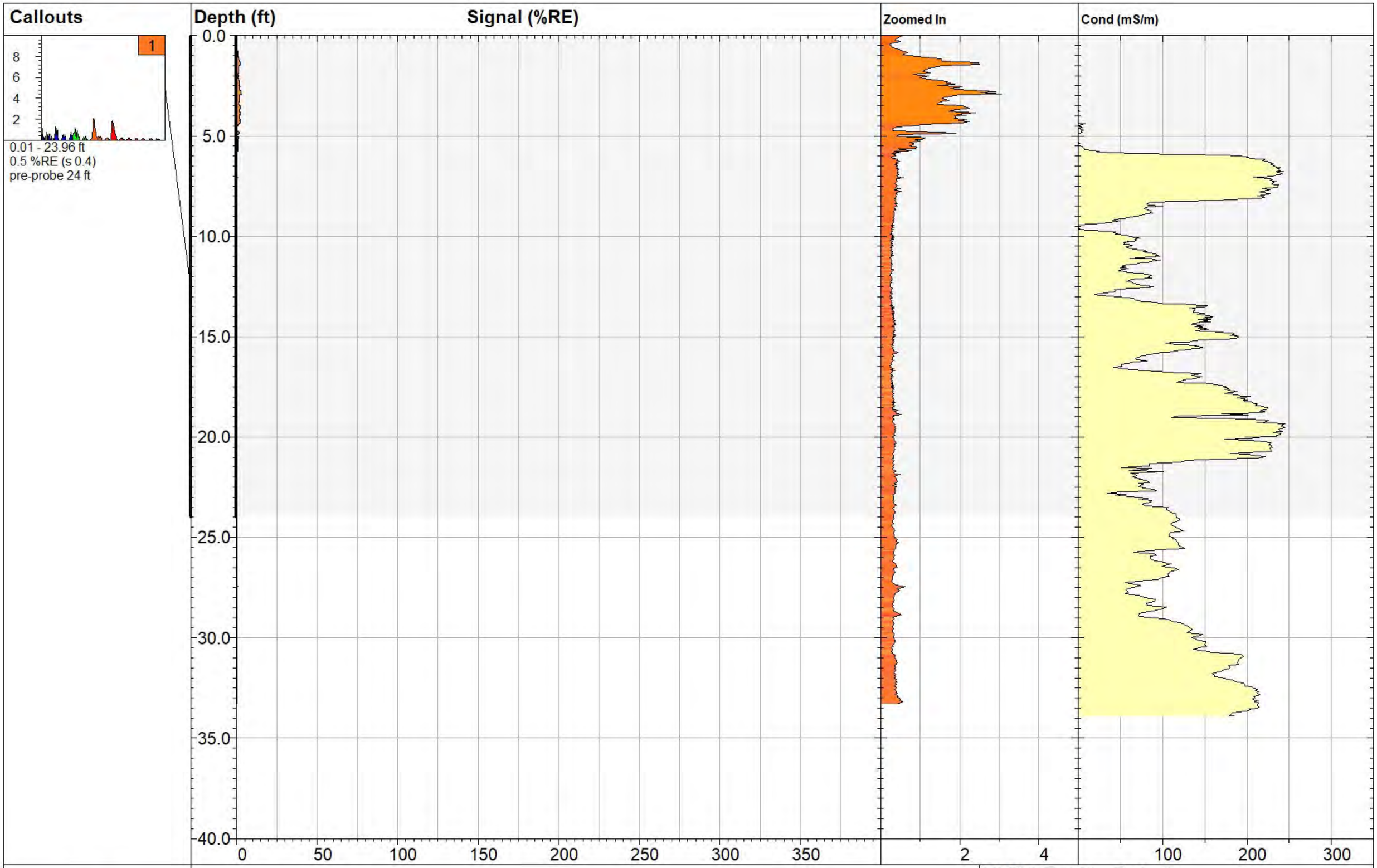
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **7.14 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **3.1 %RE @ 1.81 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 10:45 MST**



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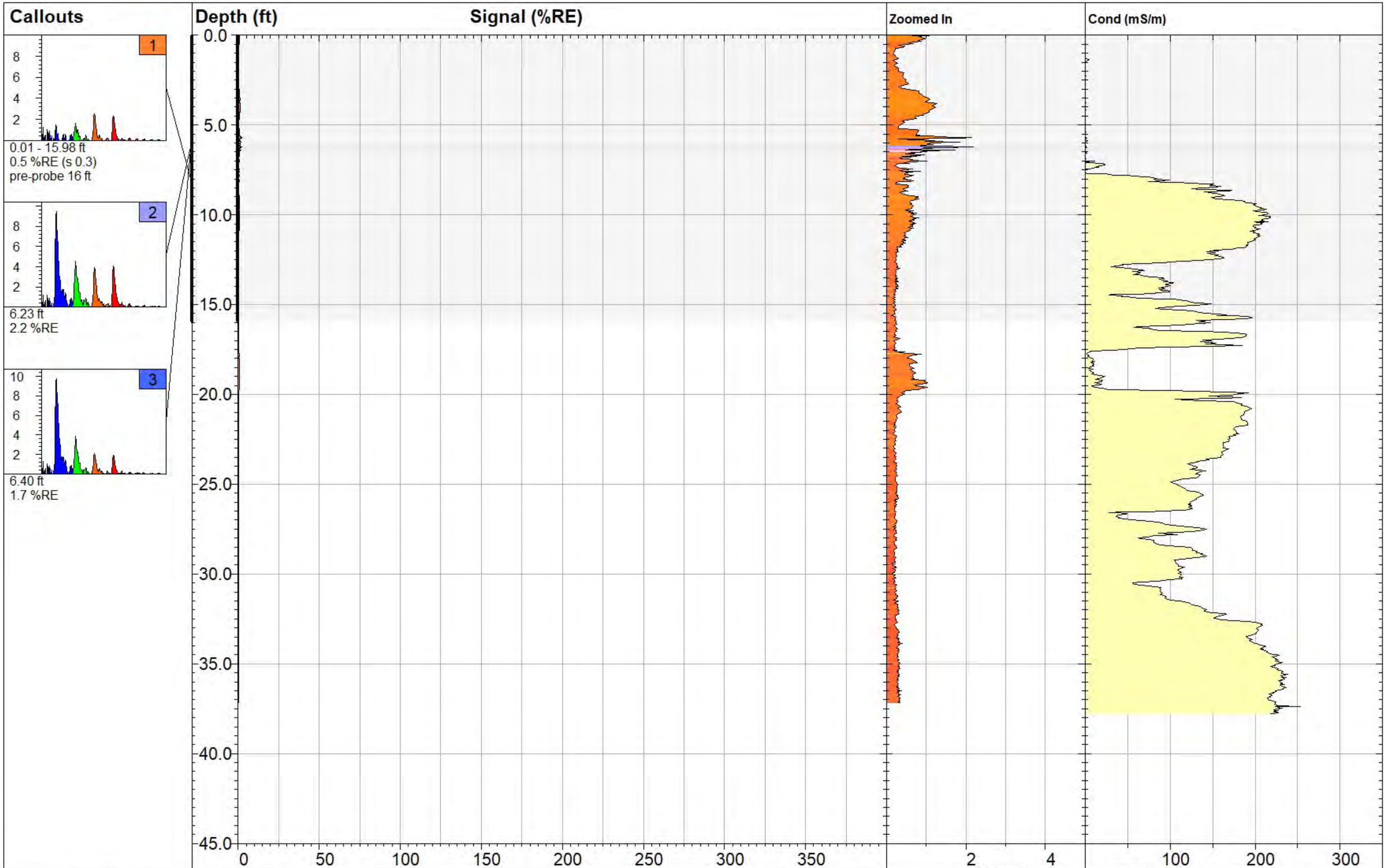
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **33.28 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **3.1 %RE @ 2.90 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 13:57 MST**



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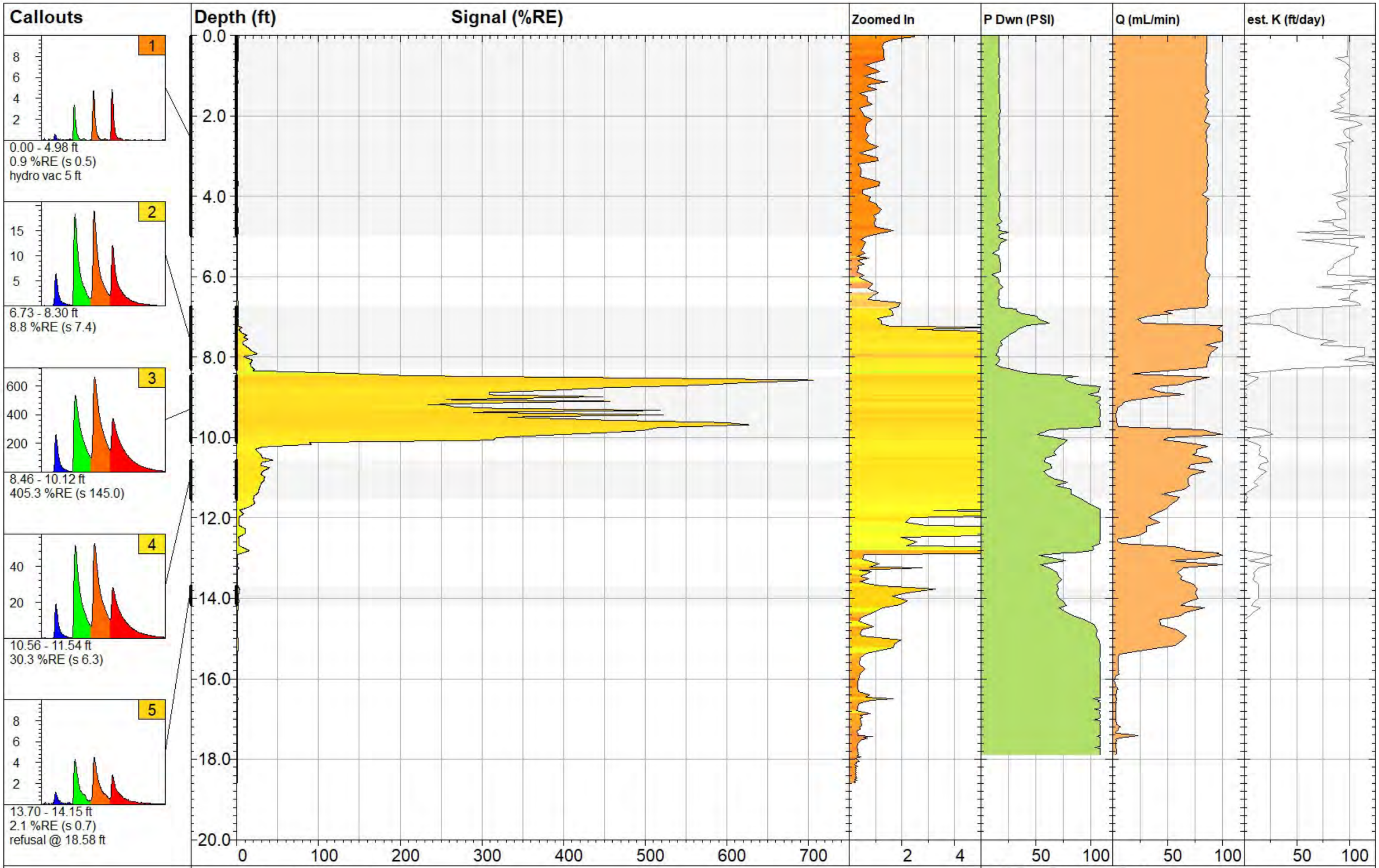
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **37.15 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **2.2 %RE @ 6.23 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 14:59 MST**



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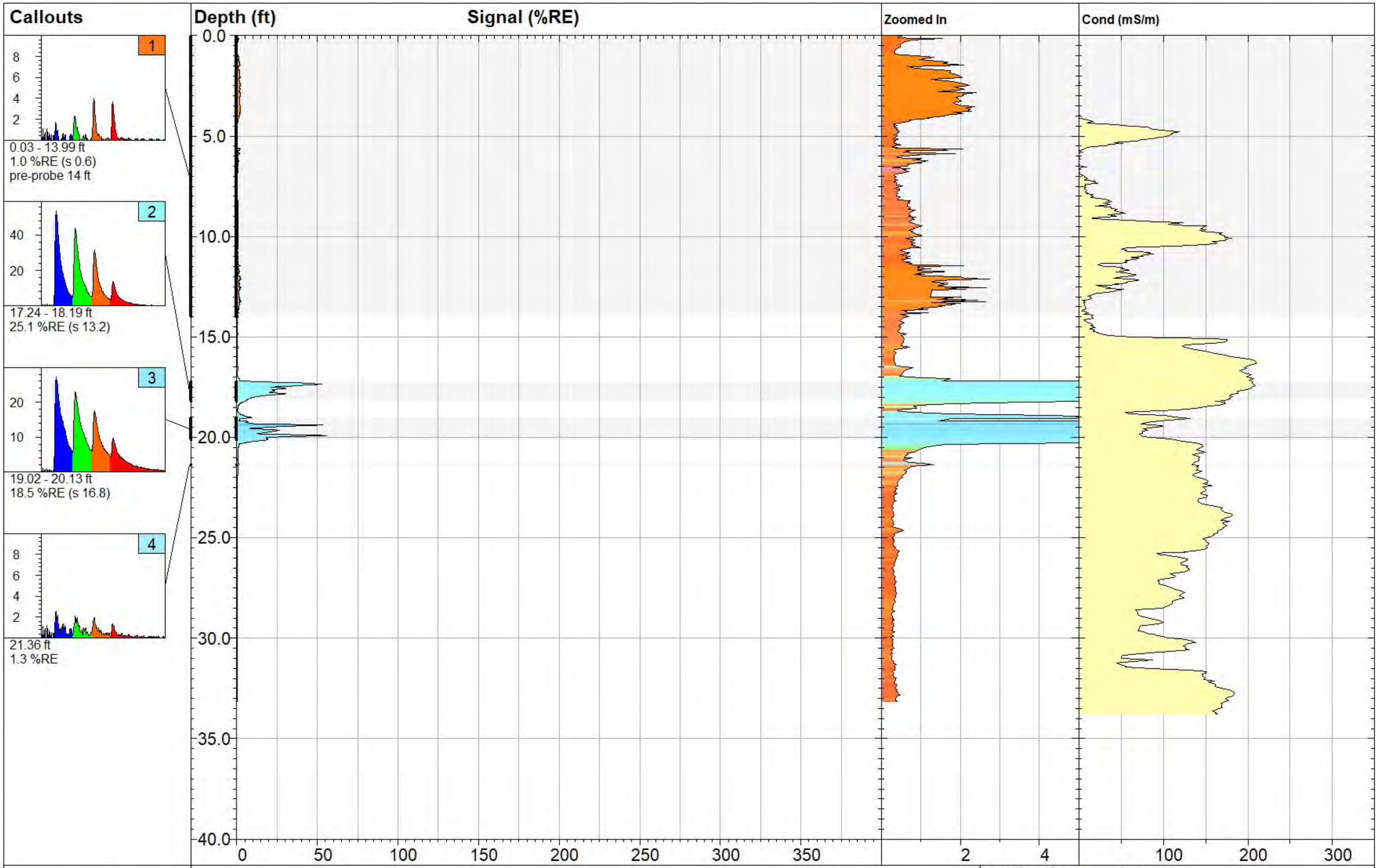
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **18.58 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **708.9 %RE @ 8.57 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 14:28 MST**



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MKTF-LIF-67

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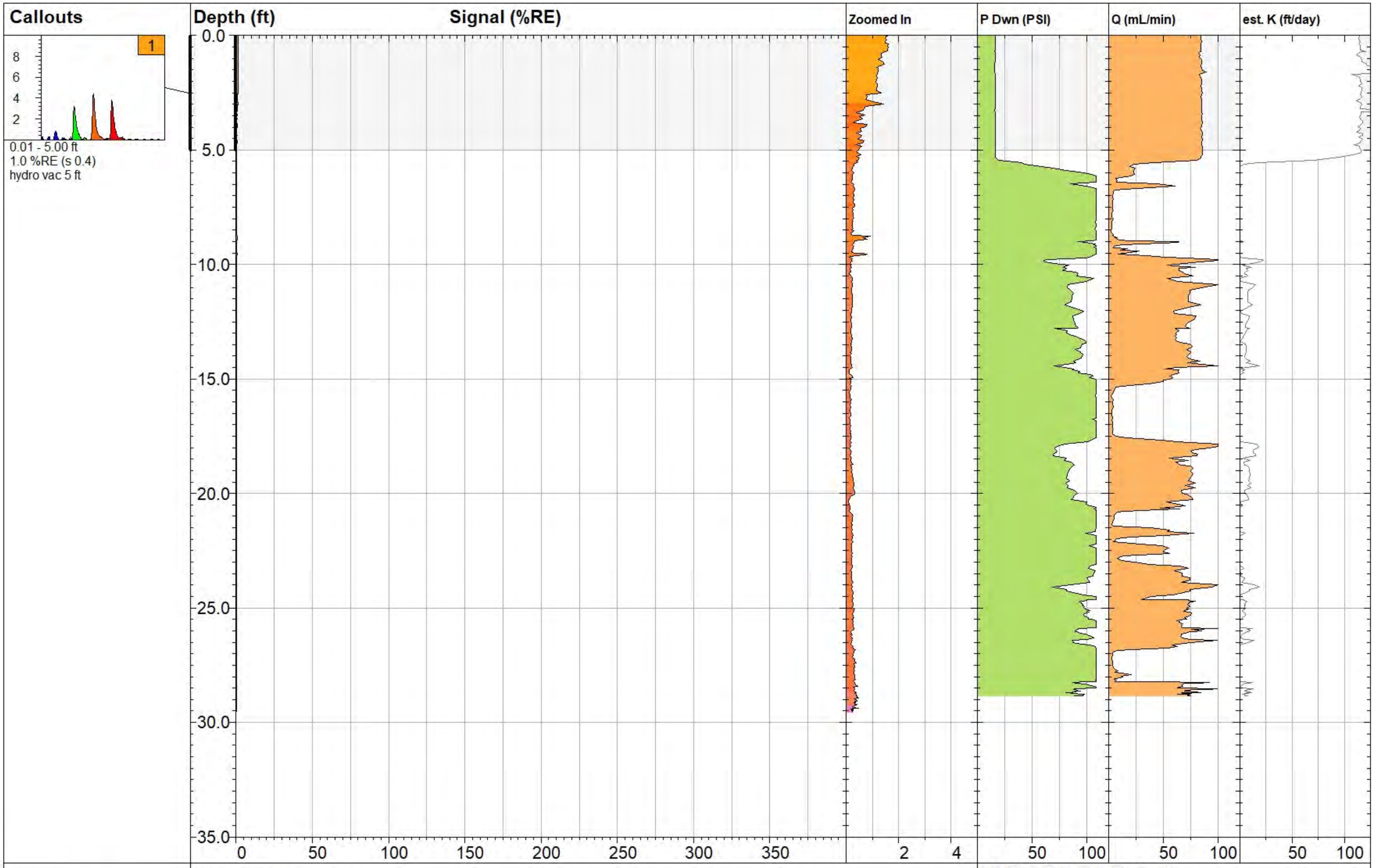
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **33.16 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **56.4 %RE @ 19.91 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 16:38 MST**



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MKTF-LIF-68

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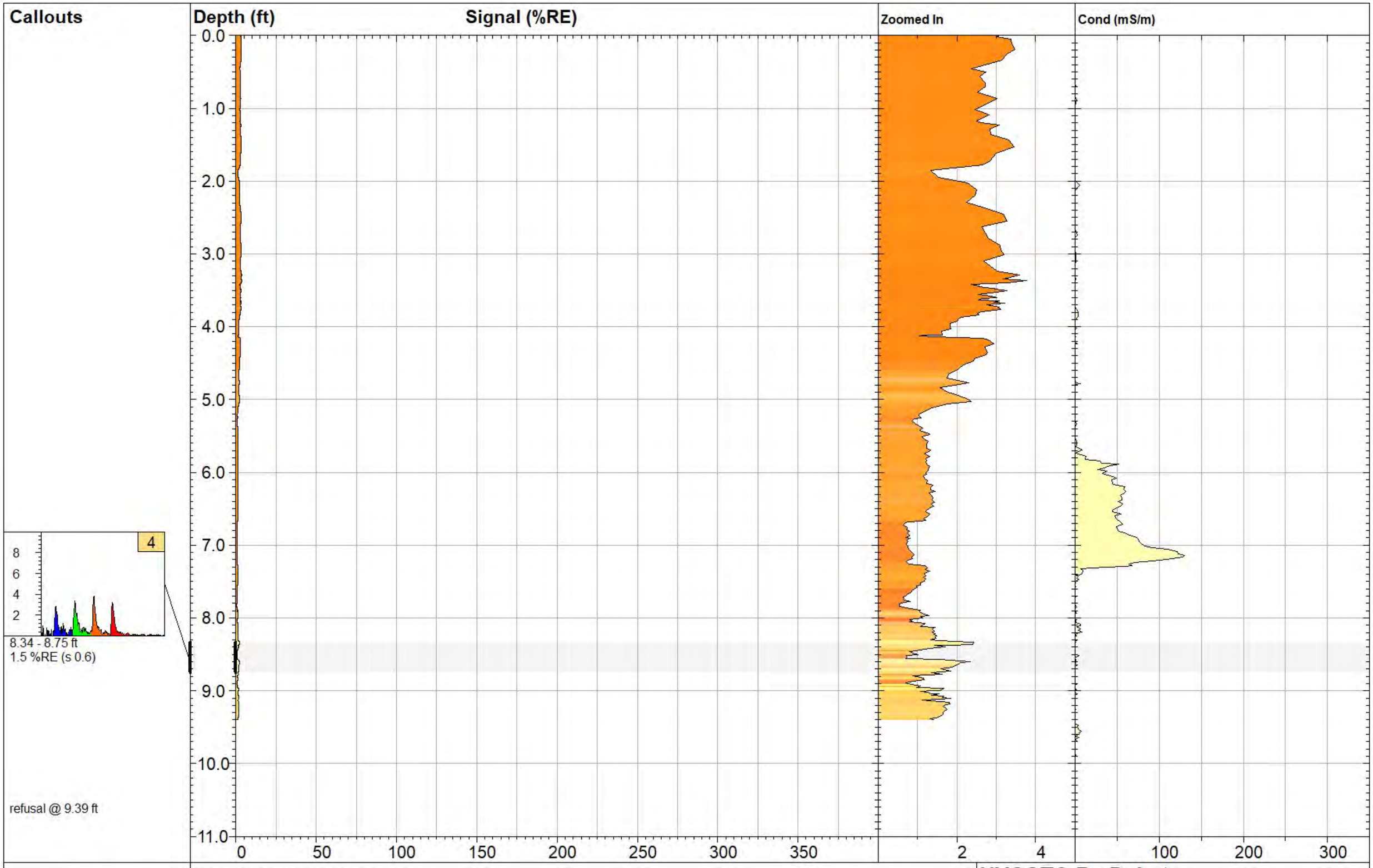
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **29.54 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **1.6 %RE @ 0.51 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 10:02 MST**



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UVOST® By Dakota
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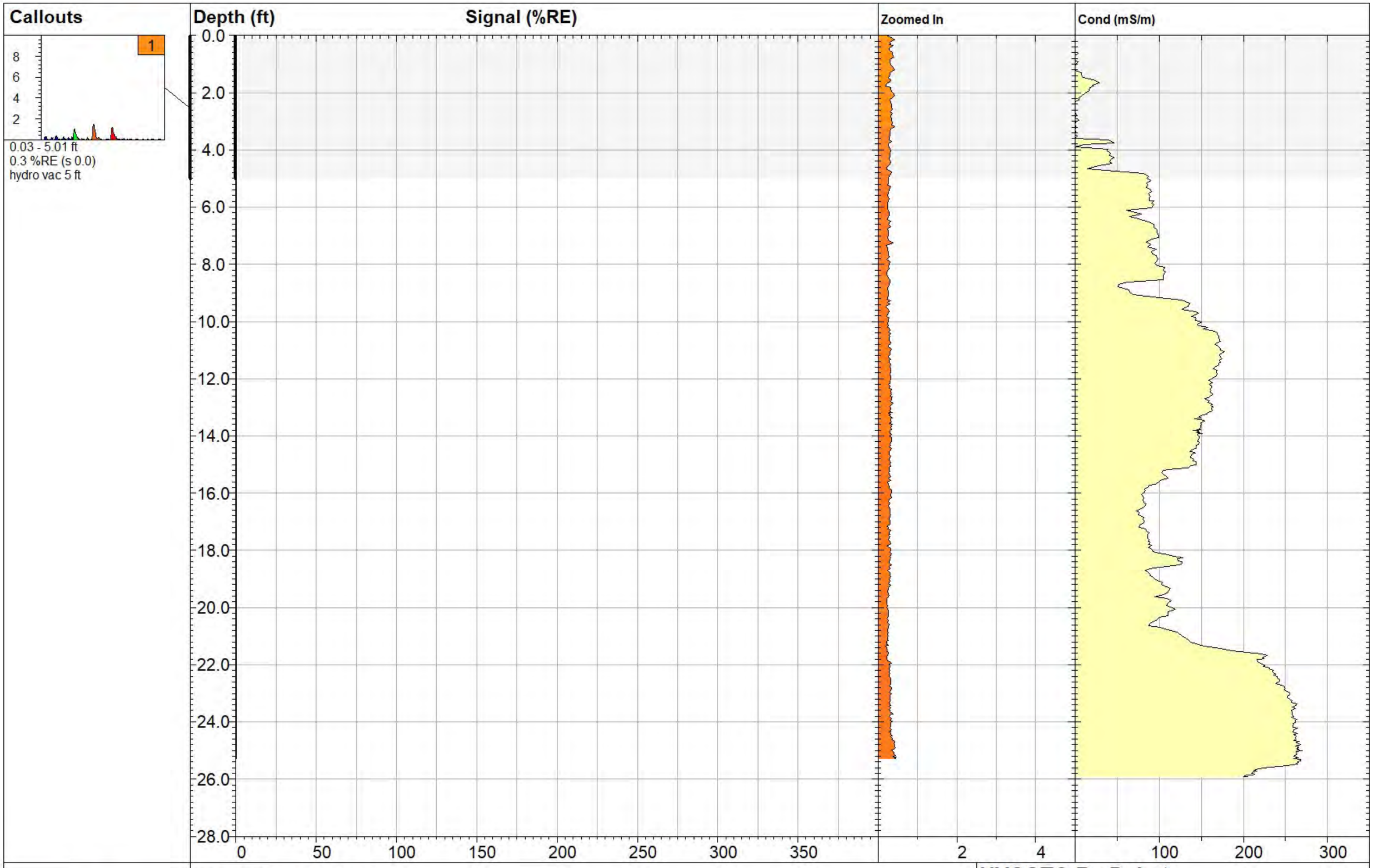
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **9.39 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **3.8 %RE @ 3.36 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 08:33 MST**



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MKTF-LIF-71

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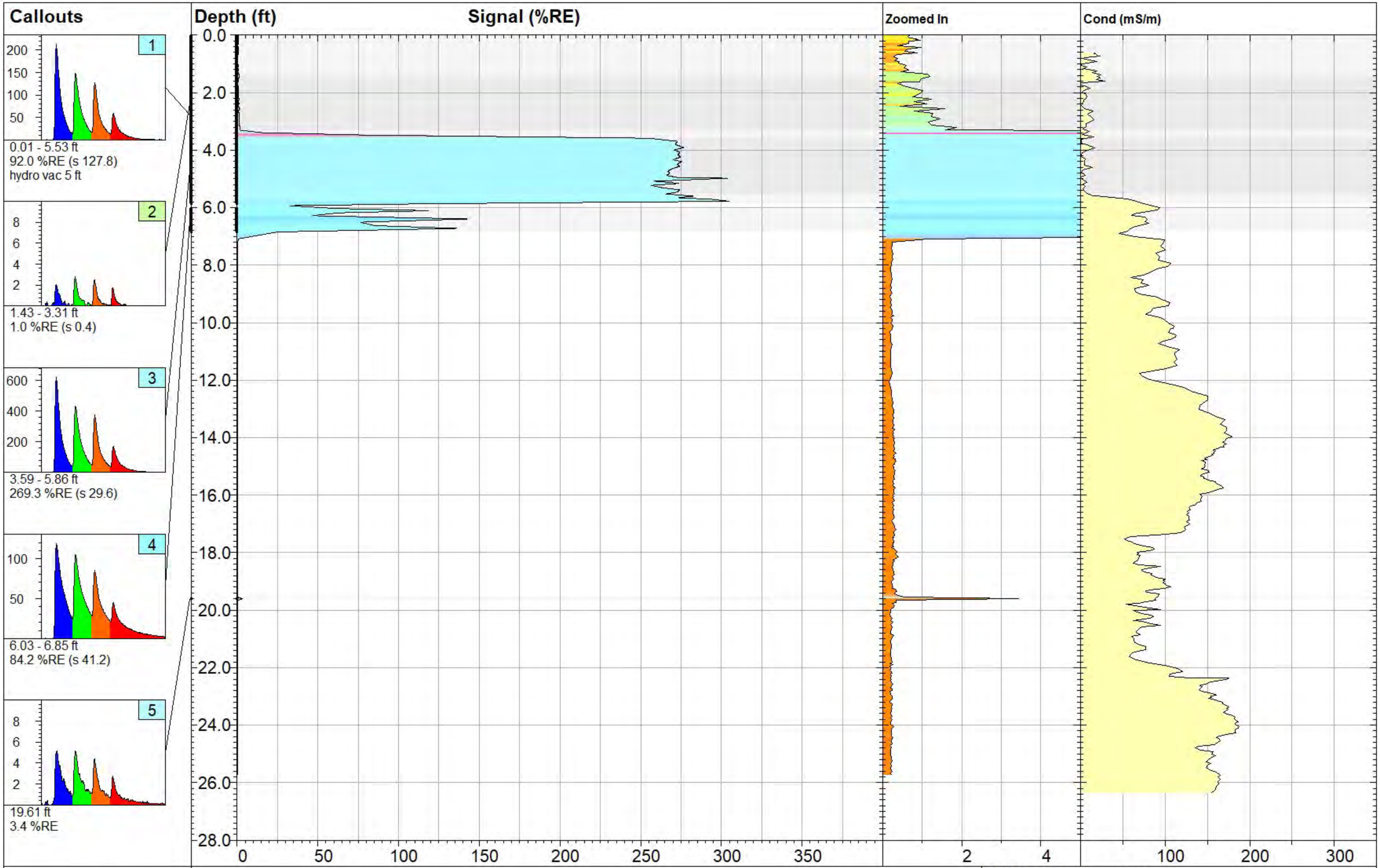
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **25.29 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **0.5 %RE @ 25.24 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 07:54 MST**



DAKOTA TECHNOLOGIES WWW.DAKOTATECHNOLOGIES.COM	**MKTF-LIF-72**	**UVOST® By Dakota** www.DakotaTechnologies.com
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **25.72 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **305.1 %RE @ 5.78 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 08:37 MST**

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MKTF-LIF-73

UVOST® By Dakota
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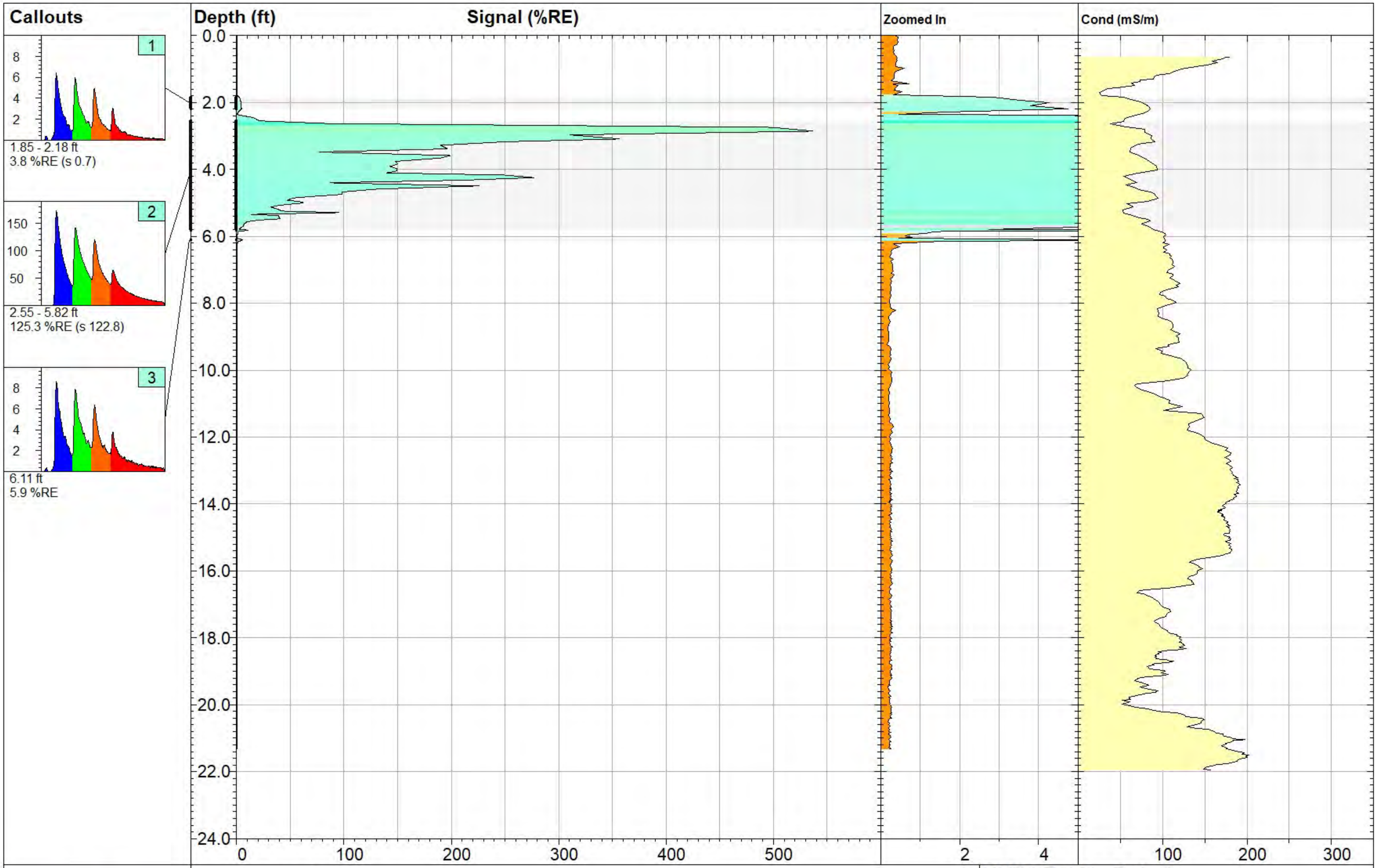
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **21.59 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **0.6 %RE @ 0.30 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 11:26 MST**



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MKTF-LIF-74

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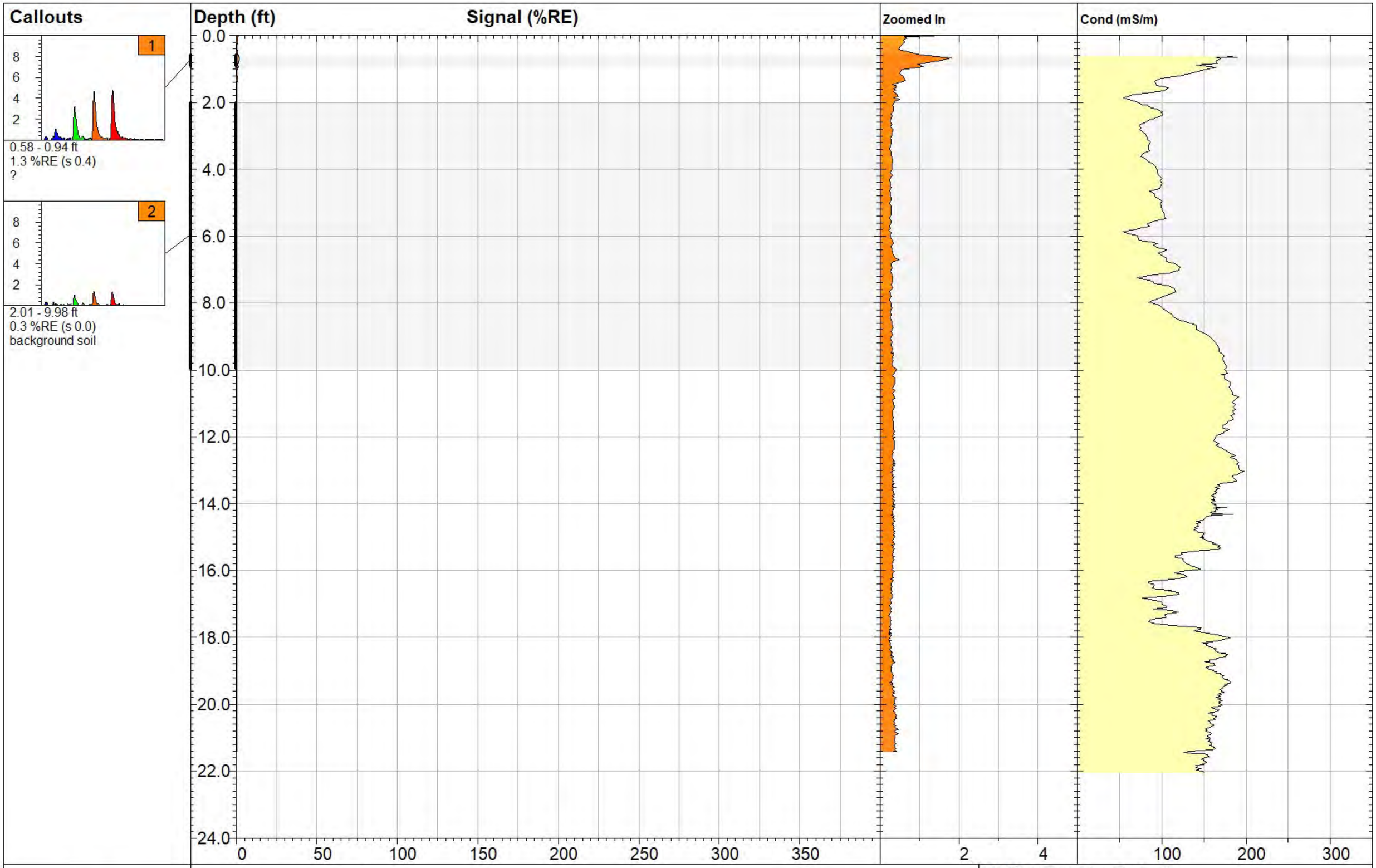
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **21.33 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **537.6 %RE @ 2.86 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 09:16 MST**



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MKTF-LIF-75

UVOST® By Dakota
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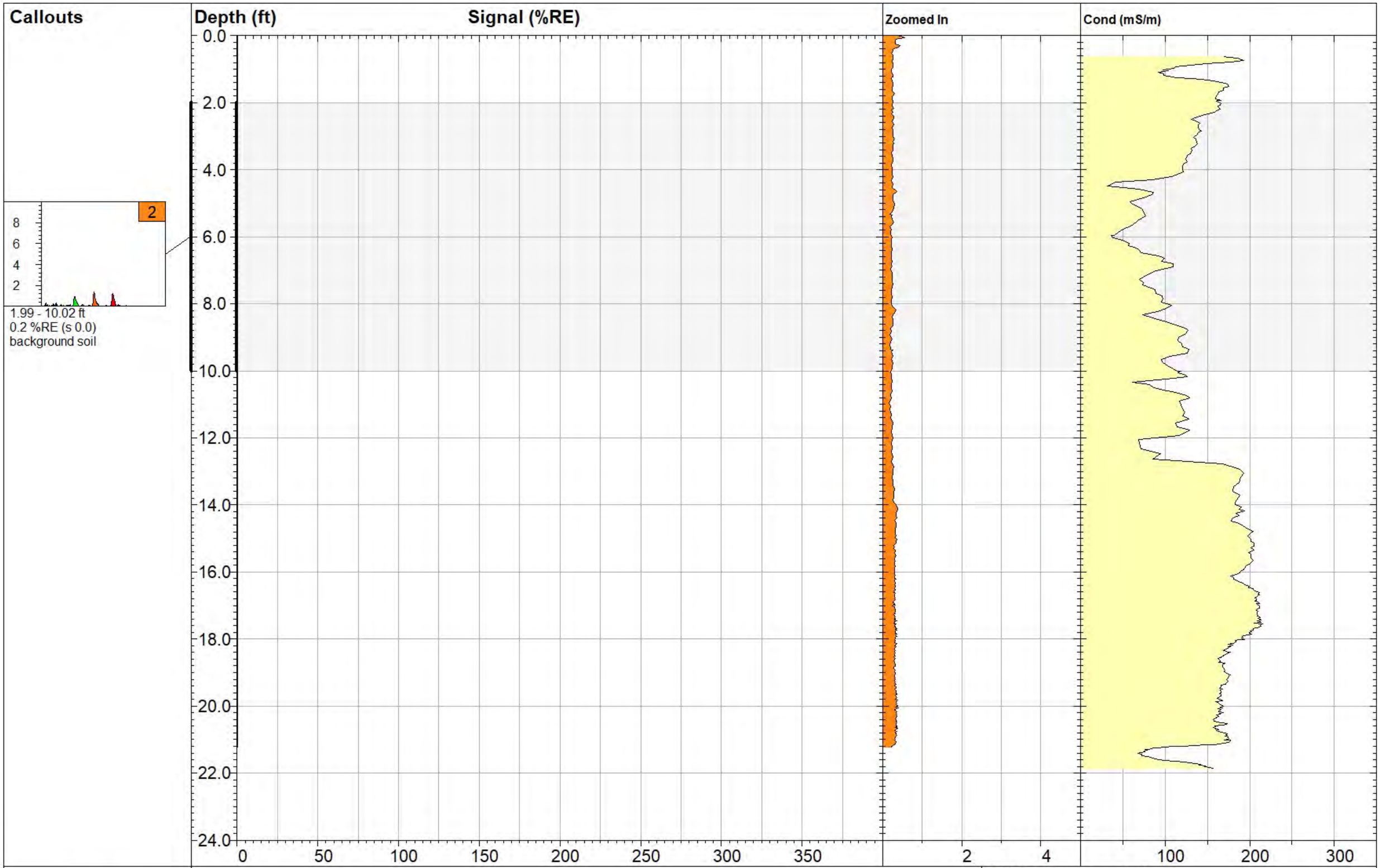
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **21.41 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **1.8 %RE @ 0.66 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 11:56 MST**



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MKTF-LIF-76

UVOST® By Dakota
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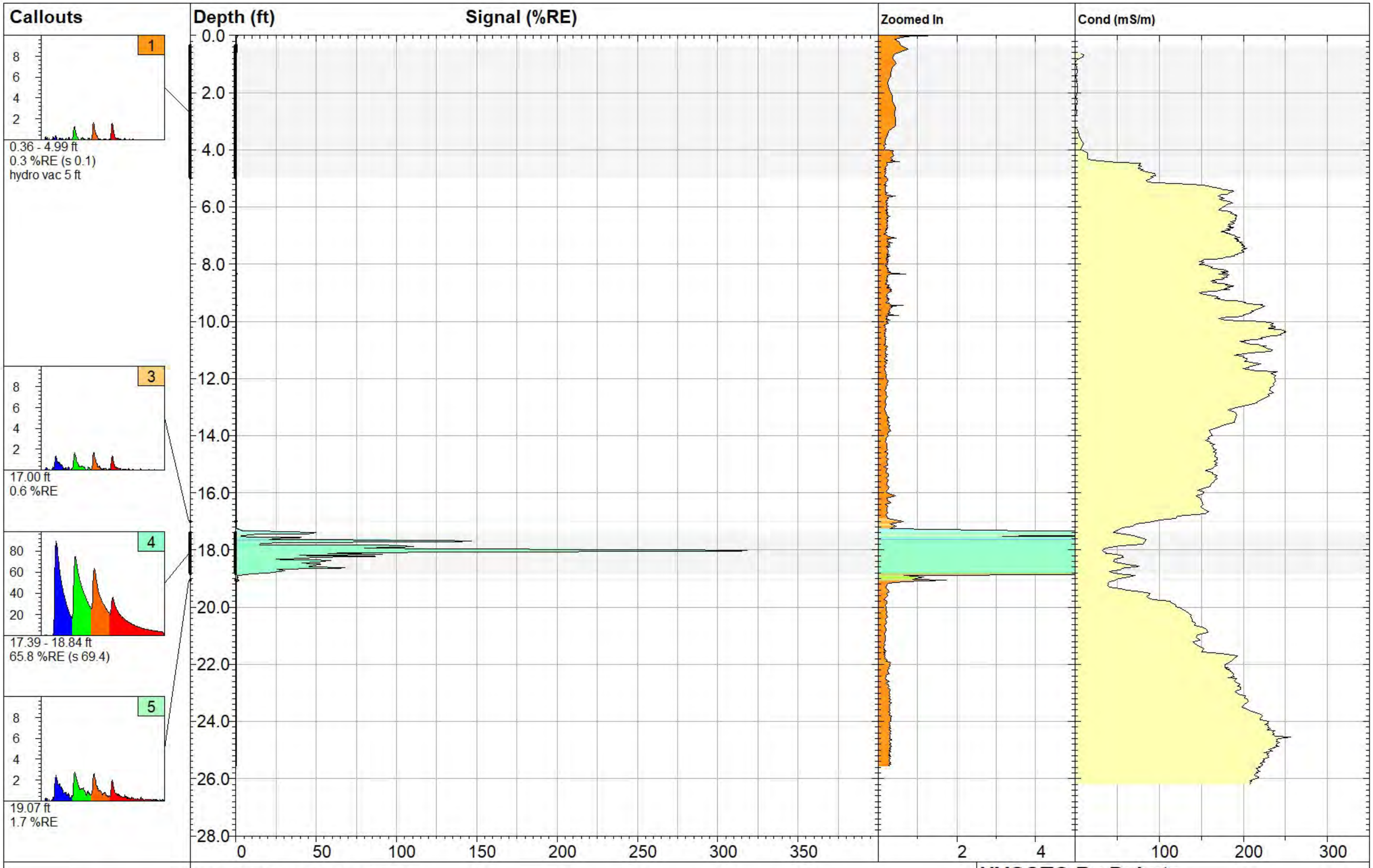
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **21.23 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **0.5 %RE @ 0.05 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 12:34 MST**



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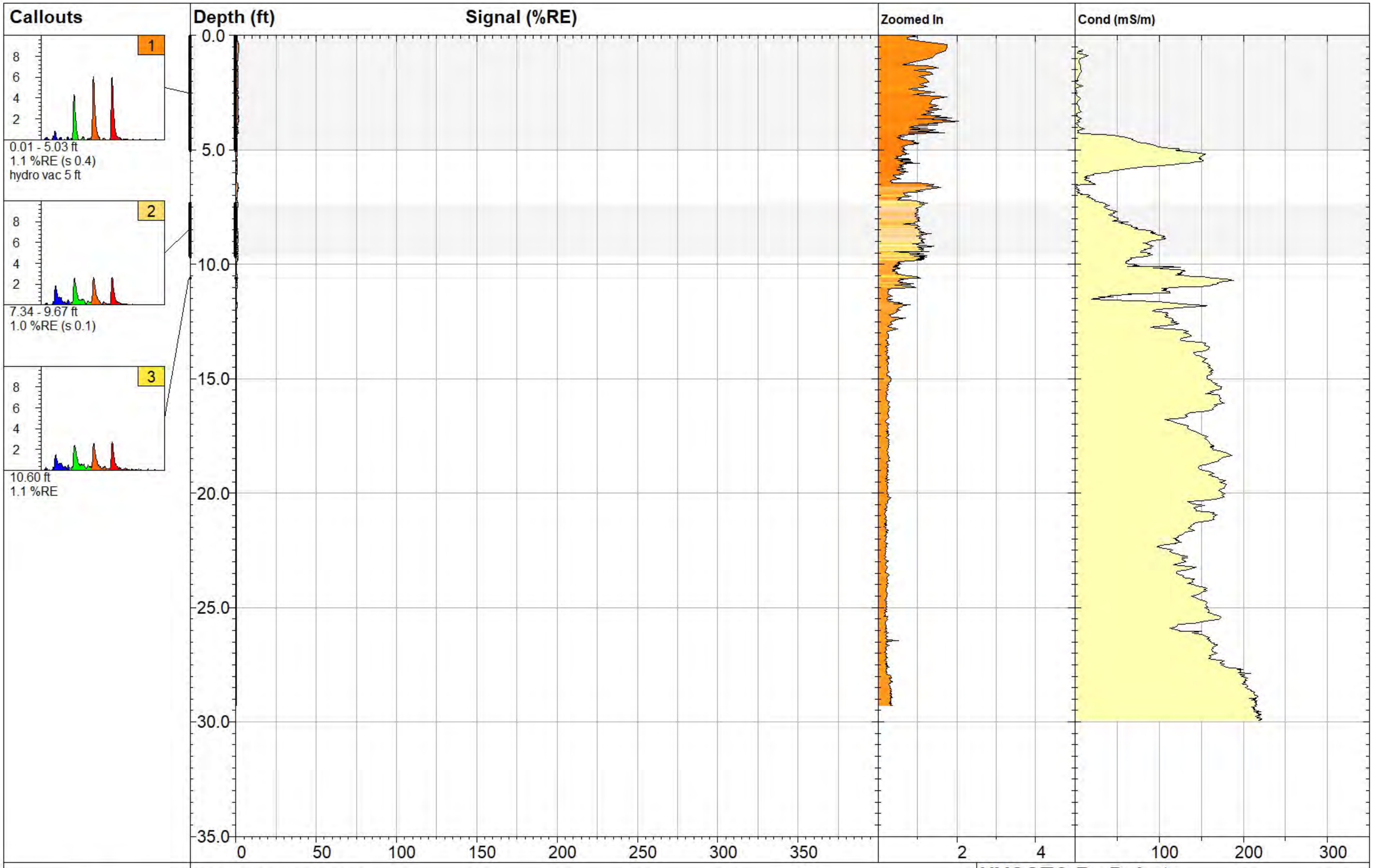
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **25.55 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **320.9 %RE @ 18.03 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 13:05 MST**



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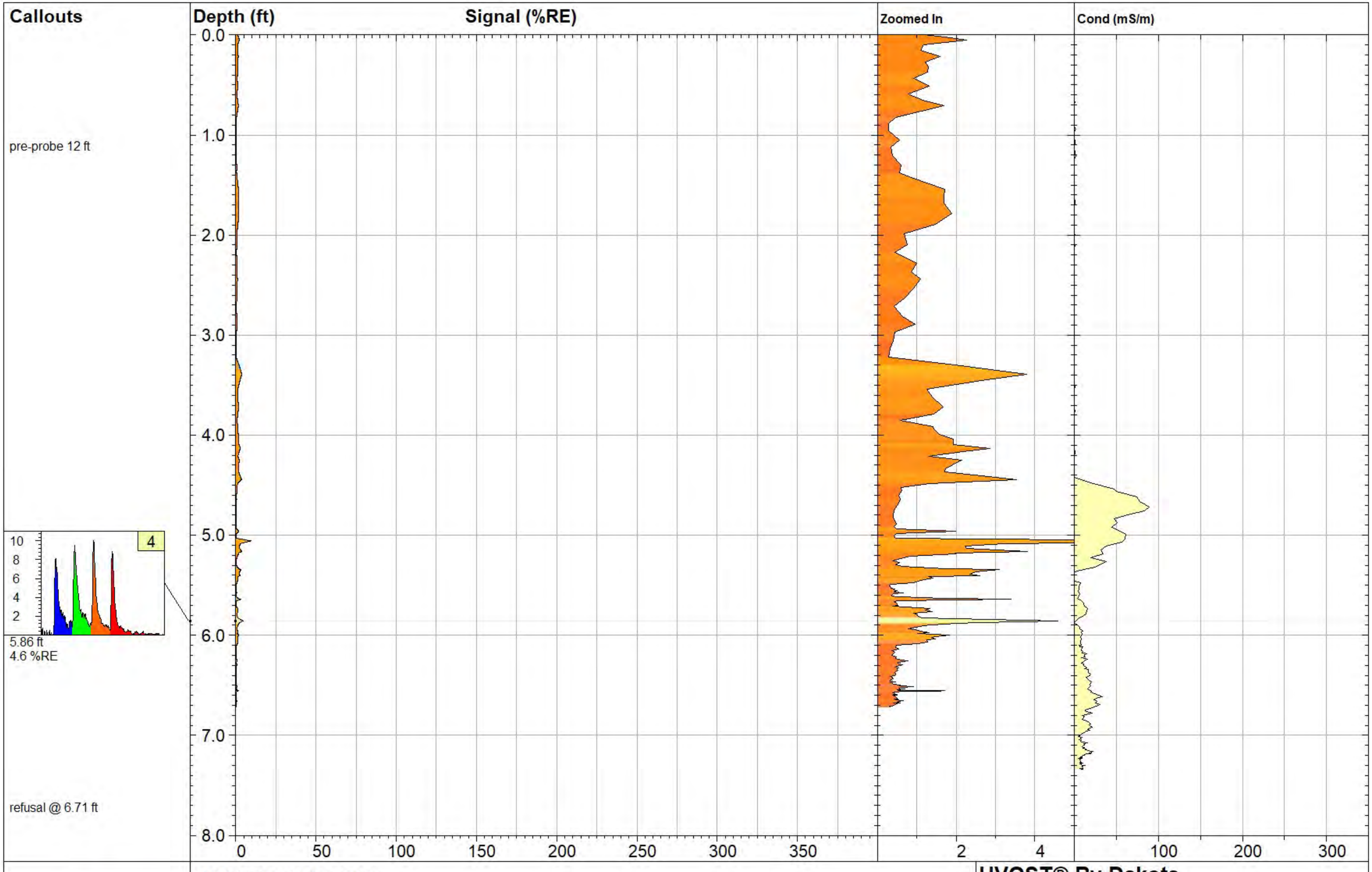
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **29.29 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **2.0 %RE @ 3.74 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 13:47 MST**



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MKTF-LIF-79

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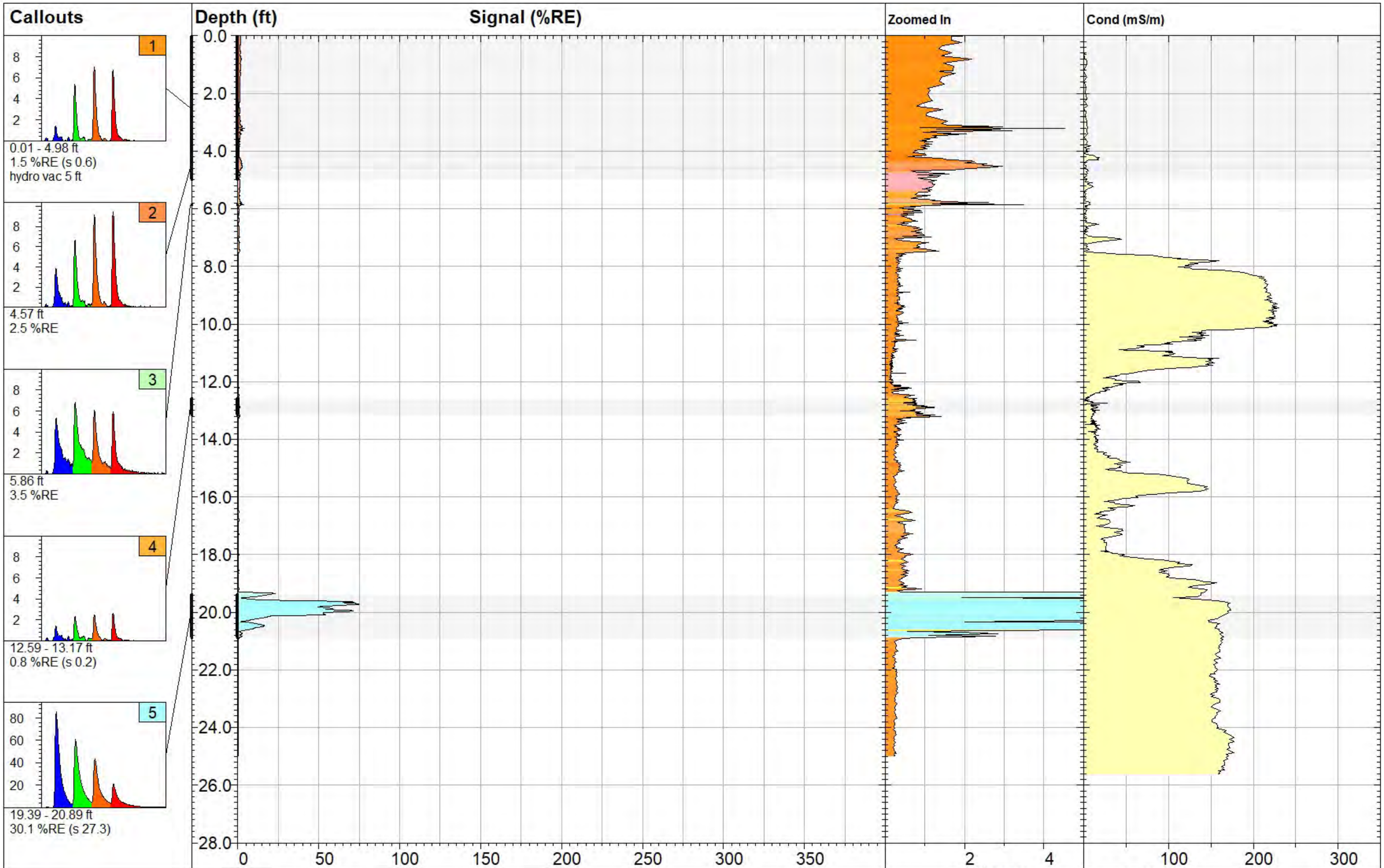
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **6.71 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **9.5 %RE @ 5.06 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-03 16:07 MST**



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MKTF-LIF-79A

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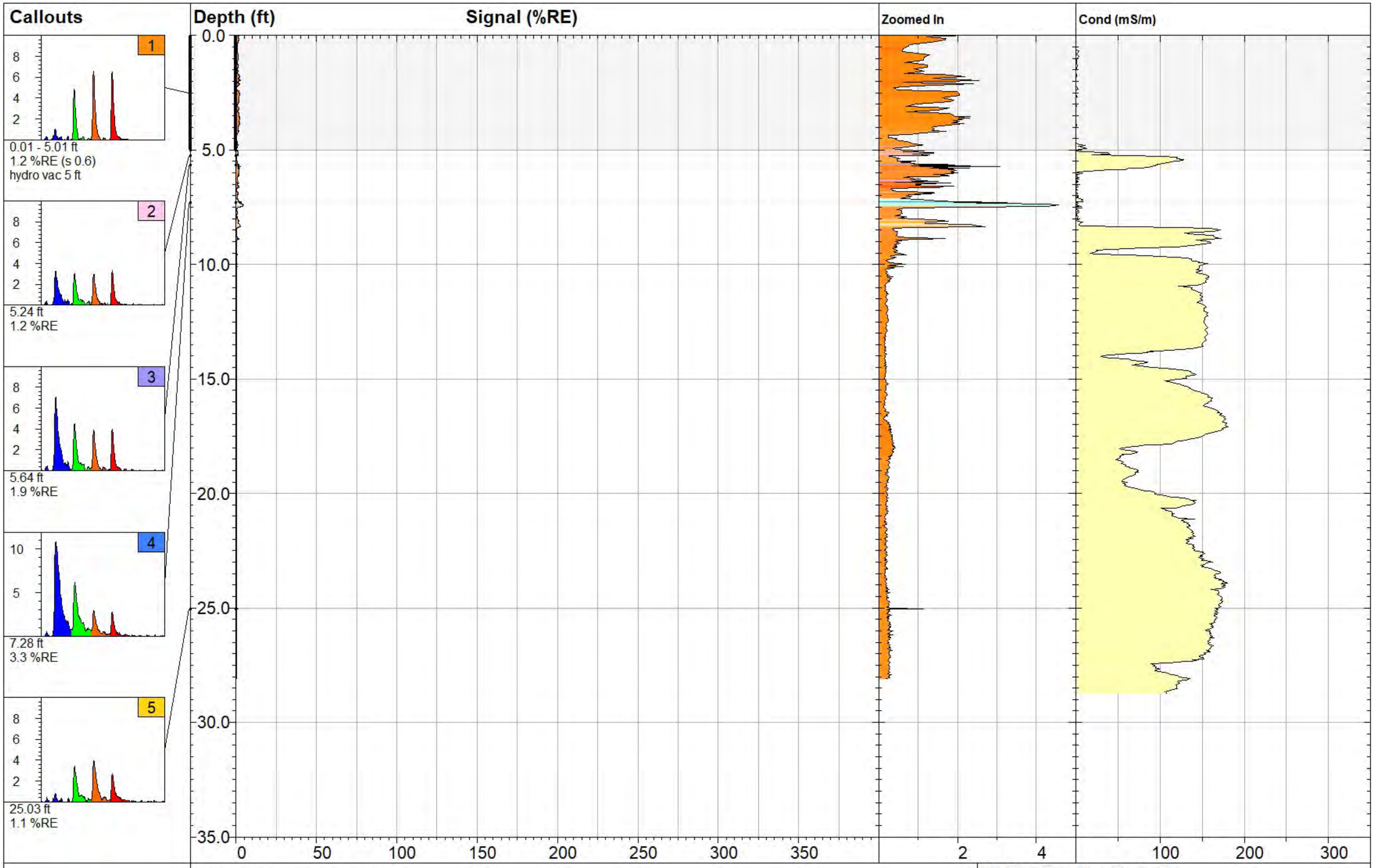
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **24.99 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **75.0 %RE @ 19.73 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 14:33 MST**



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MKTF-LIF-80

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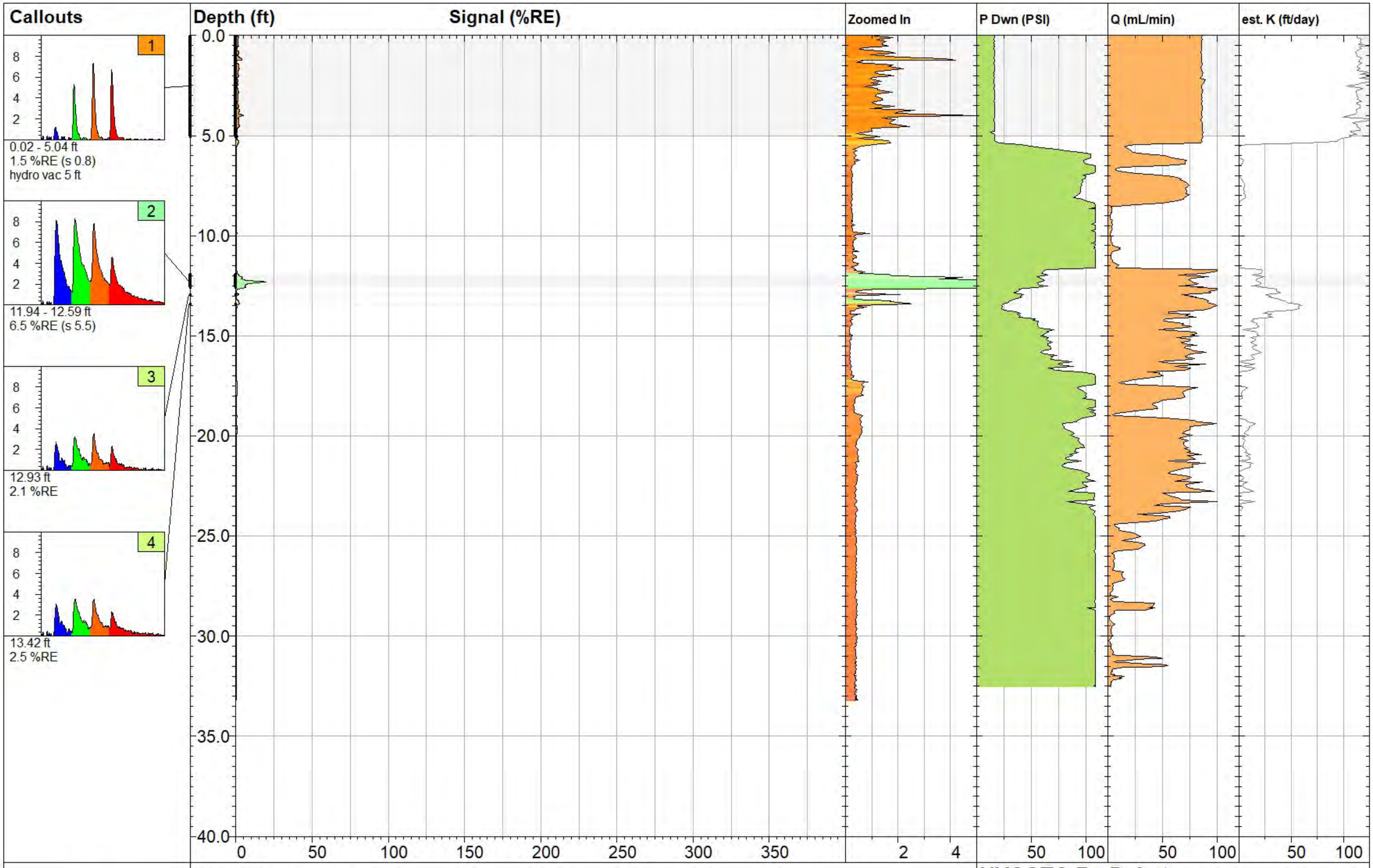
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **28.10 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **4.6 %RE @ 7.39 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 15:20 MST**



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MKTF-LIF-81

UVOST® By Dakota
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Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **33.21 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **20.0 %RE @ 12.31 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-02 09:21 MST**

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MKTF-LIF-82

UVOST® By Dakota
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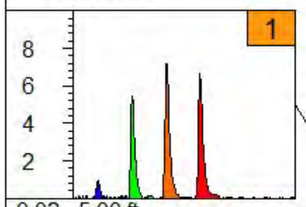
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **15.07 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **10.1 %RE @ 4.84 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 16:13 MST**

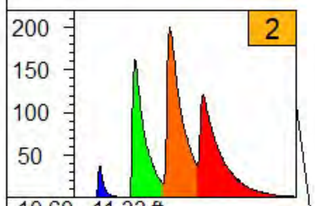
Callouts

1



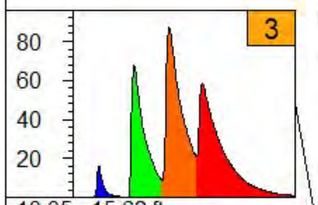
0.02 - 5.00 ft
1.3 %RE (s 1.1)
hydro vac 5 ft

2



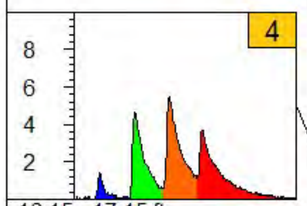
10.60 - 11.33 ft
108.8 %RE (s 64.3)

3



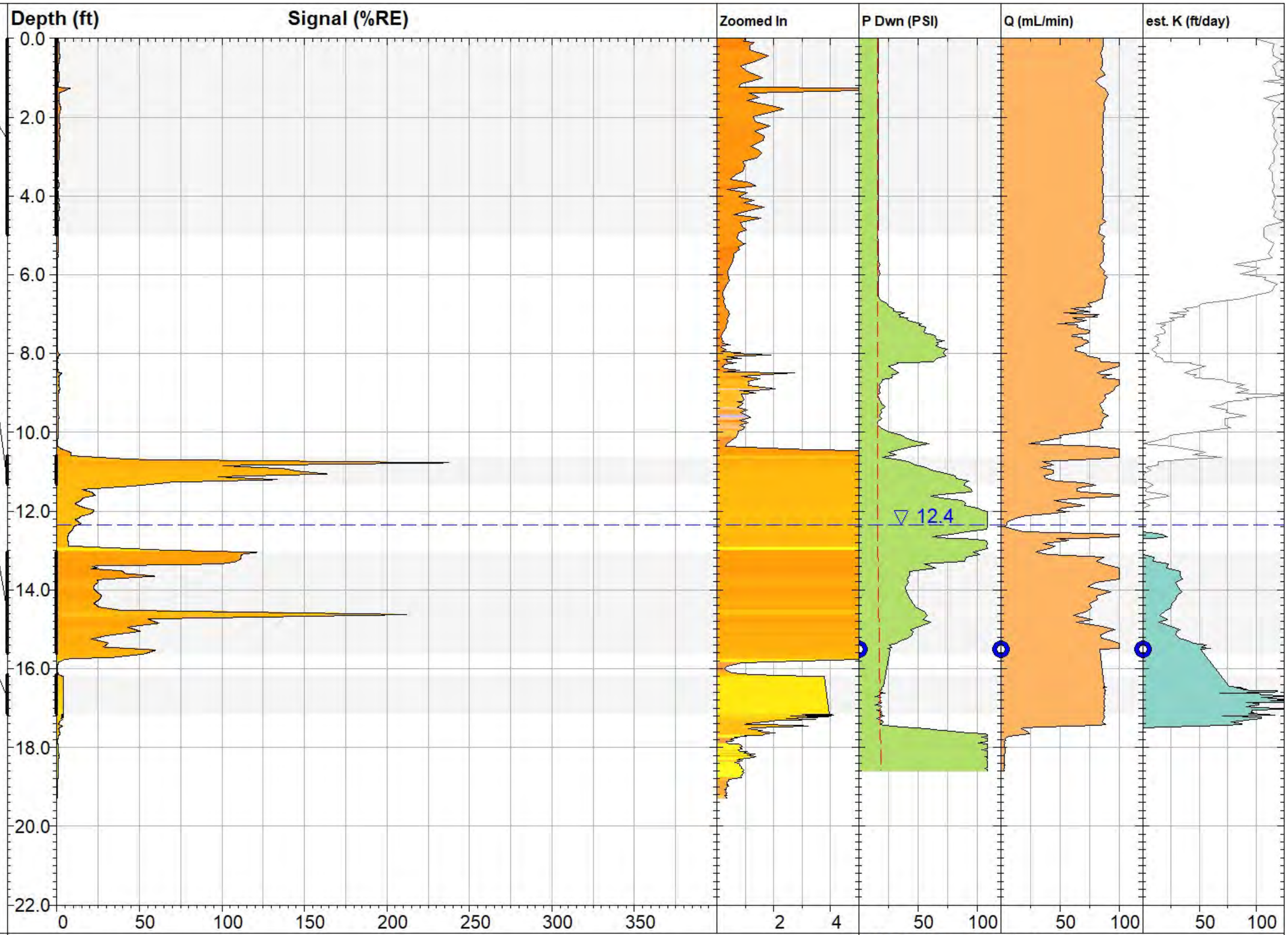
13.05 - 15.62 ft
52.9 %RE (s 42.9)

4



16.15 - 17.15 ft
3.1 %RE (s 1.3)
data skip

string pot got reset @16.2ft, actual refusal depth is 18.29 ft

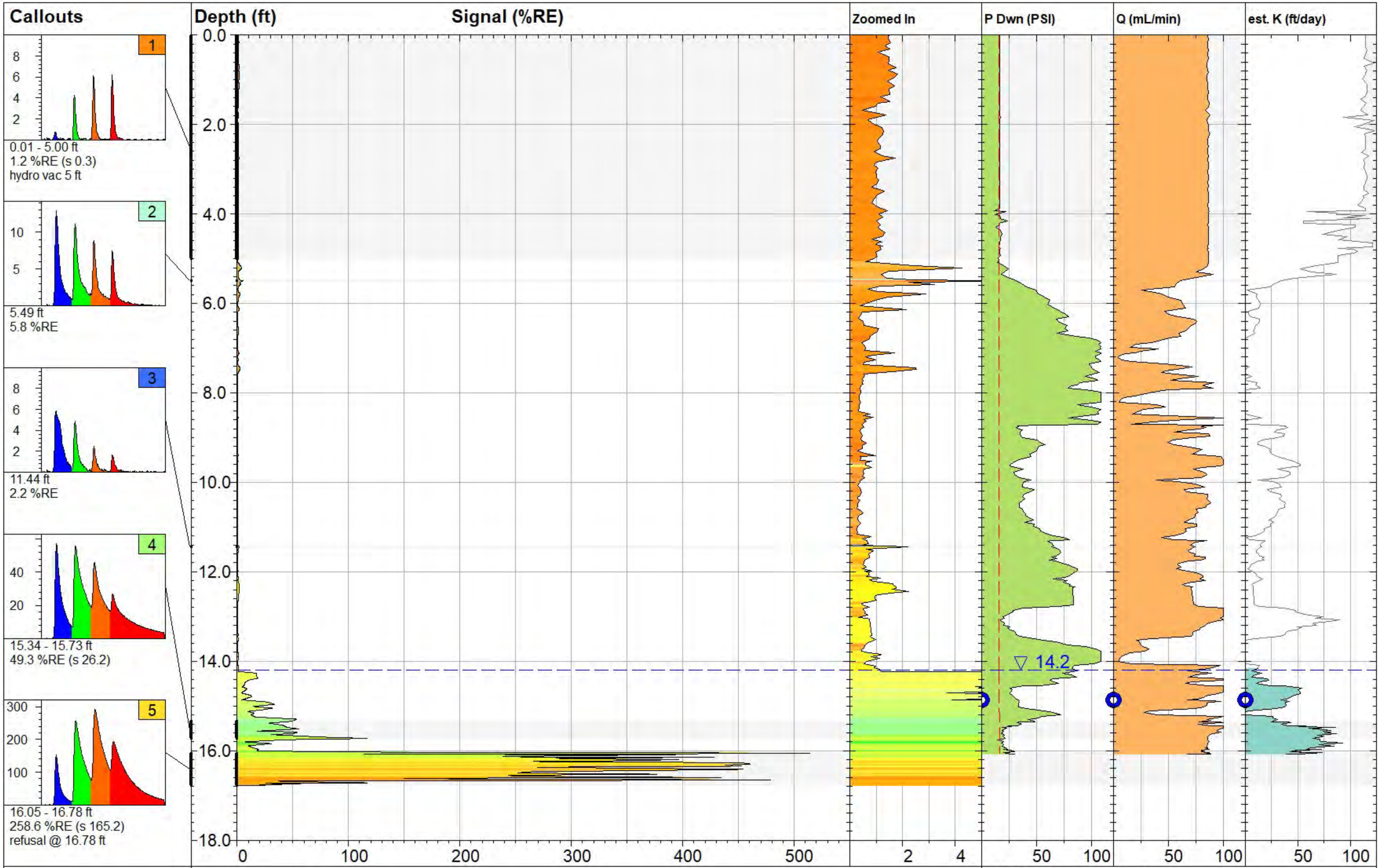


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

MKTF-LIF-83

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **19.29 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **238.7 %RE @ 10.77 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 15:02 MST**



DAKOTA TECHNOLOGIES
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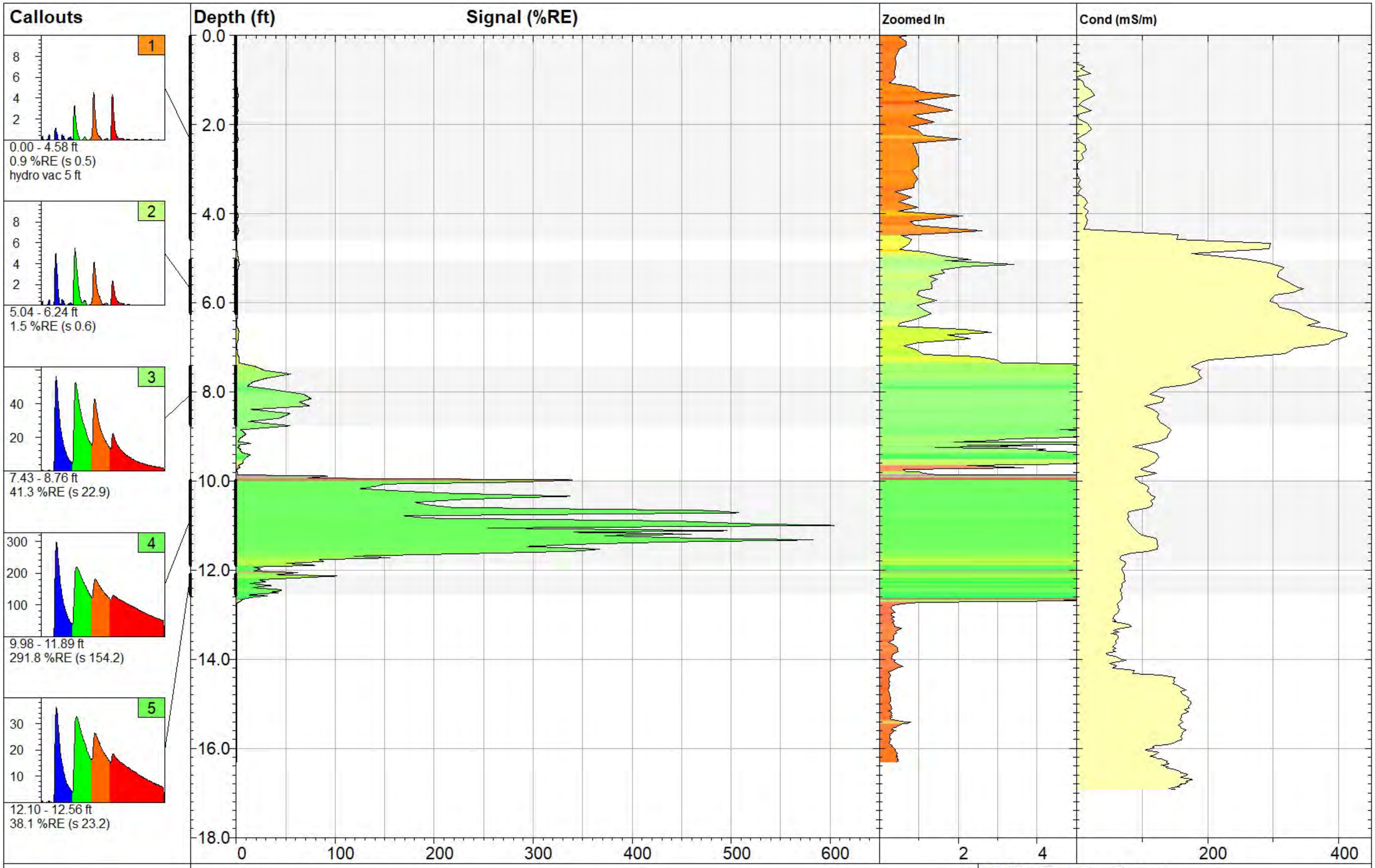
MKTF-LIF-84

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **16.78 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **524.0 %RE @ 16.06 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 15:41 MST**

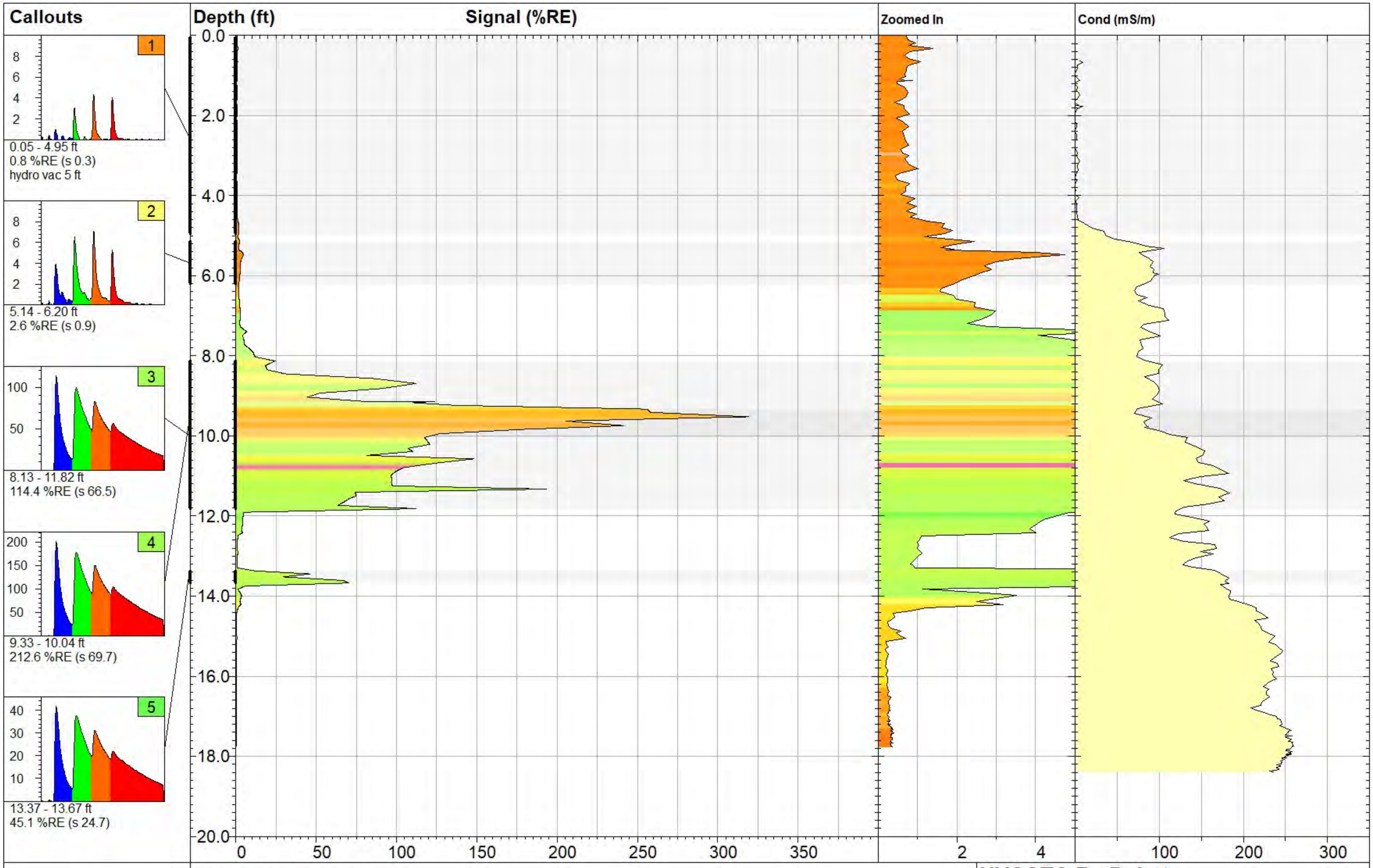


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

MKTF-LIF-85

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **16.30 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **608.7 %RE @ 11.00 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-05 09:48 MST**

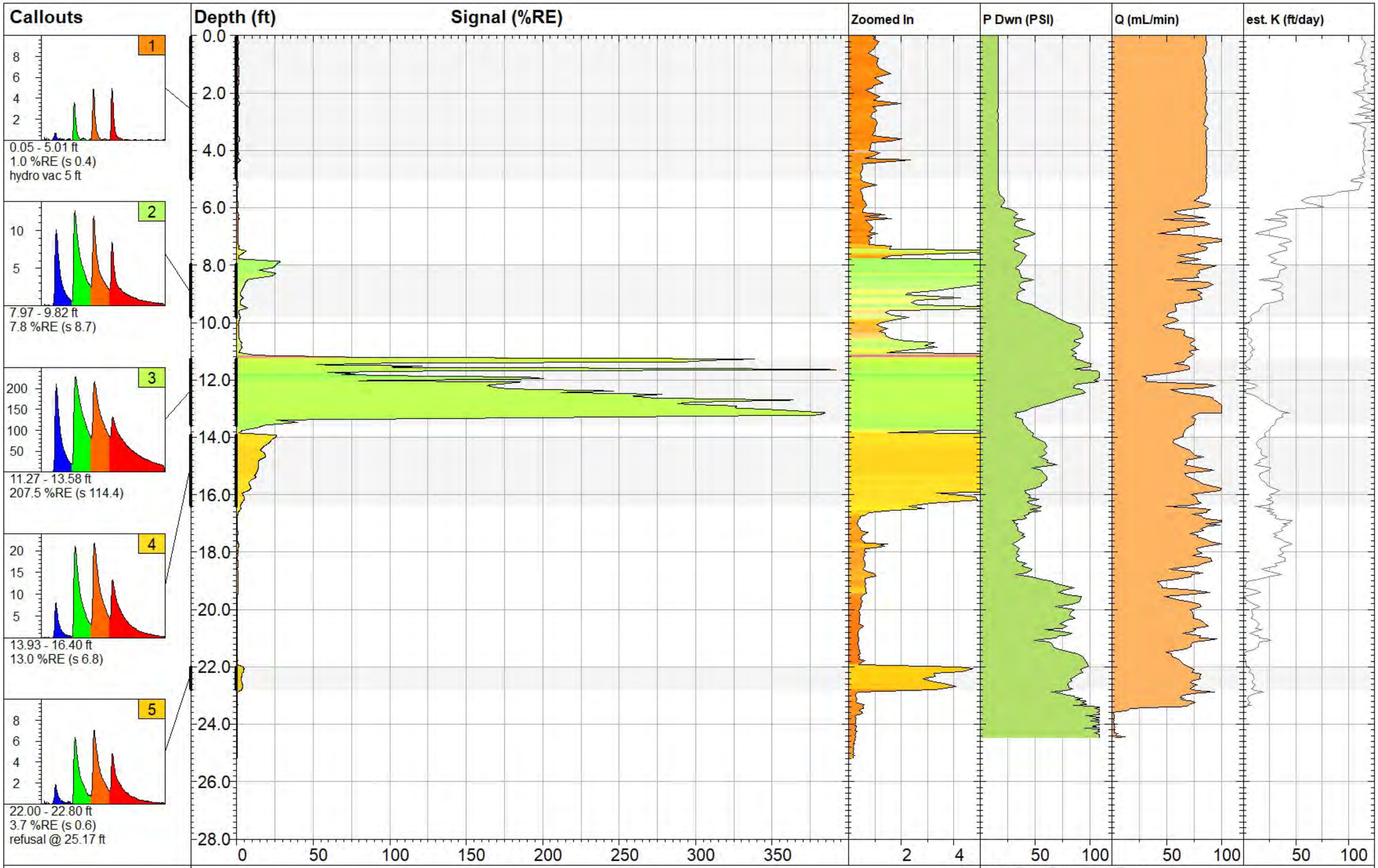


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

MKTF-LIF-86

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **17.76 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **319.3 %RE @ 9.52 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-05 09:19 MST**

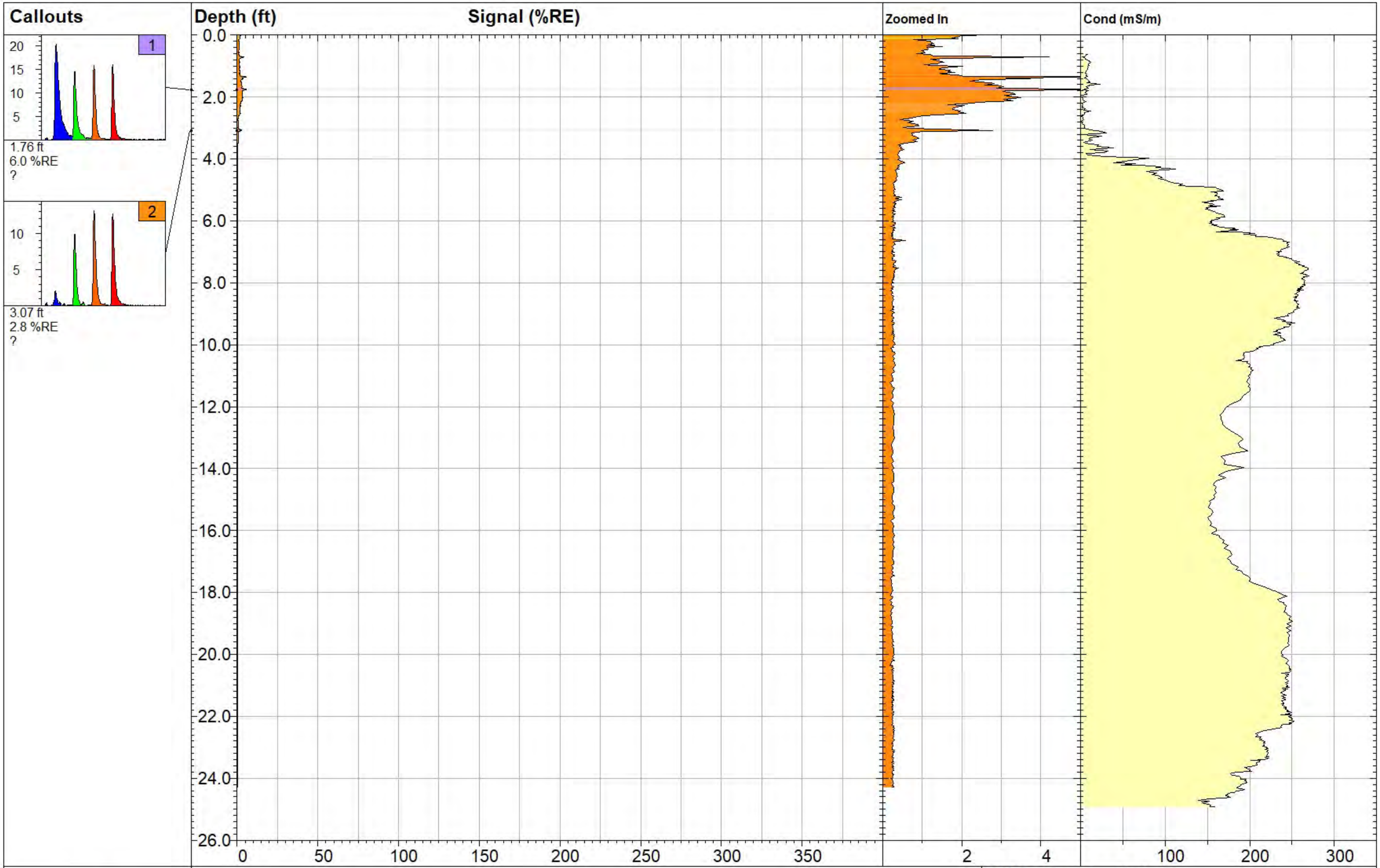


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

MKTF-LIF-87

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **25.17 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **394.3 %RE @ 11.64 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 16:22 MST**



DAKOTA TECHNOLOGIES

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MKTF-LIF-88

UVOST® By Dakota
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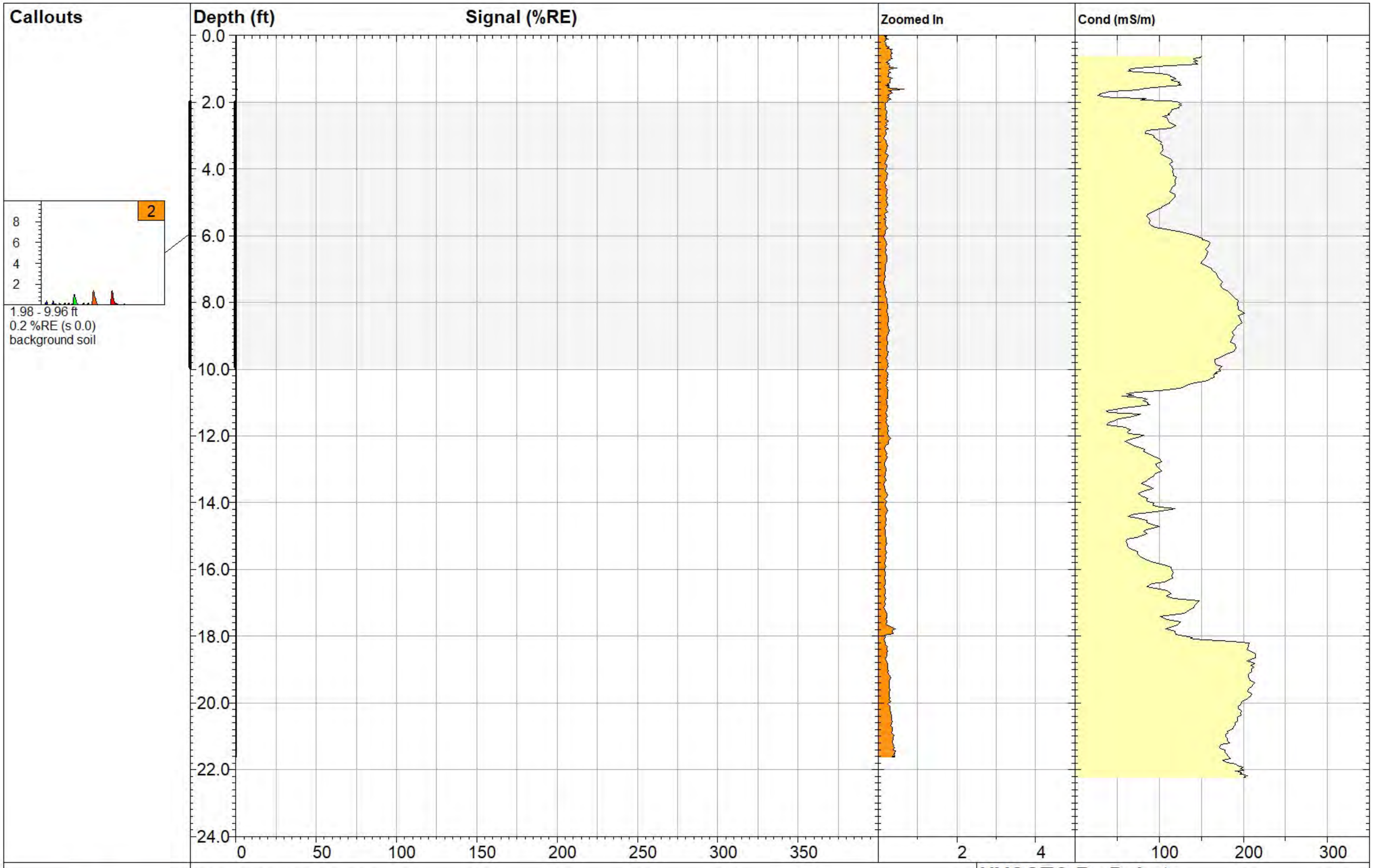
Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **24.29 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **6.0 %RE @ 1.76 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 10:09 MST**



DAKOTA TECHNOLOGIES
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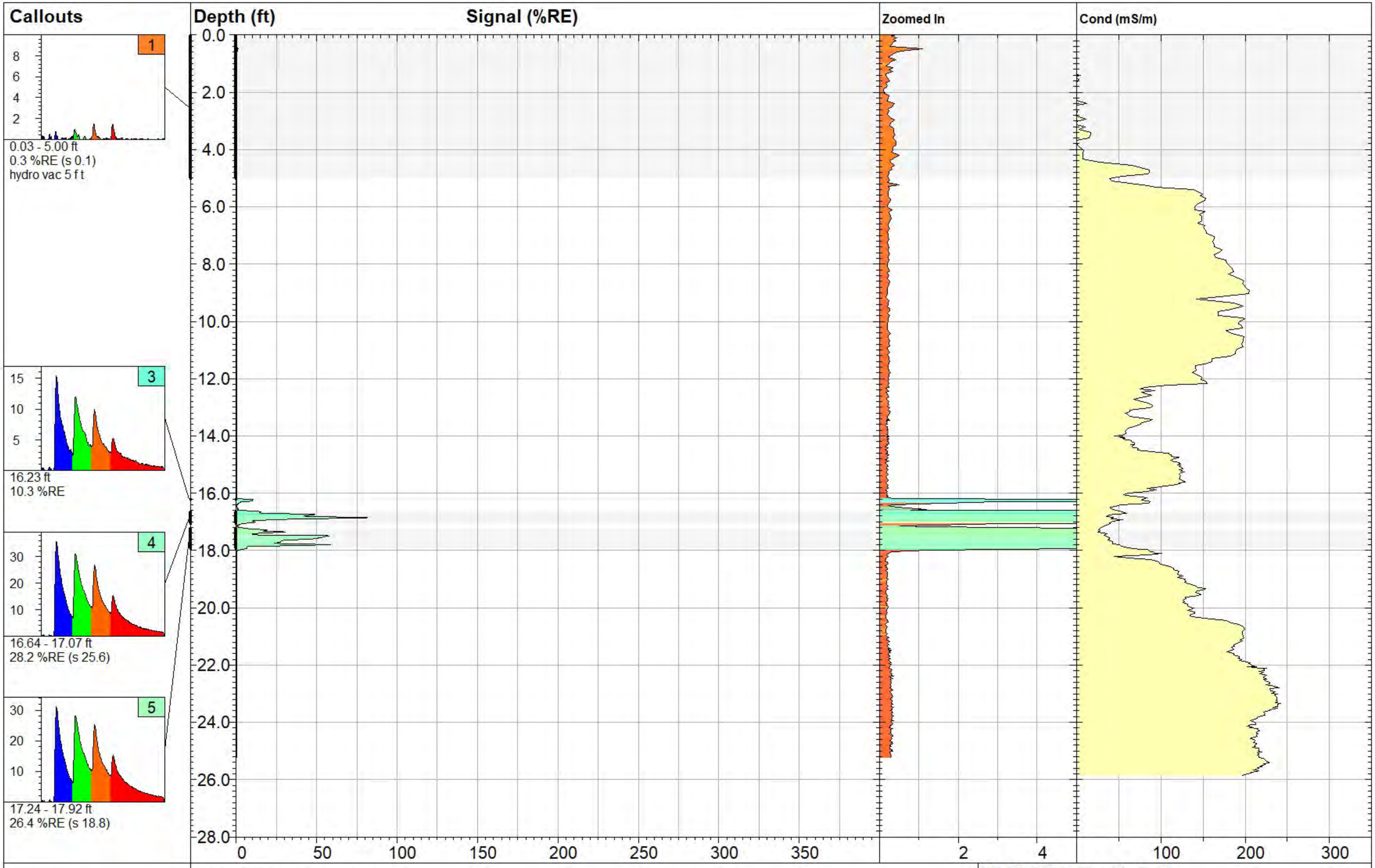
MKTF-LIF-89

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **21.61 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **0.7 %RE @ 1.62 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-04 10:53 MST**

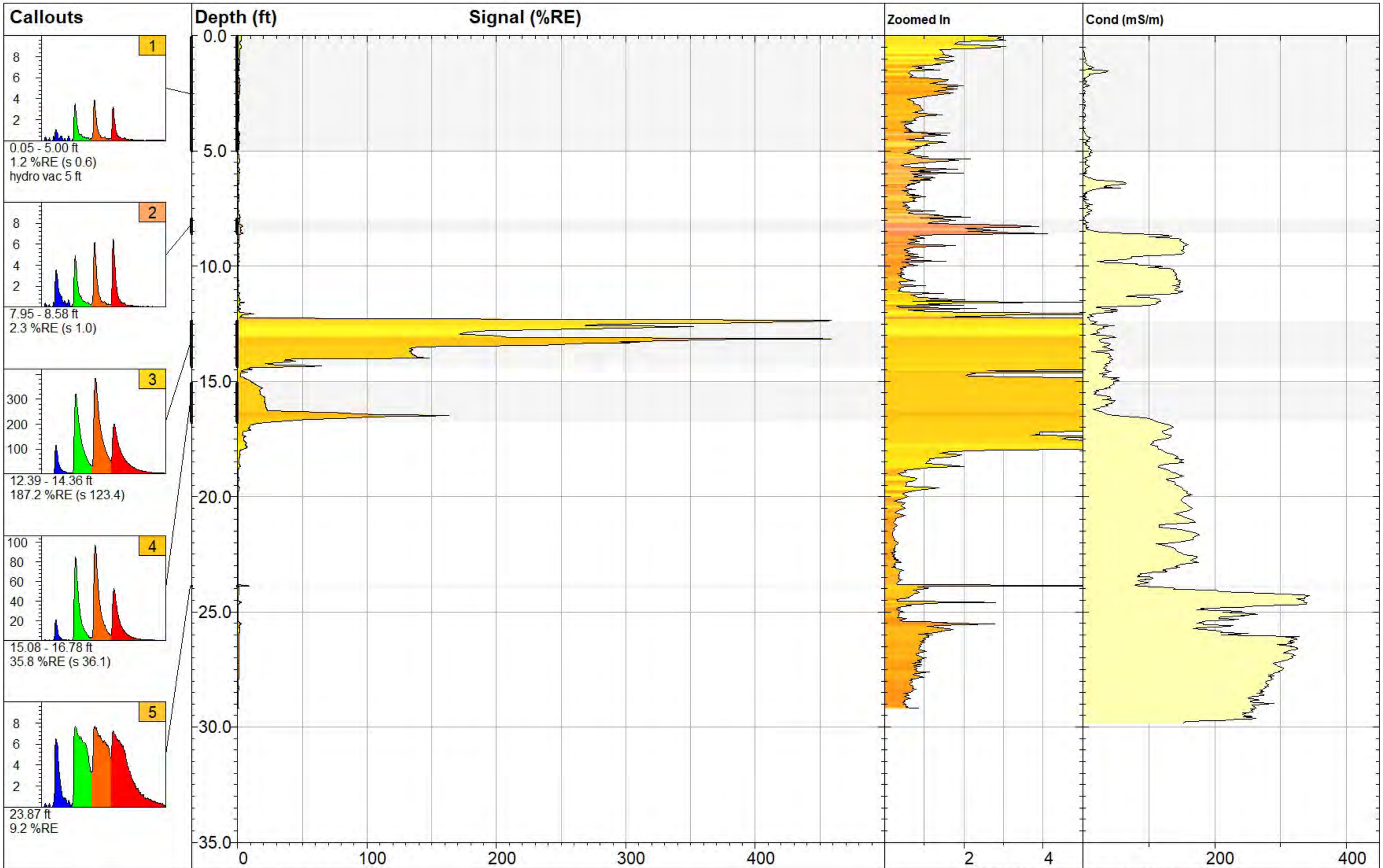


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

MKTF-LIF-90

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **25.23 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **83.2 %RE @ 16.86 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-05 07:59 MST**

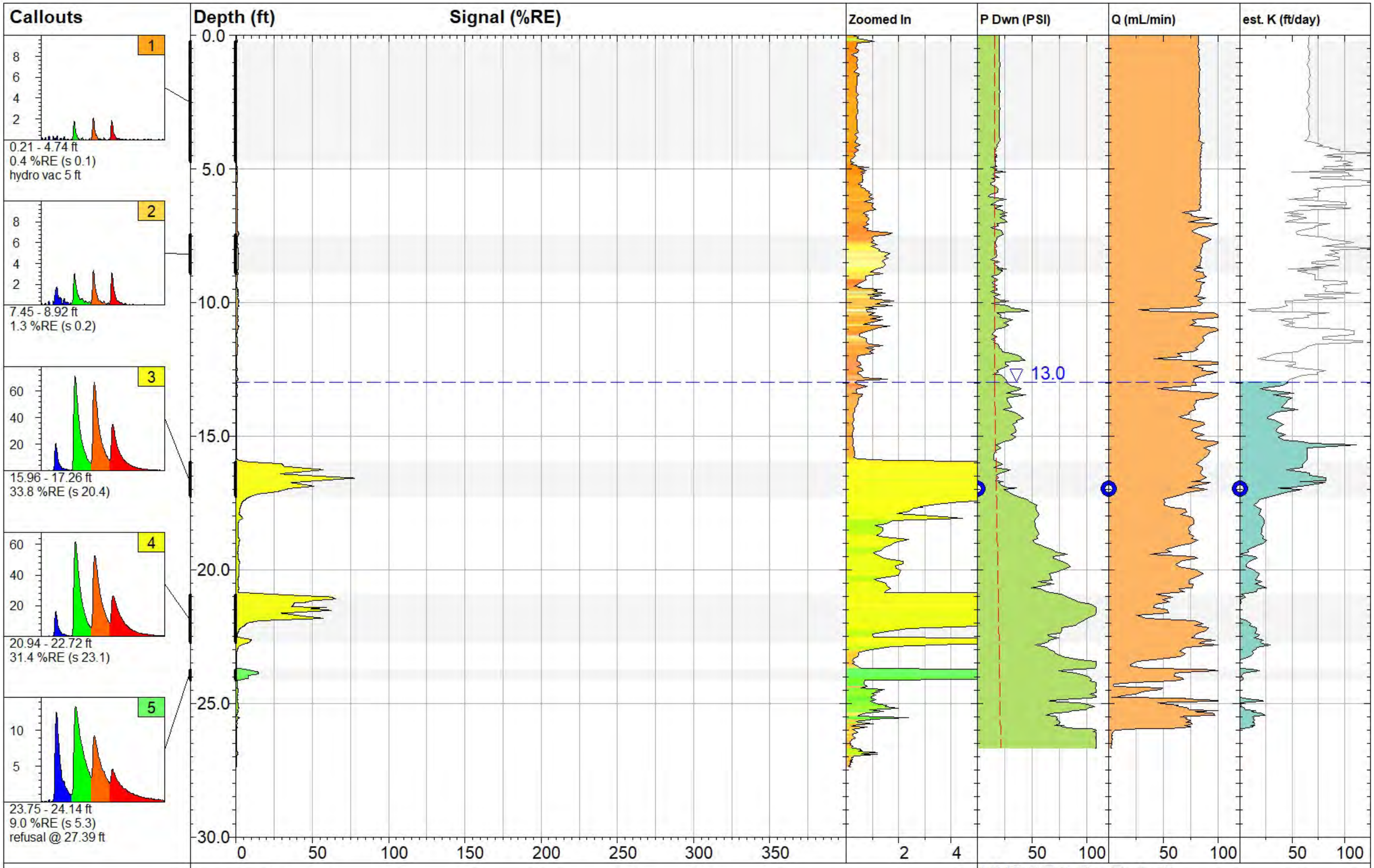


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

PA-LIF-01

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **29.19 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **464.7 %RE @ 13.15 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-05 11:56 MST**

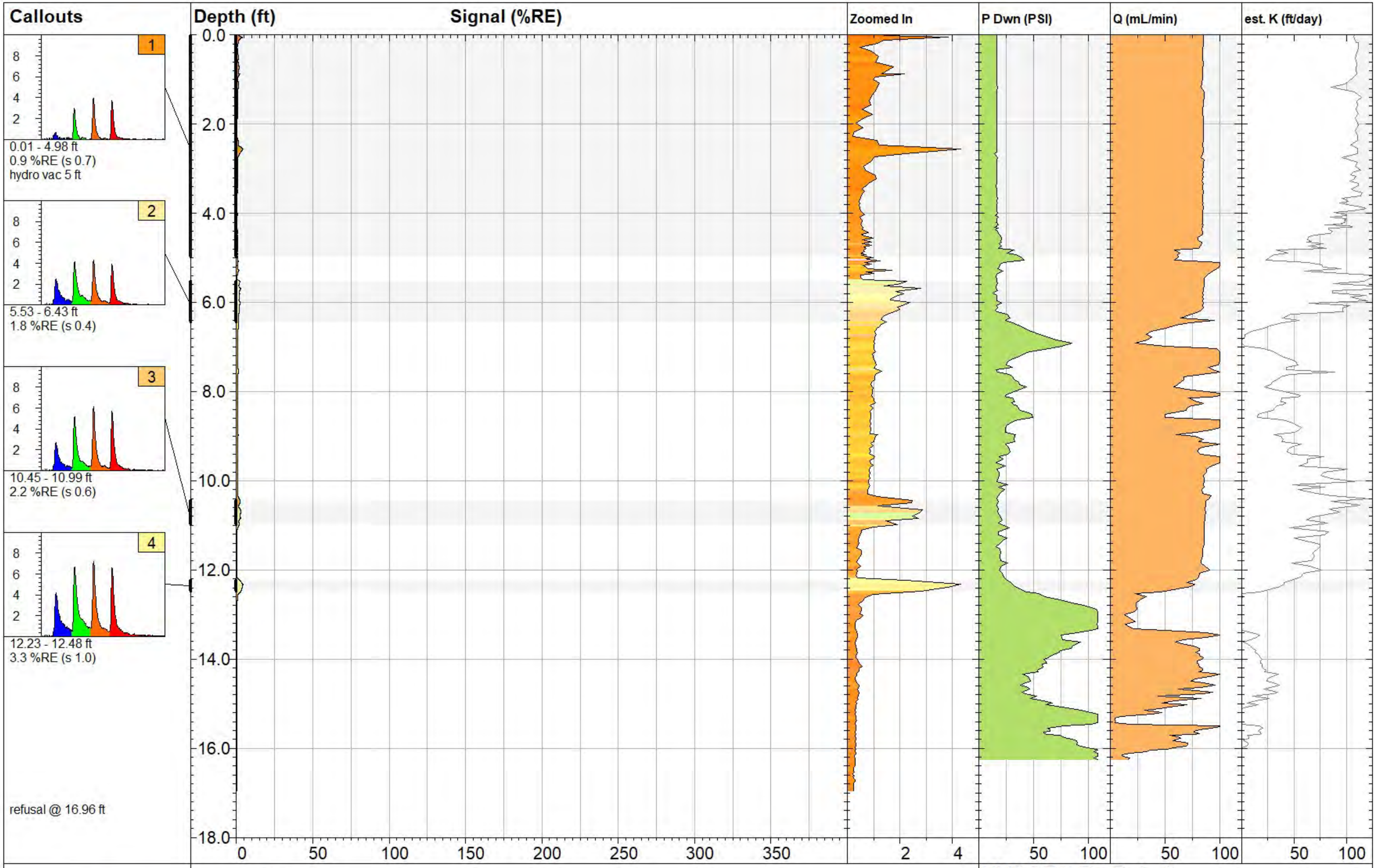


PA-LIF-02

UVOST® By Dakota
www.DakotaTechnologies.com

DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **27.39 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **77.7 %RE @ 16.57 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 10:05 MST**



DAKOTA TECHNOLOGIES

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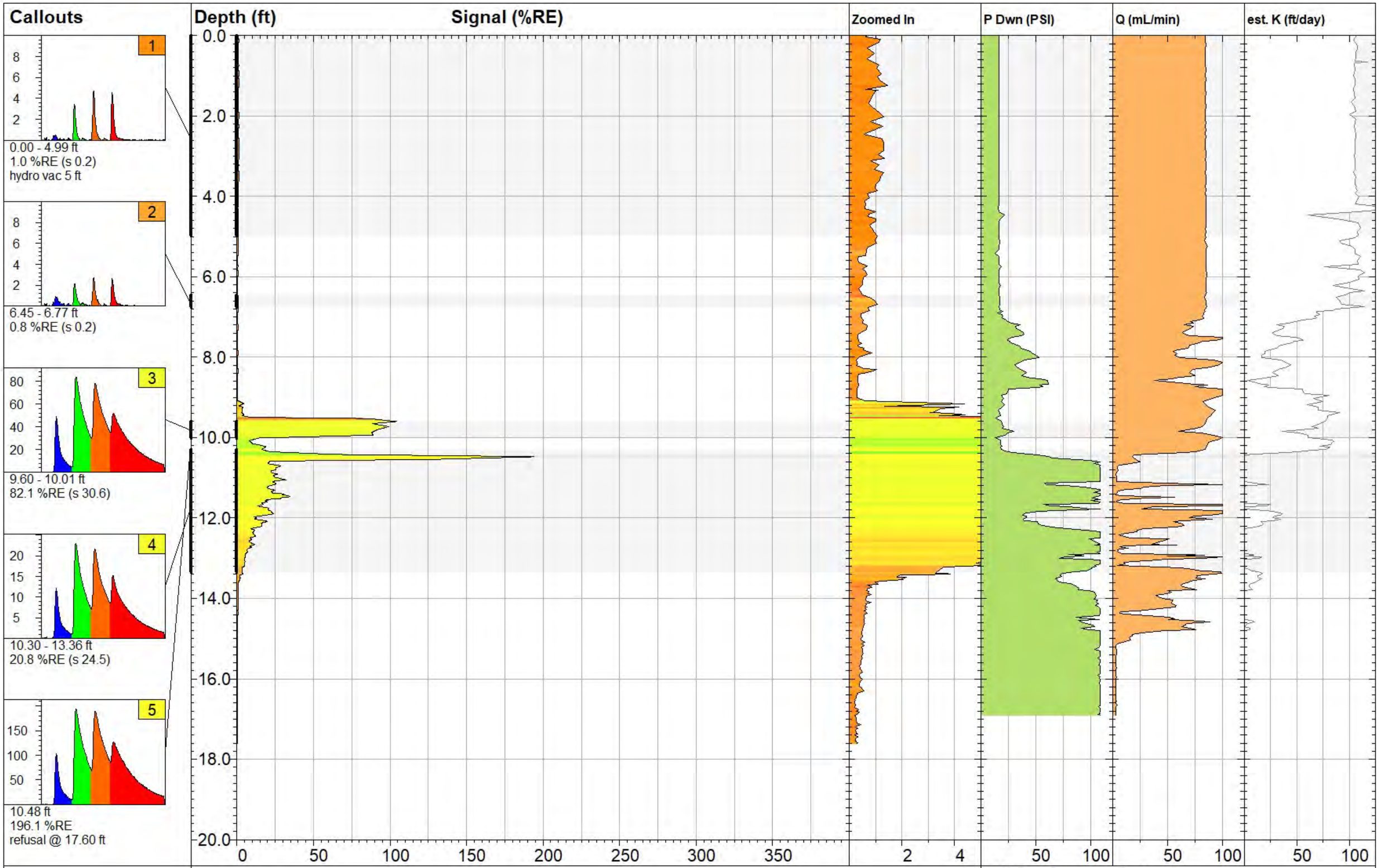
PA-LIF-03

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **16.96 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **4.3 %RE @ 2.55 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 11:12 MST**

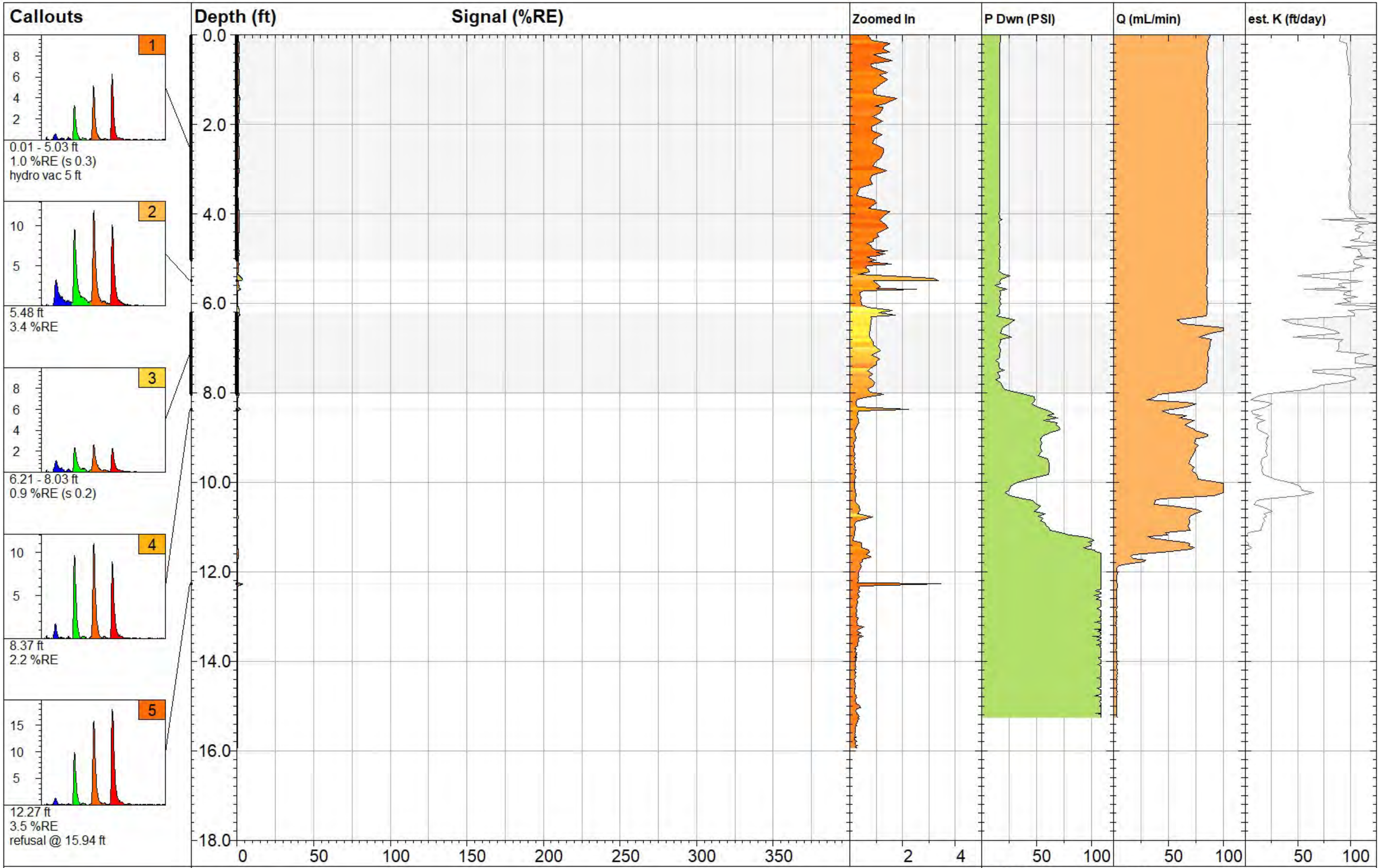


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

PA-LIF-04

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **17.60 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **196.1 %RE @ 10.48 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 11:46 MST**

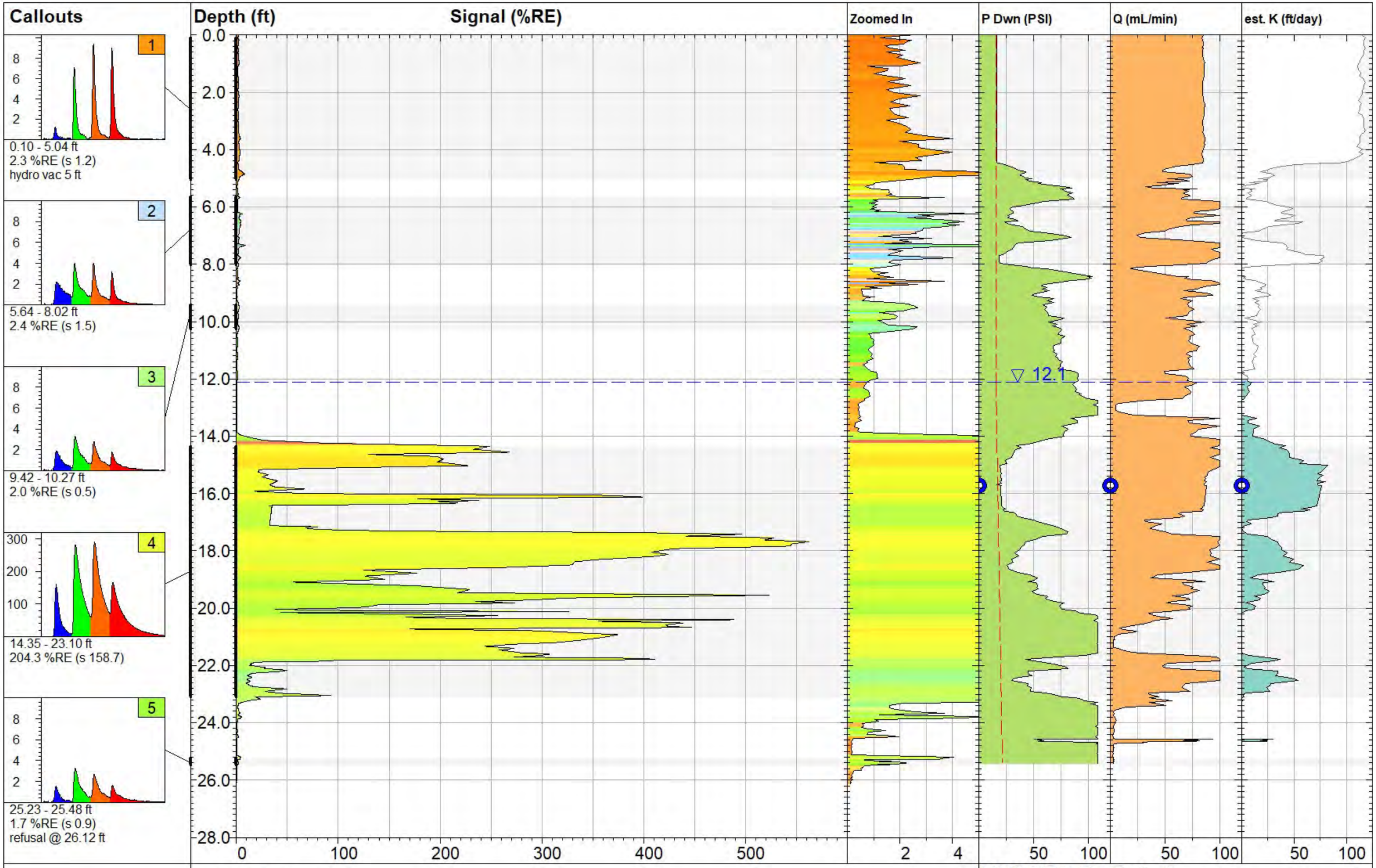


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

PA-LIF-05

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **15.94 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **3.5 %RE @ 12.27 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 12:30 MST**

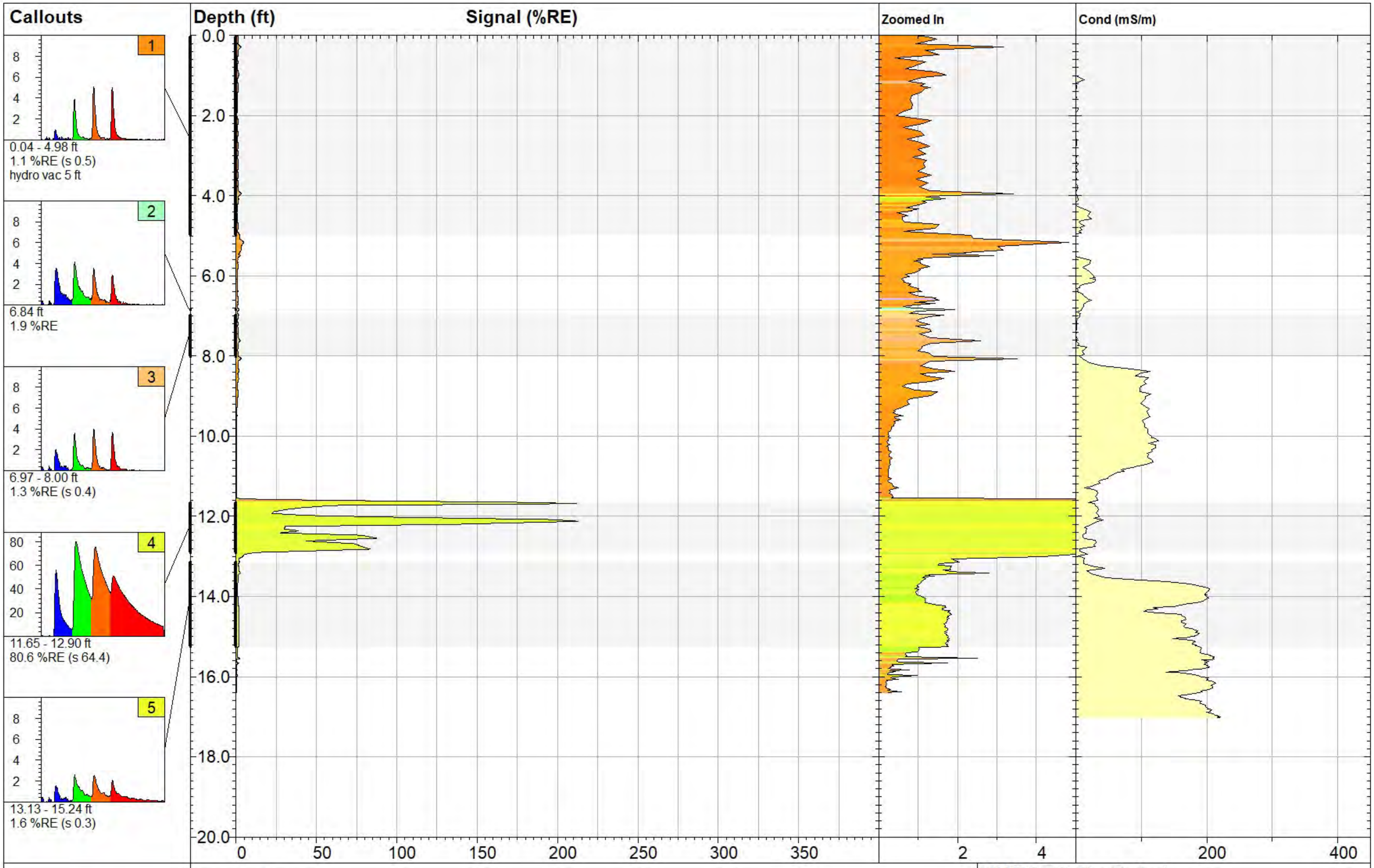


DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

PA-LIF-06

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **26.12 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **562.8 %RE @ 17.68 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-01 13:34 MST**



DAKOTA TECHNOLOGIES

WWW.DAKOTATECHNOLOGIES.COM

PA-LIF-07

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Marathon Marketing Tank Farm**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **16.40 ft**
Client / Job: **TriHydro / 0049.21**	X Coord.(Long/East): **Unavailable**	Max Signal: **213.7 %RE @ 11.68 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2021-02-05 12:41 MST**

Appendix D – V-trench Excavation Method

memorandum

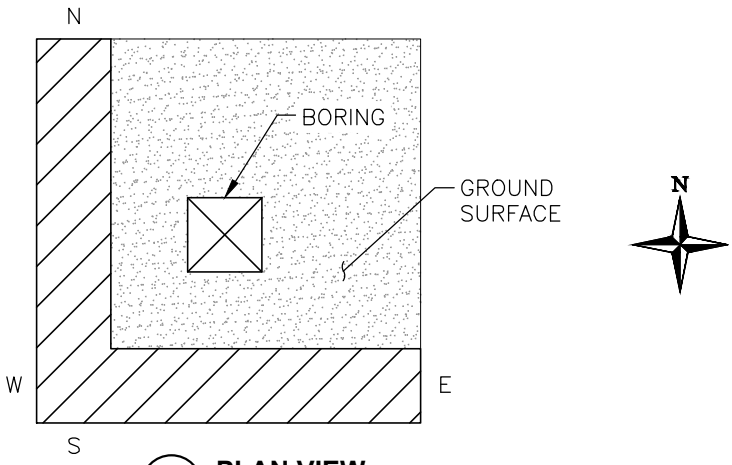
To: Sampling Team Members
From: Project Manager
Date: March 5, 2021
Re: V-trench Excavation Method

In areas where potential shallow soil impacts must be evaluated and hand auger is difficult and labor intensive, V-trenching will be used to clear boring locations. Shallow soil is defined as ground surface to 10 feet (ft) below ground surface (bgs).

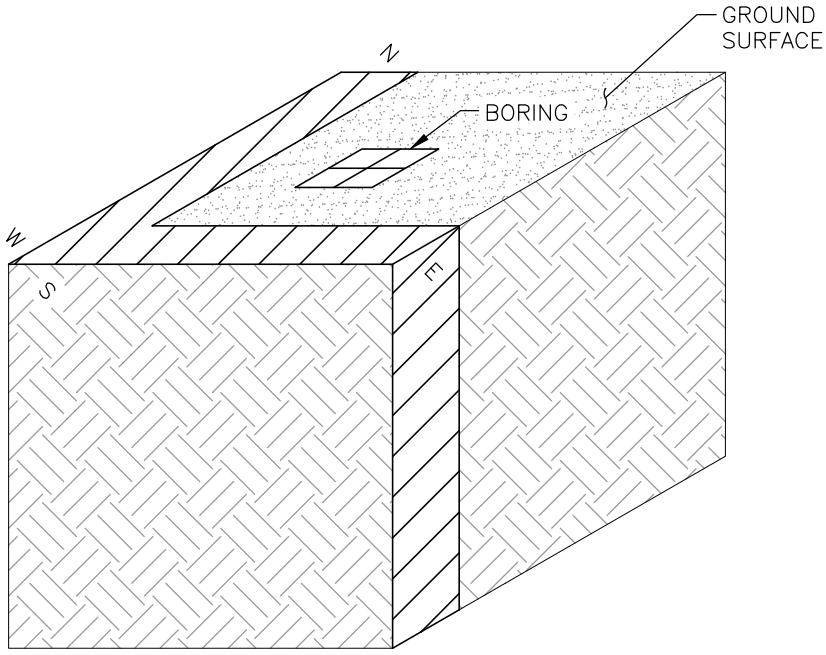
Hydro-excavation will be used to clear a "V" shaped trench (Figure C-1). A vacuum truck will be used to remove the soil/water slurry. Two 5- to 7-feet long by 0- to 10-feet deep by 1-foot wide trenches will be excavated to meet at a 90-degree angle, making the "V." Length will be determined by above ground access; depth will be determined by the estimated depth of subsurface utilities.

Once the V-trench is open, the field leader will look for the presence of subsurface utilities. If the trenches are clear, the drill rig will back from the open side towards the trench connecting point, i.e., tip of the "V." The boring will be located in an area where the soil is stable and not impacted by the trenching activities. If utilities are observed, the trench/boring location will be adjusted, and the process repeated.

697-085-001



1 PLAN VIEW
SCALE: NONE



2 PROFILE VIEW
SCALE: NONE

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE D-1

V-TRENCH SCHEMATIC

MARATHON PETROLEUM CORP.
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: LA	Scale: NONE	Date: 3/12/21	File: 697-VTRENCHSCHEM-202003

M:\TON\MARATHON\CADD\GALLUP__REPORTS\LIF\202103_LIF_RPT\697-VTRENCHSCHEM-202003

Appendix E – Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 17, 2019

Brian Moore

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX:

RE: LIF Investigation OrderNo.: 1911C03

Dear Brian Moore:

Hall Environmental Analysis Laboratory received 11 sample(s) on 11/26/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-53 7.8
Project: LIF Investigation
Collection Date: 11/25/2019 10:45:00 AM
Lab ID: 1911C03-001 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	15	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	100	11		mg/Kg-dr	1	12/2/2019 10:28:48 AM	49056
Motor Oil Range Organics (MRO)	ND	57		mg/Kg-dr	1	12/2/2019 10:28:48 AM	49056
Surr: DNOP	72.4	70-130		%Rec	1	12/2/2019 10:28:48 AM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1600	29		mg/Kg-dr	10	12/2/2019 11:52:49 PM	S64862
Surr: BFB	214	77.4-118	S	%Rec	10	12/2/2019 11:52:49 PM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-53 8-9
Project: LIF Investigation
Collection Date: 11/25/2019 10:45:00 AM
Lab ID: 1911C03-002 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	13	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	270	11		mg/Kg-dr	1	12/2/2019 10:37:56 AM	49056
Motor Oil Range Organics (MRO)	ND	56		mg/Kg-dr	1	12/2/2019 10:37:56 AM	49056
Surr: DNOP	114	70-130		%Rec	1	12/2/2019 10:37:56 AM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1100	31		mg/Kg-dr	10	12/3/2019 1:00:52 AM	S64862
Surr: BFB	162	77.4-118	S	%Rec	10	12/3/2019 1:00:52 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-44 6-7
Project: LIF Investigation
Collection Date: 11/24/2019 2:30:00 PM
Lab ID: 1911C03-003 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	6.2	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	84	10		mg/Kg-dr	1	12/2/2019 10:47:04 AM	49056
Motor Oil Range Organics (MRO)	ND	50		mg/Kg-dr	1	12/2/2019 10:47:04 AM	49056
Surr: DNOP	80.2	70-130		%Rec	1	12/2/2019 10:47:04 AM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	97	28		mg/Kg-dr	5	12/3/2019 1:23:30 AM	S64862
Surr: BFB	95.0	77.4-118		%Rec	5	12/3/2019 1:23:30 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-44 8-10
Project: LIF Investigation
Collection Date: 11/24/2019 2:15:00 PM
Lab ID: 1911C03-004 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	13	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	98	11		mg/Kg-dr	1	12/2/2019 10:56:10 AM	49056
Motor Oil Range Organics (MRO)	ND	53		mg/Kg-dr	1	12/2/2019 10:56:10 AM	49056
Surr: DNOP	80.6	70-130		%Rec	1	12/2/2019 10:56:10 AM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1400	18		mg/Kg-dr	5	12/3/2019 1:46:09 AM	S64862
Surr: BFB	234	77.4-118	S	%Rec	5	12/3/2019 1:46:09 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-44 18-19
Project: LIF Investigation
Collection Date: 11/24/2019 2:20:00 PM
Lab ID: 1911C03-005 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	21	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	840	12		mg/Kg-dr	1	12/2/2019 11:05:15 AM	49056
Motor Oil Range Organics (MRO)	ND	61		mg/Kg-dr	1	12/2/2019 11:05:15 AM	49056
Surr: DNOP	109	70-130		%Rec	1	12/2/2019 11:05:15 AM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1500	180		mg/Kg-dr	50	12/3/2019 9:48:07 AM	S64862
Surr: BFB	114	77.4-118		%Rec	50	12/3/2019 9:48:07 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-LIF-34 20-21
Project: LIF Investigation
Collection Date: 11/25/2019 8:20:00 AM
Lab ID: 1911C03-006 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	16	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	1300	110		mg/Kg-dr	10	12/3/2019 4:00:19 PM	49056
Motor Oil Range Organics (MRO)	ND	540		mg/Kg-dr	10	12/3/2019 4:00:19 PM	49056
Surr: DNOP	0	70-130	S	%Rec	10	12/3/2019 4:00:19 PM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	210	43		mg/Kg-dr	10	12/3/2019 2:31:27 AM	S64862
Surr: BFB	143	77.4-118	S	%Rec	10	12/3/2019 2:31:27 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-LIF-19 16-18
Project: LIF Investigation
Collection Date: 11/25/2019 9:03:00 AM
Lab ID: 1911C03-007 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	17	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	2100	120		mg/Kg-dr	10	12/3/2019 4:09:32 PM	49056
Motor Oil Range Organics (MRO)	ND	580		mg/Kg-dr	10	12/3/2019 4:09:32 PM	49056
Surr: DNOP	0	70-130	S	%Rec	10	12/3/2019 4:09:32 PM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	18000	420		mg/Kg-dr	100	12/3/2019 2:54:04 AM	S64862
Surr: BFB	162	77.4-118	S	%Rec	100	12/3/2019 2:54:04 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-LIF-20 27-28
Project: LIF Investigation
Collection Date: 11/25/2019 1:20:00 PM
Lab ID: 1911C03-008 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	12	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	200	11		mg/Kg-dr	1	12/2/2019 11:32:34 AM	49056
Motor Oil Range Organics (MRO)	ND	56		mg/Kg-dr	1	12/2/2019 11:32:34 AM	49056
Surr: DNOP	83.5	70-130		%Rec	1	12/2/2019 11:32:34 AM	49056
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	670	29		mg/Kg-dr	10	12/3/2019 3:16:39 AM	S64862
Surr: BFB	300	77.4-118	S	%Rec	10	12/3/2019 3:16:39 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-LIF-28 20-21
Project: LIF Investigation
Collection Date: 11/25/2019 9:40:00 AM
Lab ID: 1911C03-009 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	13	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	240	110		mg/Kg-dr	10	12/3/2019 8:48:27 AM	49070
Motor Oil Range Organics (MRO)	ND	550		mg/Kg-dr	10	12/3/2019 8:48:27 AM	49070
Surr: DNOP	0	70-130	S	%Rec	10	12/3/2019 8:48:27 AM	49070
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1800	31		mg/Kg-dr	10	12/3/2019 3:39:14 AM	S64862
Surr: BFB	783	77.4-118	S	%Rec	10	12/3/2019 3:39:14 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-LIF-28 21-23
Project: LIF Investigation
Collection Date: 11/25/2019 9:30:00 AM
Lab ID: 1911C03-010 **Matrix:** SOIL **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	12	1.0		wt%	1	11/26/2019 5:45:00 PM	R64814
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	780	100		mg/Kg-dr	10	12/3/2019 8:57:24 AM	49070
Motor Oil Range Organics (MRO)	ND	500		mg/Kg-dr	10	12/3/2019 8:57:24 AM	49070
Surr: DNOP	0	70-130	S	%Rec	10	12/3/2019 8:57:24 AM	49070
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	2100	69		mg/Kg-dr	20	12/3/2019 4:01:50 AM	S64862
Surr: BFB	448	77.4-118	S	%Rec	20	12/3/2019 4:01:50 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1911C03**
Date Reported: **12/17/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MeOH Blank
Project: LIF Investigation **Collection Date:**
Lab ID: 1911C03-011 **Matrix:** MEOH BLAN **Received Date:** 11/26/2019 12:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/3/2019 4:24:23 AM	S64862
Surr: BFB	79.2	77.4-118		%Rec	1	12/3/2019 4:24:23 AM	S64862

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Laboratory Report for
Hall Environmental Analysis Laboratory

Work Order Number: 1911C03

December 16, 2019

Daniel B. Stephens & Associates, Inc.

4400 Alameda Blvd. NE, Suite C • Albuquerque, New Mexico 87113

December 16, 2019

Andy Freeman
Hall Environmental Analysis Laboratory
4901 Hawkins NE, Suite D
Albuquerque, NM 87109
(505) 345-3975

Re: DBS&A Laboratory Report for the Hall Environmental Analysis Laboratory Work Order #1911C03 Project

Dear Mr. Freeman:

Enclosed is the report for the Hall Environmental Analysis Laboratory Work Order #1911C03 project samples. Please review this report and provide any comments as samples will be held for a maximum of 30 days. After 30 days samples will be returned or disposed of in an appropriate manner.

All testing results were evaluated subjectively for consistency and reasonableness, and the results appear to be reasonably representative of the material tested. However, DBS&A does not assume any responsibility for interpretations or analyses based on the data enclosed, nor can we guarantee that these data are fully representative of the undisturbed materials at the field site. We recommend that careful evaluation of these laboratory results be made for your particular application.

The testing utilized to generate the enclosed report employs methods that are standard for the industry. The results do not constitute a professional opinion by DBS&A, nor can the results affect any professional or expert opinions rendered with respect thereto by DBS&A. You have acknowledged that all the testing undertaken by us, and the report provided, constitutes mere test results using standardized methods, and cannot be used to disqualify DBS&A from rendering any professional or expert opinion, having waived any claim of conflict of interest by DBS&A.

We are pleased to provide this service to Hall Environmental Analysis Laboratory and look forward to future laboratory testing on other projects. If you have any questions about the enclosed data, please do not hesitate to call.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.
SOIL TESTING & RESEARCH LABORATORY

Adam Bland
Laboratory Operations Manager

Enclosure

Daniel B. Stephens & Associates, Inc.
Soil Testing & Research Laboratory
4400 Alameda Blvd. NE, Suite C
Albuquerque, NM 87113
505-889-7752
FAX 505-889-0258

Summaries

Summary of Tests Performed

Laboratory Sample Number	Initial Soil Properties[1]			Saturated Hydraulic Conductivity[2]			Moisture Characteristics[3]								Particle Size[4]			Specific Gravity[5]		Air Perm-eability	Atterberg Limits	Proctor Compaction
	G	VM	VD	CH	FH	FW	HC	PP	FP	DPP	RH	EP	WHC	K_{unsat}	DS	WS	H	F	C			
MKTFLIF-53 7-8																X	X					
MKTFLIF-53 8-9																X	X					
MKTFLIF-44 6-7																X	X					
MKTFLIF-44 8-10																X	X					
MKTFLIF-44 18-19																X	X					
EB-LIF-34 20-21																X	X					
EB-LIF-19 16-19																X	X					
EB-LIF-20 27-28																X	X					
EB-LIF-28 20-21																X	X					
EB-LIF-28 21-23																X	X					

[1] G = Gravimetric Moisture Content, VM = Volume Measurement Method, VD = Volume Displacement Method

[2] CH = Constant Head Rigid Wall, FH = Falling Head Rigid Wall, FW = Falling Head Rising Tail Flexible Wall

[3] HC = Hanging Column, PP = Pressure Plate, FP = Filter Paper, DPP = Dew Point Potentiometer, RH = Relative Humidity Box, EP = Effective Porosity, WHC = Water Holding Capacity, Kunsat = Calculated Unsaturated Hydraulic Conductivity

[4] DS = Dry Sieve, WS = Wet Sieve, H = Hydrometer

[5] F = Fine (<4.75mm), C = Coarse (>4.75mm)

Notes

Sample Receipt:
Ten samples, each as loose material in a 10% full 1-gallon bag, were hand-delivered on December 2, 2019. All samples were contained in a cardboard box and were received in good order.

Sample Preparation and Testing Notes:
Each of the samples was subjected to particle size analysis, using a combination of standard sieves and client specified sieves, as well as hydrometer.

Particle diameter calculations in the hydrometer portion of the particle size analysis testing, are based on the use of an assumed specific gravity value of 2.65.

Daniel B. Stephens & Associates, Inc.

Summary of Particle Size Results

	Sieves (% Passing)													
Standard Sieve Size	3"	2"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#35	#60	#120	#230	#400
Sieve Opening (mm)	75	50	37.5	25	19	9.5	4.75	2.00	0.85	0.50	0.25	0.125	0.063	0.038
Sample Number														
MKTFLIF-53 7-8	100.00	100.00	100.00	100.00	100.00	95.67	94.50	93.85	92.83	91.17	82.62	60.86	48.48	43.01
MKTFLIF-53 8-9	100.00	100.00	100.00	100.00	97.24	80.13	67.88	56.80	46.66	39.66	29.32	20.65	17.24	15.54
MKTFLIF-44 6-7	100.00	100.00	100.00	100.00	100.00	88.97	66.43	47.98	36.84	32.61	26.86	19.88	16.07	14.34
MKTFLIF-44 8-10	100.00	100.00	100.00	95.42	92.13	81.58	71.14	62.91	56.83	53.27	43.00	30.06	25.01	22.64
MKTFLIF-44 18-19	100.00	100.00	100.00	100.00	100.00	100.00	99.88	99.59	99.29	98.79	93.88	76.93	61.17	54.80
EB-LIF-34 20-21	100.00	100.00	100.00	100.00	100.00	98.62	97.09	95.05	92.84	90.27	79.61	66.04	51.47	43.50
EB-LIF-19 16-19	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.94	99.62	97.39	90.20	81.08	71.38	64.27
EB-LIF-20 27-28	100.00	100.00	100.00	100.00	100.00	100.00	94.92	91.11	85.96	78.04	51.13	31.01	22.14	18.76
EB-LIF-28 20-21	100.00	100.00	100.00	100.00	95.50	83.34	76.92	72.30	66.75	60.78	41.58	27.14	22.23	19.90
EB-LIF-28 21-23	100.00	100.00	100.00	100.00	100.00	88.37	76.41	64.54	53.97	45.01	30.61	21.91	17.90	15.96

Daniel B. Stephens & Associates, Inc.

Percent Gravel, Sand, Silt and Clay

Sample Number	% Medium - Coarse Gravel* (>8mm)	% Fine Gravel* (<8mm, >2mm)	% Coarse Sand (<2mm, >0.5mm)	% Medium Sand (<.5mm, >0.25mm)	% Fine Sand (<0.25mm, >0.125mm)	% Very Fine Sand (<.0.125mm, >0.063mm)	% Coarse Silt (<.0.063mm, >0.038mm)	% Fine Silt (<.0.038mm, >0.002mm)	% Clay** (<0.002mm)
MKTFLIF-53 7-8	4.6	1.5	2.7	8.6	21.8	12.4	5.5	26.0	17.0
MKTFLIF-53 8-9	22.9	20.3	17.1	10.3	8.7	3.4	1.7	8.8	6.8
MKTFLIF-44 6-7	16.6	35.4	15.4	5.8	7.0	3.8	1.7	6.2	8.1
MKTFLIF-44 8-10	21.0	16.1	9.6	10.3	12.9	5.1	2.4	12.2	10.4
MKTFLIF-44 18-19	0.0	0.4	0.8	4.9	16.9	15.8	6.4	31.4	23.4
EB-LIF-34 20-21	1.8	3.2	4.8	10.7	13.6	14.6	8.0	23.9	19.6
EB-LIF-19 16-19	0.0	0.1	2.5	7.2	9.1	9.7	7.1	30.6	33.7
EB-LIF-20 27-28	1.3	7.6	13.1	26.9	20.1	8.9	3.4	11.1	7.7
EB-LIF-28 20-21	18.3	9.5	11.5	19.2	14.4	4.9	2.3	10.5	9.4
EB-LIF-28 21-23	14.6	20.9	19.5	14.4	8.7	4.0	1.9	9.1	6.9

*Percent passing and retained on 8 mm sieve interpolated from percent passing 9.75 and 4.75 mm results.
**USCS classification does not classify clay fraction based on particle size. USDA definition of clay (<0.002mm) used in this table.

Particle Size Analysis

Daniel B. Stephens & Associates, Inc.

Summary of Particle Size Results

	Sieves (% Passing)													
Standard Sieve Size	3"	2"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#35	#60	#120	#230	#400
Sieve Opening (mm)	75	50	37.5	25	19	9.5	4.75	2.00	0.85	0.50	0.25	0.125	0.063	0.038
Sample Number														
MKTFLIF-53 7-8	100.00	100.00	100.00	100.00	100.00	95.67	94.50	93.85	92.83	91.17	82.62	60.86	48.48	43.01
MKTFLIF-53 8-9	100.00	100.00	100.00	100.00	97.24	80.13	67.88	56.80	46.66	39.66	29.32	20.65	17.24	15.54
MKTFLIF-44 6-7	100.00	100.00	100.00	100.00	100.00	88.97	66.43	47.98	36.84	32.61	26.86	19.88	16.07	14.34
MKTFLIF-44 8-10	100.00	100.00	100.00	95.42	92.13	81.58	71.14	62.91	56.83	53.27	43.00	30.06	25.01	22.64
MKTFLIF-44 18-19	100.00	100.00	100.00	100.00	100.00	100.00	99.88	99.59	99.29	98.79	93.88	76.93	61.17	54.80
EB-LIF-34 20-21	100.00	100.00	100.00	100.00	100.00	98.62	97.09	95.05	92.84	90.27	79.61	66.04	51.47	43.50
EB-LIF-19 16-19	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.94	99.62	97.39	90.20	81.08	71.38	64.27
EB-LIF-20 27-28	100.00	100.00	100.00	100.00	100.00	100.00	94.92	91.11	85.96	78.04	51.13	31.01	22.14	18.76
EB-LIF-28 20-21	100.00	100.00	100.00	100.00	95.50	83.34	76.92	72.30	66.75	60.78	41.58	27.14	22.23	19.90
EB-LIF-28 21-23	100.00	100.00	100.00	100.00	100.00	88.37	76.41	64.54	53.97	45.01	30.61	21.91	17.90	15.96

Daniel B. Stephens & Associates, Inc.

Percent Gravel, Sand, Silt and Clay

Sample Number	% Medium - Coarse Gravel* (>8mm)	% Fine Gravel* (<8mm, >2mm)	% Coarse Sand (<2mm, >0.5mm)	% Medium Sand (<.5mm, >0.25mm)	% Fine Sand (<0.25mm, >0.125mm)	% Very Fine Sand (<.0.125mm, >0.063mm)	% Coarse Silt (<.0.063mm, >0.038mm)	% Fine Silt (<.0.038mm, >0.002mm)	% Clay** (<0.002mm)
MKTFLIF-53 7-8	4.6	1.5	2.7	8.6	21.8	12.4	5.5	26.0	17.0
MKTFLIF-53 8-9	22.9	20.3	17.1	10.3	8.7	3.4	1.7	8.8	6.8
MKTFLIF-44 6-7	16.6	35.4	15.4	5.8	7.0	3.8	1.7	6.2	8.1
MKTFLIF-44 8-10	21.0	16.1	9.6	10.3	12.9	5.1	2.4	12.2	10.4
MKTFLIF-44 18-19	0.0	0.4	0.8	4.9	16.9	15.8	6.4	31.4	23.4
EB-LIF-34 20-21	1.8	3.2	4.8	10.7	13.6	14.6	8.0	23.9	19.6
EB-LIF-19 16-19	0.0	0.1	2.5	7.2	9.1	9.7	7.1	30.6	33.7
EB-LIF-20 27-28	1.3	7.6	13.1	26.9	20.1	8.9	3.4	11.1	7.7
EB-LIF-28 20-21	18.3	9.5	11.5	19.2	14.4	4.9	2.3	10.5	9.4
EB-LIF-28 21-23	14.6	20.9	19.5	14.4	8.7	4.0	1.9	9.1	6.9

*Percent passing and retained on 8 mm sieve interpolated from percent passing 9.75 and 4.75 mm results.
**USCS classification does not classify clay fraction based on particle size. USDA definition of clay (<0.002mm) used in this table.

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-53 7-8
HEAL ID: 1911C03-001B
Lab Label: MK-1
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 132.91
Weight Passing #10 (g): 124.73
Weight Retained #10 (g): 8.18
Weight of Hydrometer Sample (g): 62.19
Calculated Weight of Sieve Sample (g): 66.27

Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	132.91	100.00
	2"	50	0.00	0.00	132.91	100.00
	1.5"	38.1	0.00	0.00	132.91	100.00
	1"	25	0.00	0.00	132.91	100.00
	3/4"	19.0	0.00	0.00	132.91	100.00
	3/8"	9.5	5.76	5.76	127.15	95.67
	4	4.75	1.55	7.31	125.60	94.50
	10	2.00	0.87	8.18	124.73	93.85
-10			(Based on calculated sieve wt.)			
	20	0.85	0.67	4.75	61.52	92.83
	35	0.500	1.10	5.85	60.42	91.17
	60	0.250	5.67	11.52	54.75	82.62
	120	0.125	14.42	25.94	40.33	60.86
	230	0.063	8.20	34.14	32.13	48.48
	400	0.038	3.63	37.77	28.50	43.01
	dry pan		0.28	38.05	28.22	
	wet pan			28.22	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-53 7-8
HEAL ID: 1911C03-001B
Lab Label: MK-1
Test Date: 10-Dec-19
Start Time: 9:00

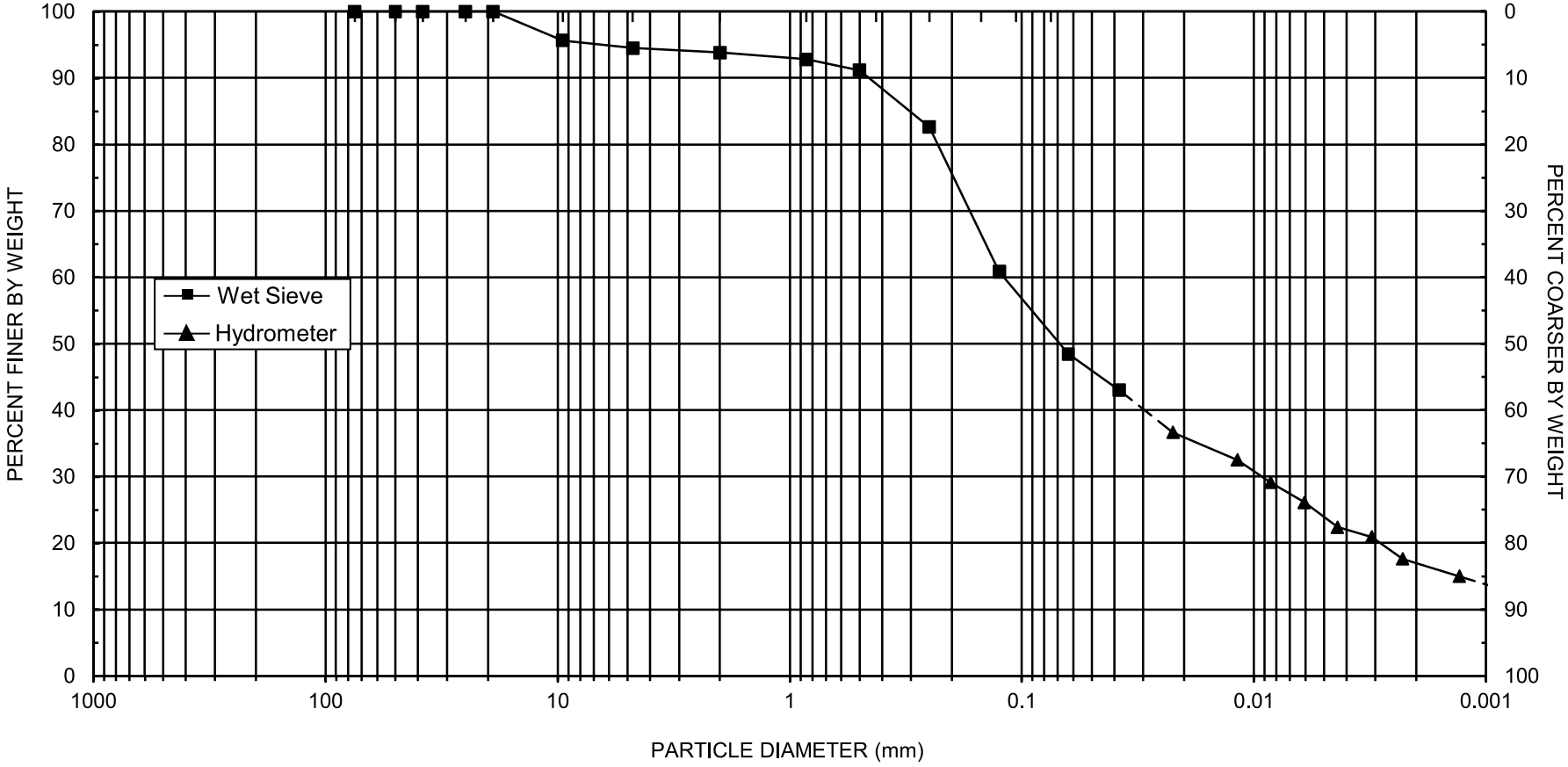
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 62.19
Total Sample Wt. (g)*:* 132.91
Wt. Passing #10 (g)*:* 124.73

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.6	31.00	6.70	24.3	11	0.0223	39	36.7
	15	19.6	28.25	6.70	21.5	11	0.0118	35	32.5
	30	19.7	26.00	6.67	19.3	12	0.0085	31	29.2
	60	19.7	24.00	6.67	17.3	12	0.0061	28	26.2
	120	19.8	21.50	6.64	14.9	12	0.0044	24	22.4
	240	19.8	20.50	6.64	13.9	12	0.0031	22	20.9
	458	20.0	18.25	6.57	11.7	13	0.0023	19	17.6
11-Dec-19	1434	18.5	17.00	7.05	10.0	13	0.0013	16	15.0

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
MKTFLIF-53 7-8	**MK-1**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-53 8-9
HEAL ID: 1911C03-002B
Lab Label: MK-2
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 412.72
Weight Passing #10 (g): 234.41
Weight Retained #10 (g): 178.31
Weight of Hydrometer Sample (g): 55.87
Calculated Weight of Sieve Sample (g): 98.37
Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	412.72	100.00
	2"	50	0.00	0.00	412.72	100.00
	1.5"	38.1	0.00	0.00	412.72	100.00
	1"	25	0.00	0.00	412.72	100.00
	3/4"	19.0	11.38	11.38	401.34	97.24
	3/8"	9.5	70.61	81.99	330.73	80.13
	4	4.75	50.56	132.55	280.17	67.88
	10	2.00	45.76	178.31	234.41	56.80
-10			(Based on calculated sieve wt.)			
	20	0.85	9.97	52.47	45.90	46.66
	35	0.500	6.89	59.36	39.01	39.66
	60	0.250	10.17	69.53	28.84	29.32
	120	0.125	8.53	78.06	20.31	20.65
	230	0.063	3.35	81.41	16.96	17.24
	400	0.038	1.67	83.08	15.29	15.54
	dry pan		0.05	83.13	15.24	
	wet pan			15.24	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-53 8-9
HEAL ID: 1911C03-002B
Lab Label: MK-2
Test Date: 10-Dec-19
Start Time: 9:06

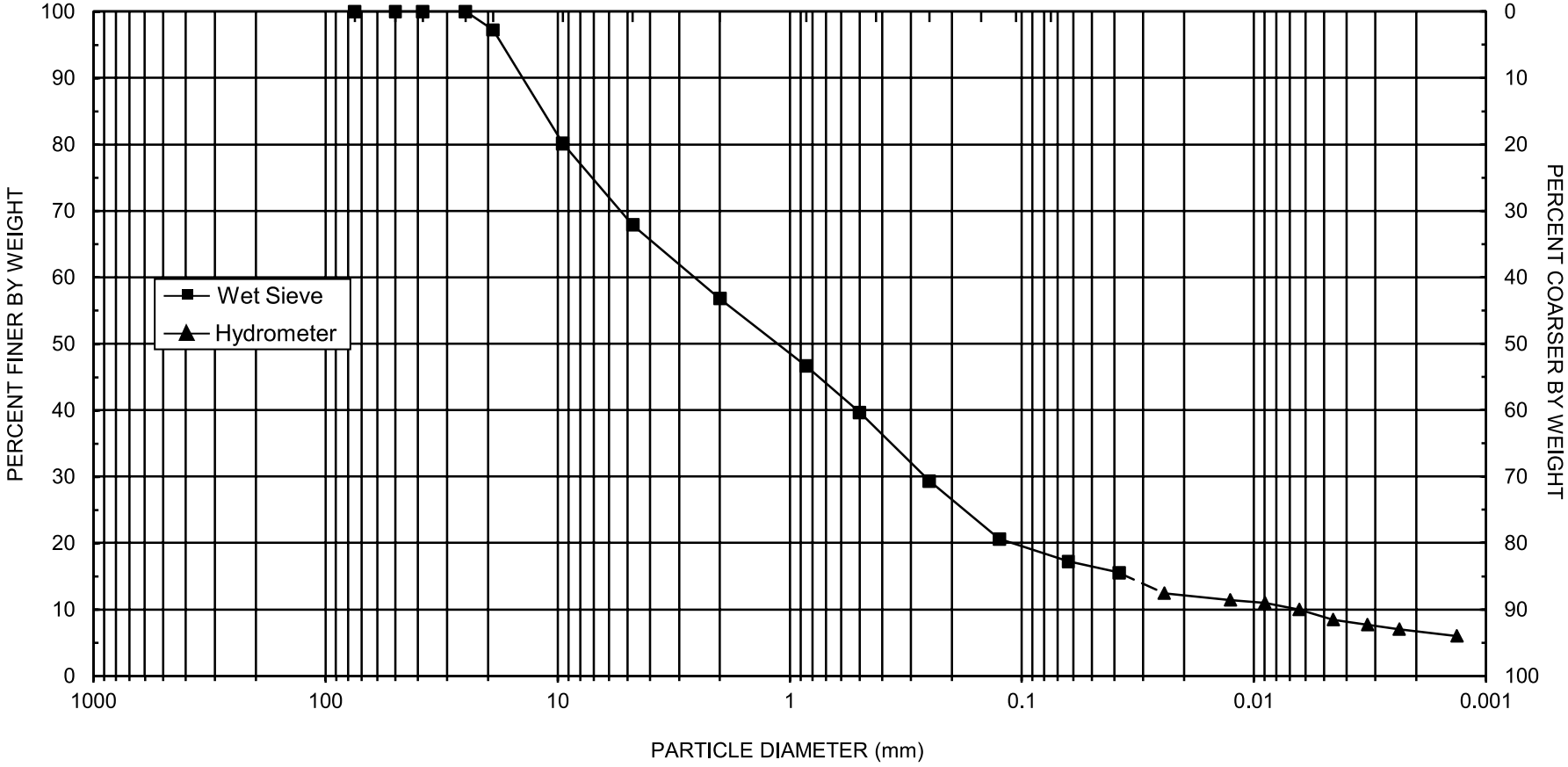
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 55.87
Total Sample Wt. (g)*:* 412.72
Wt. Passing #10 (g)*:* 234.41

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.6	19.00	6.70	12.3	13	0.0243	22	12.5
	15	19.6	18.00	6.70	11.3	13	0.0126	20	11.5
	30	19.7	17.50	6.67	10.8	13	0.0090	19	11.0
	60	19.8	16.50	6.64	9.9	13	0.0064	18	10.0
	120	19.8	15.00	6.64	8.4	13	0.0046	15	8.5
	240	19.8	14.25	6.64	7.6	14	0.0032	14	7.7
	454	20.0	13.50	6.57	6.9	14	0.0024	12	7.0
11-Dec-19	1430	18.5	13.00	7.05	6.0	14	0.0013	11	6.1

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
MKTFLIF-53 8-9	**MK-2**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-44 6-7
HEAL ID: 1911C03-003B
Lab Label: MK-3
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 268.10
Weight Passing #10 (g): 128.63
Weight Retained #10 (g): 139.47
Weight of Hydrometer Sample (g): 74.08
Calculated Weight of Sieve Sample (g): 154.40

Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	268.10	100.00
	2"	50	0.00	0.00	268.10	100.00
	1.5"	38.1	0.00	0.00	268.10	100.00
	1"	25	0.00	0.00	268.10	100.00
	3/4"	19.0	0.00	0.00	268.10	100.00
	3/8"	9.5	29.56	29.56	238.54	88.97
	4	4.75	60.45	90.01	178.09	66.43
	10	2.00	49.46	139.47	128.63	47.98
-10			(Based on calculated sieve wt.)			
	20	0.85	17.20	97.52	56.88	36.84
	35	0.500	6.53	104.05	50.35	32.61
	60	0.250	8.88	112.93	41.47	26.86
	120	0.125	10.77	123.70	30.70	19.88
	230	0.063	5.88	129.58	24.82	16.07
	400	0.038	2.68	132.26	22.14	14.34
	dry pan		0.10	132.36	22.04	
	wet pan			22.04	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-44 6-7
HEAL ID: 1911C03-003B
Lab Label: MK-3
Test Date: 10-Dec-19
Start Time: 9:12

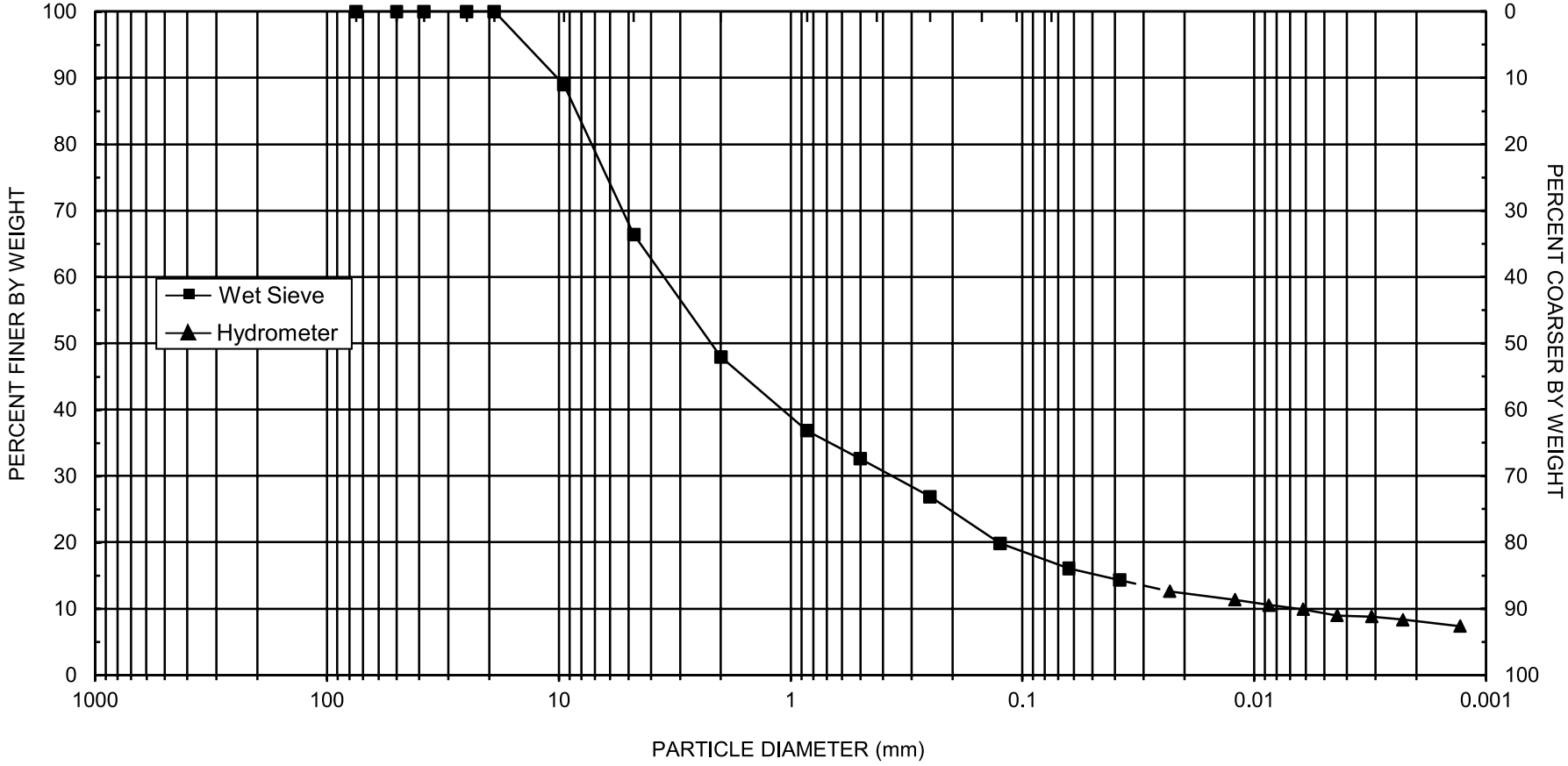
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 74.08
Total Sample Wt. (g)*:* 268.10
Wt. Passing #10 (g)*:* 128.63

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.6	26.25	6.70	19.5	12	0.0231	26	12.7
	15	19.7	24.25	6.67	17.6	12	0.0121	24	11.4
	30	19.7	23.00	6.67	16.3	12	0.0086	22	10.6
	60	19.8	22.00	6.64	15.4	12	0.0061	21	9.9
	120	19.8	20.50	6.64	13.9	12	0.0044	19	9.0
	240	19.8	20.25	6.64	13.6	13	0.0031	18	8.8
	449	20.0	19.50	6.57	12.9	13	0.0023	17	8.4
11-Dec-19	1425	18.5	18.50	7.05	11.5	13	0.0013	15	7.4

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
MKTFLIF-44 6-7	**MK-3**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-44 8-10
HEAL ID: 1911C03-004B
Lab Label: MK-4
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 580.93
Weight Passing #10 (g): 365.48
Weight Retained #10 (g): 215.45
Weight of Hydrometer Sample (g): 59.02
Calculated Weight of Sieve Sample (g): 93.81
Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	580.93	100.00
	2"	50	0.00	0.00	580.93	100.00
	1.5"	38.1	0.00	0.00	580.93	100.00
	1"	25	26.62	26.62	554.31	95.42
	3/4"	19.0	19.10	45.72	535.21	92.13
	3/8"	9.5	61.27	106.99	473.94	81.58
	4	4.75	60.64	167.63	413.30	71.14
	10	2.00	47.82	215.45	365.48	62.91
-10			(Based on calculated sieve wt.)			
	20	0.85	5.71	40.50	53.31	56.83
	35	0.500	3.34	43.84	49.97	53.27
	60	0.250	9.63	53.47	40.34	43.00
	120	0.125	12.14	65.61	28.20	30.06
	230	0.063	4.74	70.35	23.46	25.01
	400	0.038	2.22	72.57	21.24	22.64
	dry pan		0.13	72.70	21.11	
	wet pan			21.11	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-44 8-10
HEAL ID: 1911C03-004B
Lab Label: MK-4
Test Date: 10-Dec-19
Start Time: 9:18

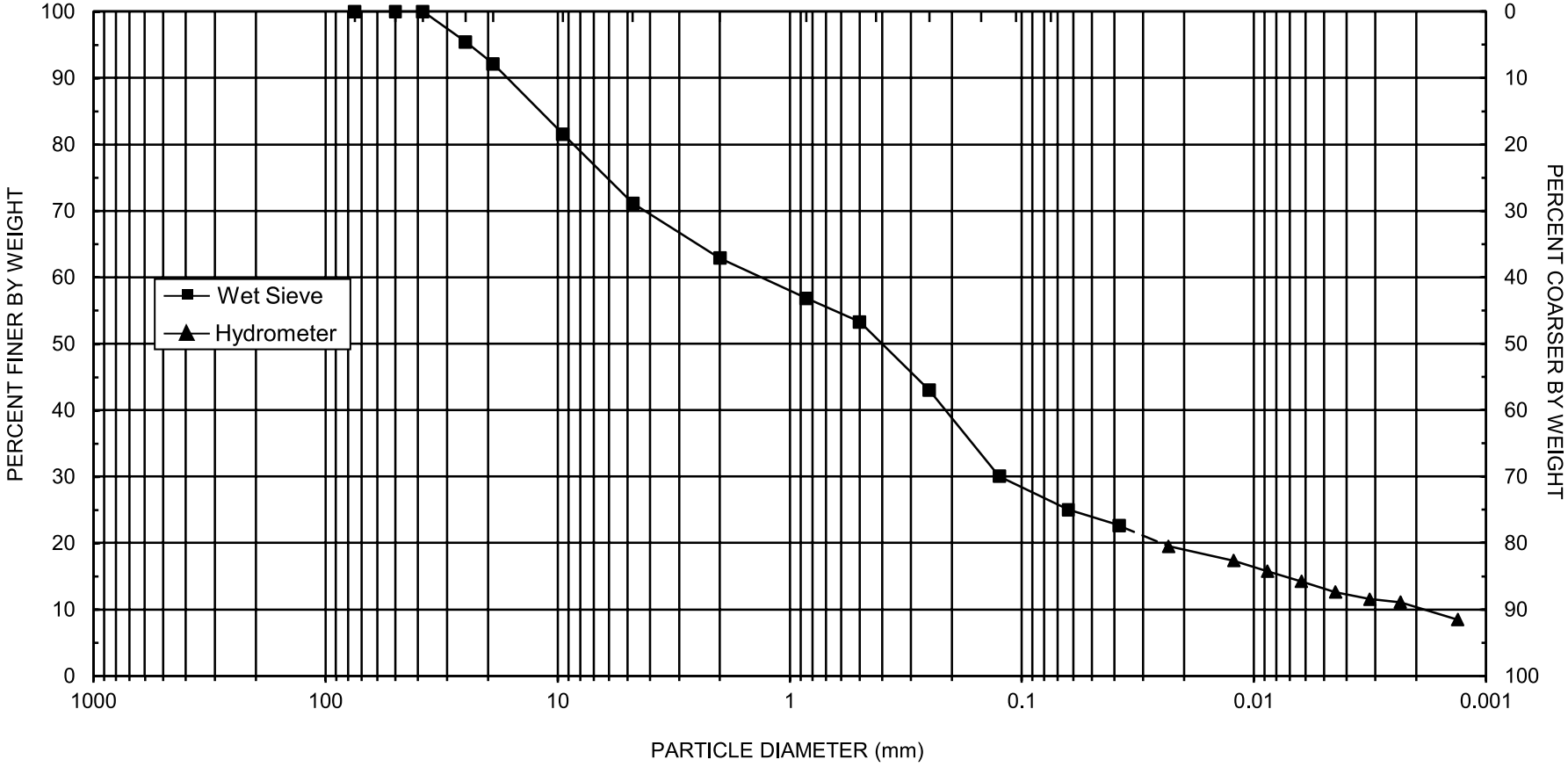
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 59.02
Total Sample Wt. (g)*:* 580.93
Wt. Passing #10 (g)*:* 365.48

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.7	25.00	6.67	18.3	12	0.0233	31	19.5
	15	19.7	23.00	6.67	16.3	12	0.0122	28	17.4
	30	19.7	21.50	6.67	14.8	12	0.0087	25	15.8
	60	19.8	20.00	6.64	13.4	13	0.0062	23	14.2
	120	19.8	18.50	6.64	11.9	13	0.0045	20	12.6
	240	19.8	17.50	6.64	10.9	13	0.0032	18	11.6
	444	20.0	17.00	6.57	10.4	13	0.0023	18	11.1
11-Dec-19	1420	18.5	15.00	7.05	8.0	13	0.0013	13	8.5

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
MKTFLIF-44 8-10	**MK-4**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-44 18-19
HEAL ID: 1911C03-005B
Lab Label: MK-5
Test Date: 19-Dec-19

Initial Dry Weight of Sample (g): 283.00
Weight Passing #10 (g): 281.84
Weight Retained #10 (g): 1.16
Weight of Hydrometer Sample (g): 55.94
Calculated Weight of Sieve Sample (g): 56.17
Shape: Rounded
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	283.00	100.00
	2"	50	0.00	0.00	283.00	100.00
	1.5"	38.1	0.00	0.00	283.00	100.00
	1"	25	0.00	0.00	283.00	100.00
	3/4"	19.0	0.00	0.00	283.00	100.00
	3/8"	9.5	0.00	0.00	283.00	100.00
	4	4.75	0.33	0.33	282.67	99.88
	10	2.00	0.83	1.16	281.84	99.59
-10			(Based on calculated sieve wt.)			
	20	0.85	0.17	0.40	55.77	99.29
	35	0.500	0.28	0.68	55.49	98.79
	60	0.250	2.76	3.44	52.73	93.88
	120	0.125	9.52	12.96	43.21	76.93
	230	0.063	8.85	21.81	34.36	61.17
	400	0.038	3.58	25.39	30.78	54.80
	dry pan		0.33	25.72	30.45	
	wet pan			30.45	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: MKTFLIF-44 18-19
HEAL ID: 1911C03-005B
Lab Label: MK-5
Test Date: 10-Dec-19
Start Time: 9:24

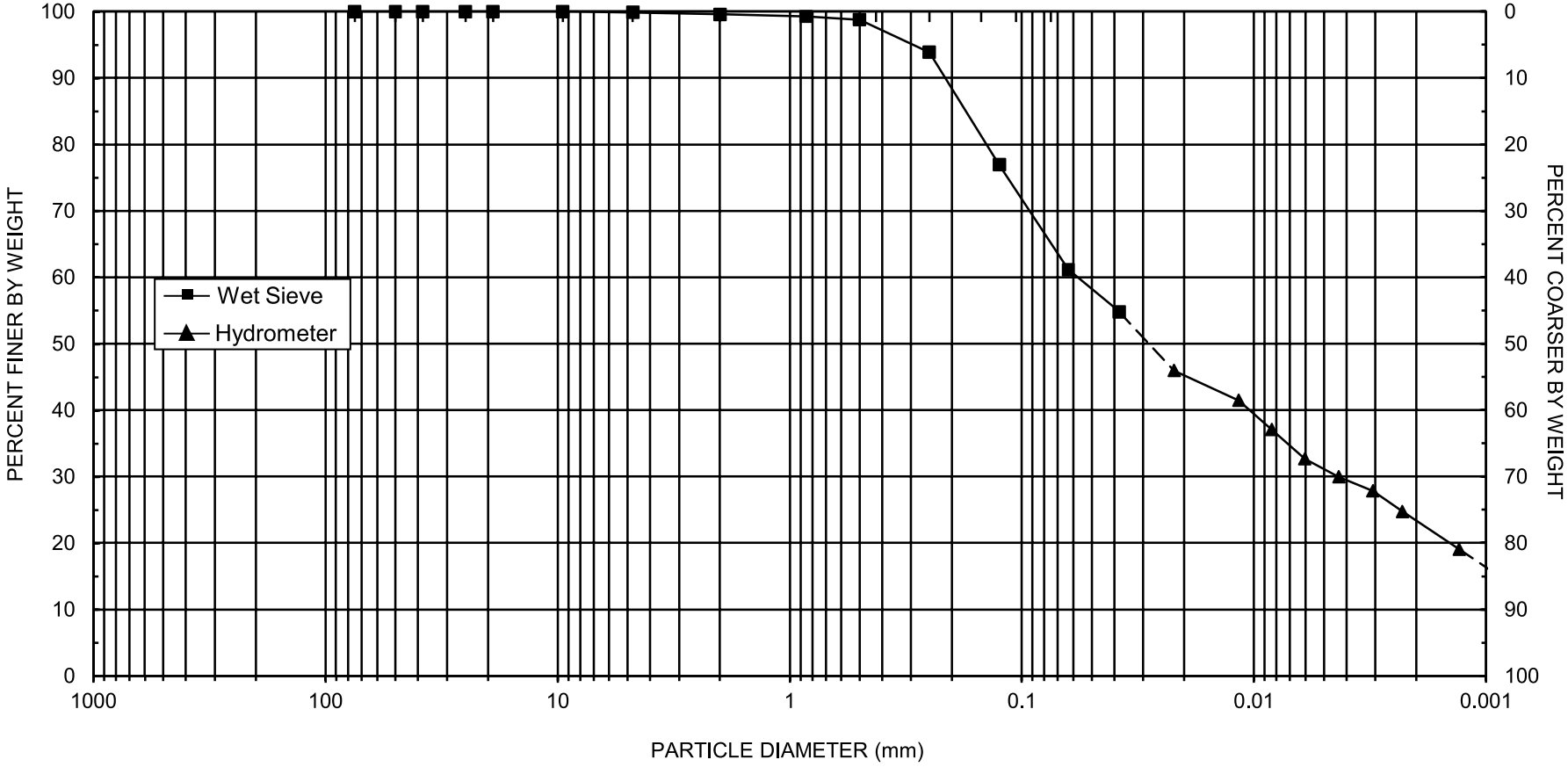
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 55.94
Total Sample Wt. (g)*:* 283.00
Wt. Passing #10 (g)*:* 281.84

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.7	32.50	6.67	25.8	10	0.0221	46	46.0
	15	19.7	30.00	6.67	23.3	11	0.0116	42	41.5
	30	19.7	27.50	6.67	20.8	11	0.0084	37	37.1
	60	19.8	25.00	6.64	18.4	12	0.0060	33	32.7
	120	19.8	23.50	6.64	16.9	12	0.0043	30	30.0
	240	19.9	22.25	6.60	15.6	12	0.0031	28	27.9
	441	20.0	20.50	6.57	13.9	12	0.0023	25	24.8
11-Dec-19	1415	18.5	17.75	7.05	10.7	13	0.0013	19	19.1

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
MKTFLIF-44 18-19	**MK-5**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-34 20-21
HEAL ID: 1911C03-006B
Lab Label: EB-1
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 366.17
Weight Passing #10 (g): 348.06
Weight Retained #10 (g): 18.11
Weight of Hydrometer Sample (g): 55.83
Calculated Weight of Sieve Sample (g): 58.73
Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	366.17	100.00
	2"	50	0.00	0.00	366.17	100.00
	1.5"	38.1	0.00	0.00	366.17	100.00
	1"	25	0.00	0.00	366.17	100.00
	3/4"	19.0	0.00	0.00	366.17	100.00
	3/8"	9.5	5.04	5.04	361.13	98.62
	4	4.75	5.60	10.64	355.53	97.09
	10	2.00	7.47	18.11	348.06	95.05
-10			(Based on calculated sieve wt.)			
	20	0.85	1.30	4.20	54.53	92.84
	35	0.500	1.51	5.71	53.02	90.27
	60	0.250	6.26	11.97	46.76	79.61
	120	0.125	7.97	19.94	38.79	66.04
	230	0.063	8.56	28.50	30.23	51.47
	400	0.038	4.68	33.18	25.55	43.50
	dry pan		0.40	33.58	25.15	
	wet pan			25.15	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-34 20-21
HEAL ID: 1911C03-006B
Lab Label: EB-1
Test Date: 12/10/19q
Start Time: 9:30

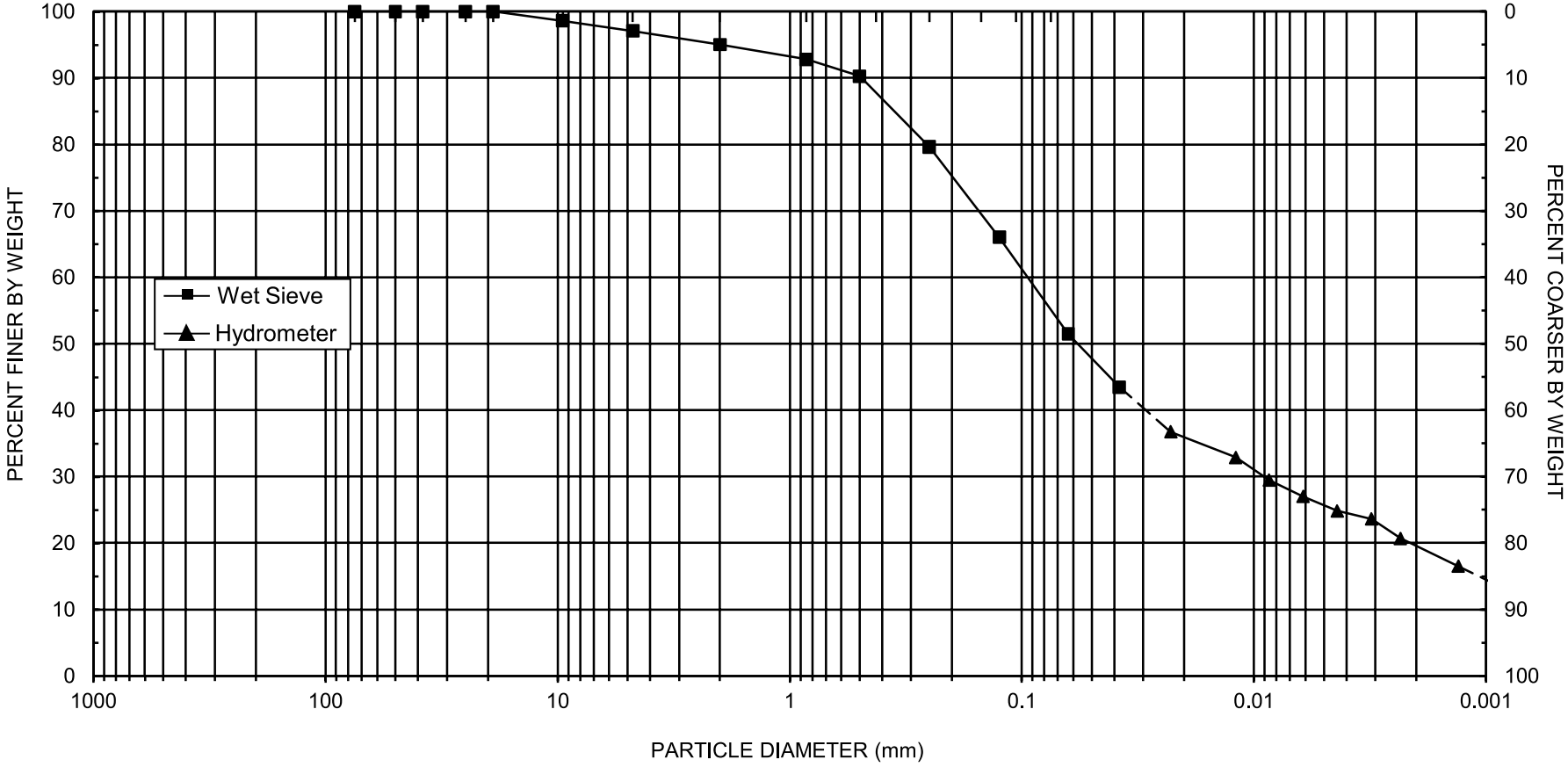
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 55.83
Total Sample Wt. (g)*:* 366.17
Wt. Passing #10 (g)*:* 348.06

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.7	28.25	6.67	21.6	11	0.0228	39	36.7
	15	19.7	26.00	6.67	19.3	12	0.0120	35	32.9
	30	19.7	24.00	6.67	17.3	12	0.0086	31	29.5
	60	19.8	22.50	6.64	15.9	12	0.0061	28	27.0
	120	19.8	21.25	6.64	14.6	12	0.0044	26	24.9
	240	19.9	20.50	6.60	13.9	13	0.0031	25	23.7
	436	20.0	18.75	6.57	12.2	13	0.0023	22	20.7
11-Dec-19	1410	18.5	16.75	7.05	9.7	13	0.0013	17	16.5

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
EB-LIF-34 20-21	**EB-1**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-19 16-19
HEAL ID: 1911C03-007B
Lab Label: EB-2
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 539.36
Weight Passing #10 (g): 539.01
Weight Retained #10 (g): 0.35
Weight of Hydrometer Sample (g): 57.81
Calculated Weight of Sieve Sample (g): 57.85
Shape: Rounded
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	539.36	100.00
	2"	50	0.00	0.00	539.36	100.00
	1.5"	38.1	0.00	0.00	539.36	100.00
	1"	25	0.00	0.00	539.36	100.00
	3/4"	19.0	0.00	0.00	539.36	100.00
	3/8"	9.5	0.00	0.00	539.36	100.00
	4	4.75	0.00	0.00	539.36	100.00
	10	2.00	0.35	0.35	539.01	99.94
-10			(Based on calculated sieve wt.)			
	20	0.85	0.18	0.22	57.63	99.62
	35	0.500	1.29	1.51	56.34	97.39
	60	0.250	4.16	5.67	52.18	90.20
	120	0.125	5.28	10.95	46.90	81.08
	230	0.063	5.61	16.56	41.29	71.38
	400	0.038	4.11	20.67	37.18	64.27
	dry pan		0.45	21.12	36.73	
	wet pan			36.73	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-19 16-19
HEAL ID: 1911C03-007B
Lab Label: EB-2
Test Date: 10-Dec-19
Start Time: 9:36

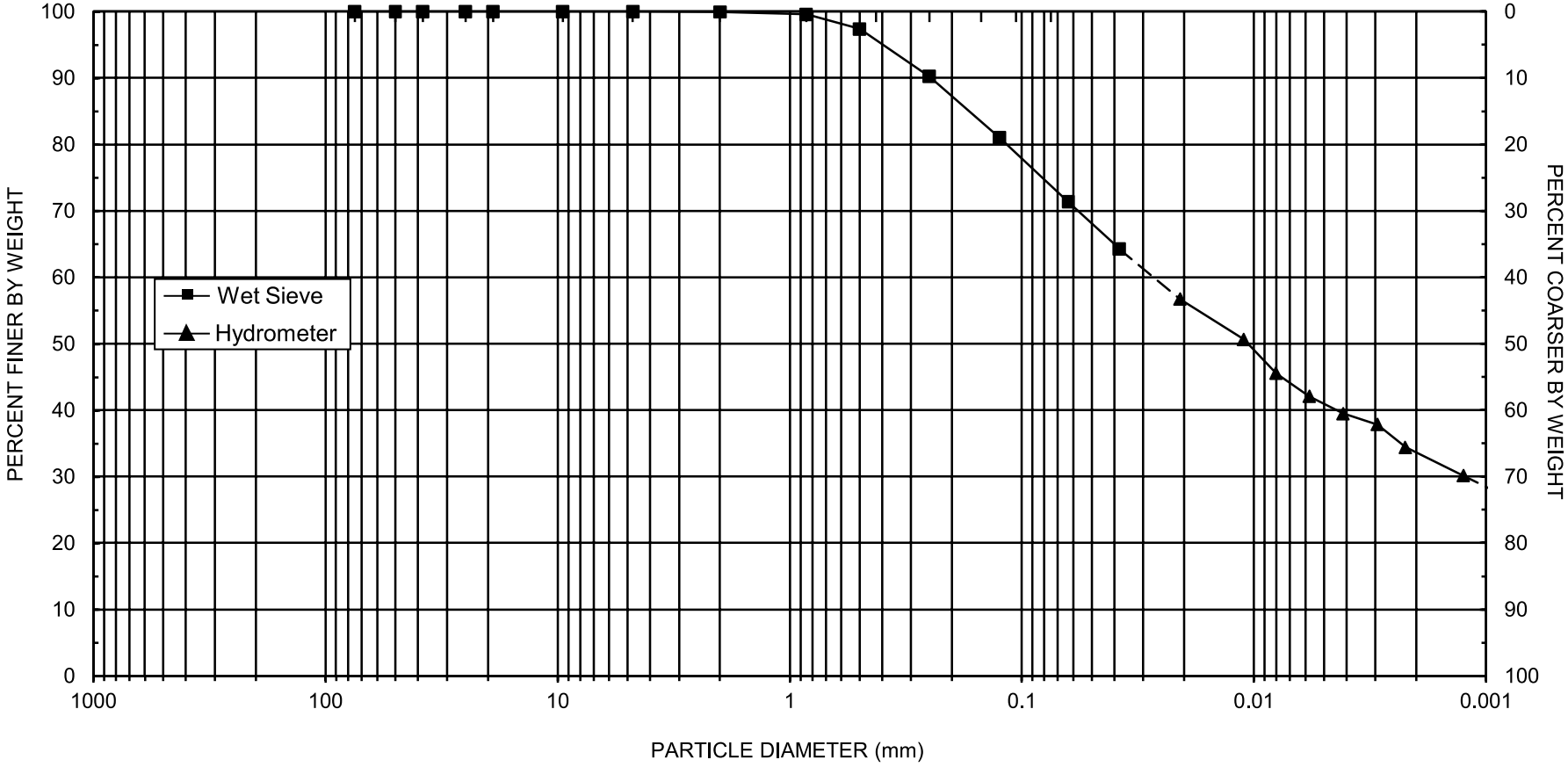
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 57.81
Total Sample Wt. (g)*:* 539.36
Wt. Passing #10 (g)*:* 539.01

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.7	39.50	6.67	32.8	9	0.0208	57	56.8
	15	19.7	36.00	6.67	29.3	10	0.0111	51	50.7
	30	19.8	33.00	6.64	26.4	10	0.0080	46	45.6
	60	19.8	31.00	6.64	24.4	11	0.0058	42	42.1
	120	19.8	29.50	6.64	22.9	11	0.0041	40	39.5
	240	19.9	28.50	6.60	21.9	11	0.0029	38	37.8
	431	20.0	26.50	6.57	19.9	11	0.0022	34	34.4
11-Dec-19	1406	18.5	24.50	7.05	17.5	12	0.0012	30	30.2

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
EB-LIF-19 16-19	**EB-2**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-20 27-28
HEAL ID: 1911C03-008B
Lab Label: EB-3
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 29.70
Weight Passing #10 (g): 27.06
Weight Retained #10 (g): 2.64
Weight of Hydrometer Sample (g): 26.91
Calculated Weight of Sieve Sample (g): 29.54

Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	29.70	100.00
	2"	50	0.00	0.00	29.70	100.00
	1.5"	38.1	0.00	0.00	29.70	100.00
	1"	25	0.00	0.00	29.70	100.00
	3/4"	19.0	0.00	0.00	29.70	100.00
	3/8"	9.5	0.00	0.00	29.70	100.00
	4	4.75	1.51	1.51	28.19	94.92
	10	2.00	1.13	2.64	27.06	91.11
-10			(Based on calculated sieve wt.)			
	20	0.85	1.52	4.15	25.39	85.96
	35	0.500	2.34	6.49	23.05	78.04
	60	0.250	7.95	14.44	15.10	51.13
	120	0.125	5.94	20.38	9.16	31.01
	230	0.063	2.62	23.00	6.54	22.14
	400	0.038	1.00	24.00	5.54	18.76
	dry pan		0.01	24.01	5.53	
	wet pan			5.53	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-20 27-28
HEAL ID: 1911C03-008B
Lab Label: EB-3
Test Date: 10-Dec-19
Start Time: 9:42

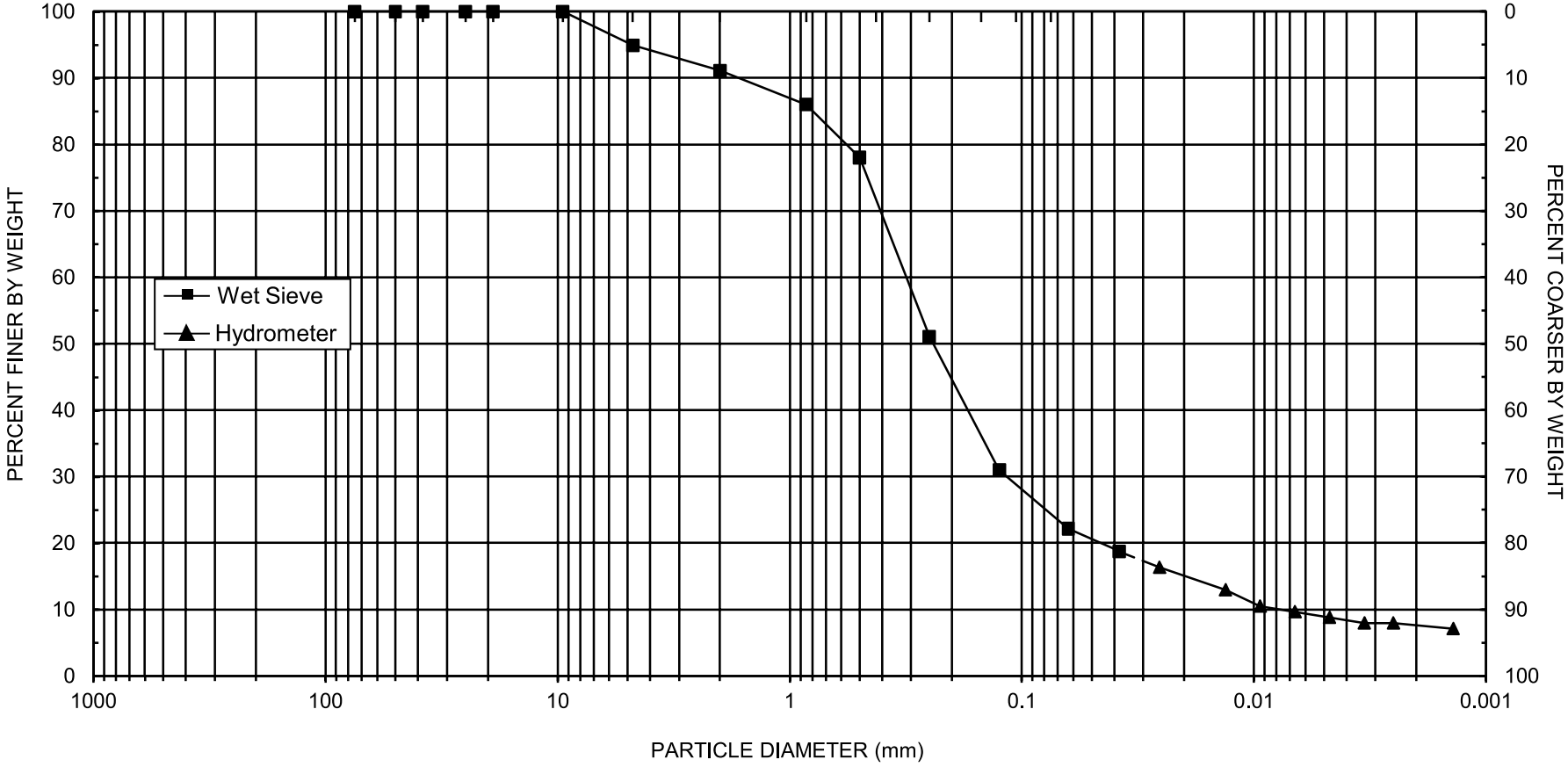
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 26.91
Total Sample Wt. (g)*:* 29.70
Wt. Passing #10 (g)*:* 27.06

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.7	11.50	6.67	4.8	14	0.0255	18	16.4
	15	19.7	10.50	6.67	3.8	14	0.0132	14	13.0
	30	19.8	9.75	6.64	3.1	14	0.0094	12	10.5
	60	19.8	9.50	6.64	2.9	14	0.0067	11	9.7
	120	19.8	9.25	6.64	2.6	14	0.0047	10	8.9
	240	19.8	9.00	6.64	2.4	14	0.0033	9	8.0
	427	19.8	9.00	6.64	2.4	14	0.0025	9	8.0
11-Dec-19	1401	19.8	8.75	6.64	2.1	14	0.0014	8	7.2

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Hines
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
EB-LIF-20 27-28	**EB-3**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-28 20-21
HEAL ID: 1911C03-009B
Lab Label: EB-4
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 218.12
Weight Passing #10 (g): 157.69
Weight Retained #10 (g): 60.43
Weight of Hydrometer Sample (g): 64.97
Calculated Weight of Sieve Sample (g): 89.87

Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	218.12	100.00
	2"	50	0.00	0.00	218.12	100.00
	1.5"	38.1	0.00	0.00	218.12	100.00
	1"	25	0.00	0.00	218.12	100.00
	3/4"	19.0	9.81	9.81	208.31	95.50
	3/8"	9.5	26.53	36.34	181.78	83.34
	4	4.75	14.00	50.34	167.78	76.92
	10	2.00	10.09	60.43	157.69	72.30
-10			(Based on calculated sieve wt.)			
	20	0.85	4.98	29.88	59.99	66.75
	35	0.500	5.37	35.25	54.62	60.78
	60	0.250	17.25	52.50	37.37	41.58
	120	0.125	12.98	65.48	24.39	27.14
	230	0.063	4.41	69.89	19.98	22.23
	400	0.038	2.10	71.99	17.88	19.90
	dry pan		0.20	72.19	17.68	
	wet pan			17.68	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-28 20-21
HEAL ID: 1911C03-009B
Lab Label: EB-4
Test Date: 10-Dec-19
Start Time: 9:48

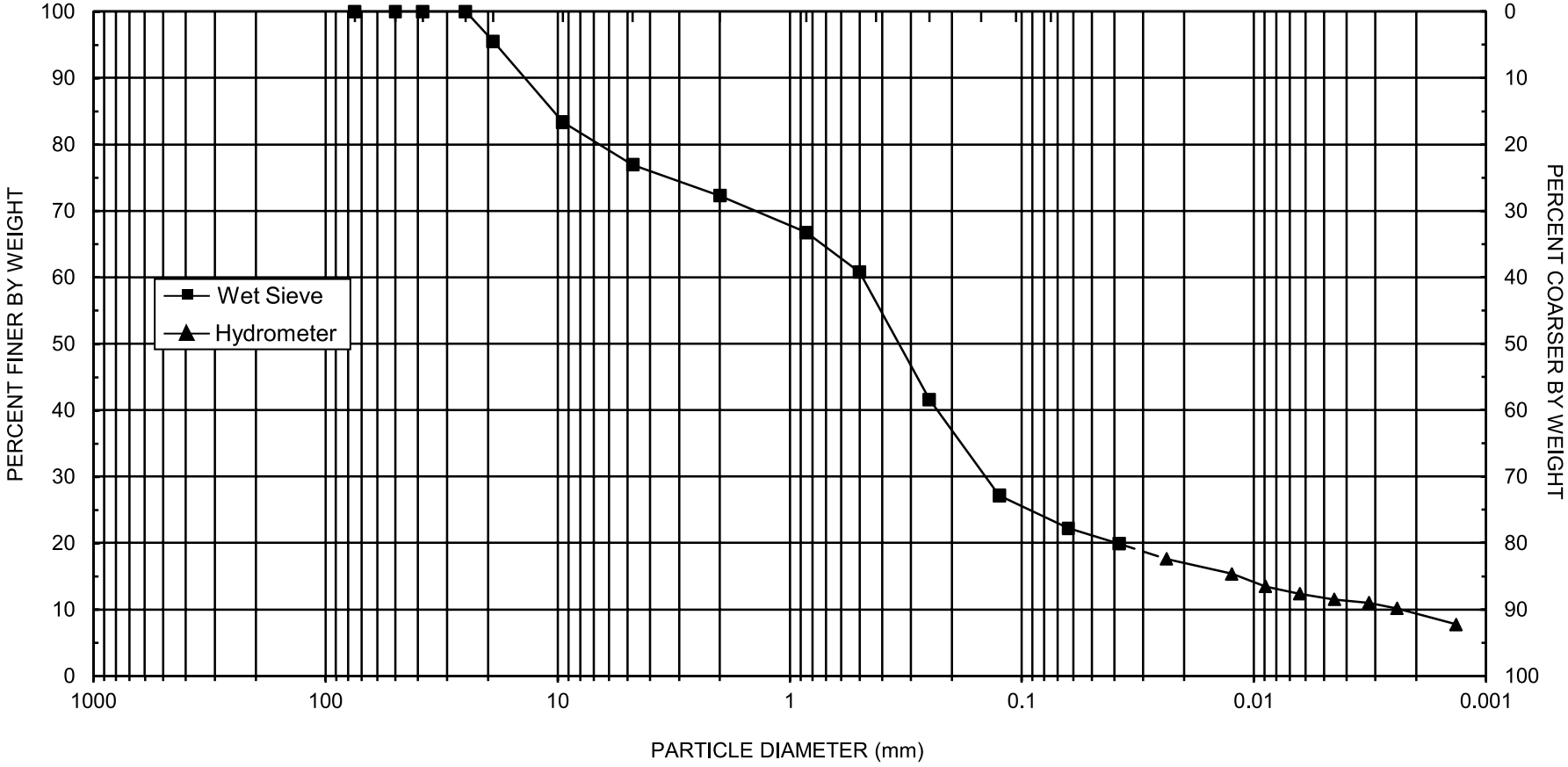
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 64.97
Total Sample Wt. (g)*:* 218.12
Wt. Passing #10 (g)*:* 157.69

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Dec-19	4	19.7	22.50	6.67	15.8	12	0.0238	24	17.6
	15	19.7	20.50	6.67	13.8	13	0.0124	21	15.4
	30	19.8	18.75	6.64	12.1	13	0.0089	19	13.5
	60	19.8	17.75	6.64	11.1	13	0.0063	17	12.4
	120	19.8	17.00	6.64	10.4	13	0.0045	16	11.5
	240	19.9	16.50	6.60	9.9	13	0.0032	15	11.0
	422	20.0	15.75	6.57	9.2	13	0.0024	14	10.2
11-Dec-19	1396	18.6	14.00	7.02	7.0	14	0.0013	11	7.8

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
EB-LIF-28 20-21	**EB-4**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Wet Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-28 21-23
HEAL ID: 1911C03-010B
Lab Label: EB-5
Test Date: 12-Dec-19

Initial Dry Weight of Sample (g): 391.02
Weight Passing #10 (g): 252.36
Weight Retained #10 (g): 138.66
Weight of Hydrometer Sample (g): 70.05
Calculated Weight of Sieve Sample (g): 108.54

Shape: Rounded
Hardness: Hard and durable

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	391.02	100.00
	2"	50	0.00	0.00	391.02	100.00
	1.5"	38.1	0.00	0.00	391.02	100.00
	1"	25	0.00	0.00	391.02	100.00
	3/4"	19.0	0.00	0.00	391.02	100.00
	3/8"	9.5	45.46	45.46	345.56	88.37
	4	4.75	46.79	92.25	298.77	76.41
	10	2.00	46.41	138.66	252.36	64.54
-10			(Based on calculated sieve wt.)			
	20	0.85	11.47	49.96	58.58	53.97
	35	0.500	9.73	59.69	48.85	45.01
	60	0.250	15.63	75.32	33.22	30.61
	120	0.125	9.44	84.76	23.78	21.91
	230	0.063	4.35	89.11	19.43	17.90
	400	0.038	2.11	91.22	17.32	15.96
	dry pan		0.14	91.36	17.18	
	wet pan			17.18	0.00	

Laboratory analysis by: A. Albay-Yenney
Data entered by: A. Albay-Yenney
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB19.1446.00
Sample Number: EB-LIF-28 21-23
HEAL ID: 1911C03-010B
Lab Label: EB-5
Test Date: 11-Dec-19
Start Time: 9:54

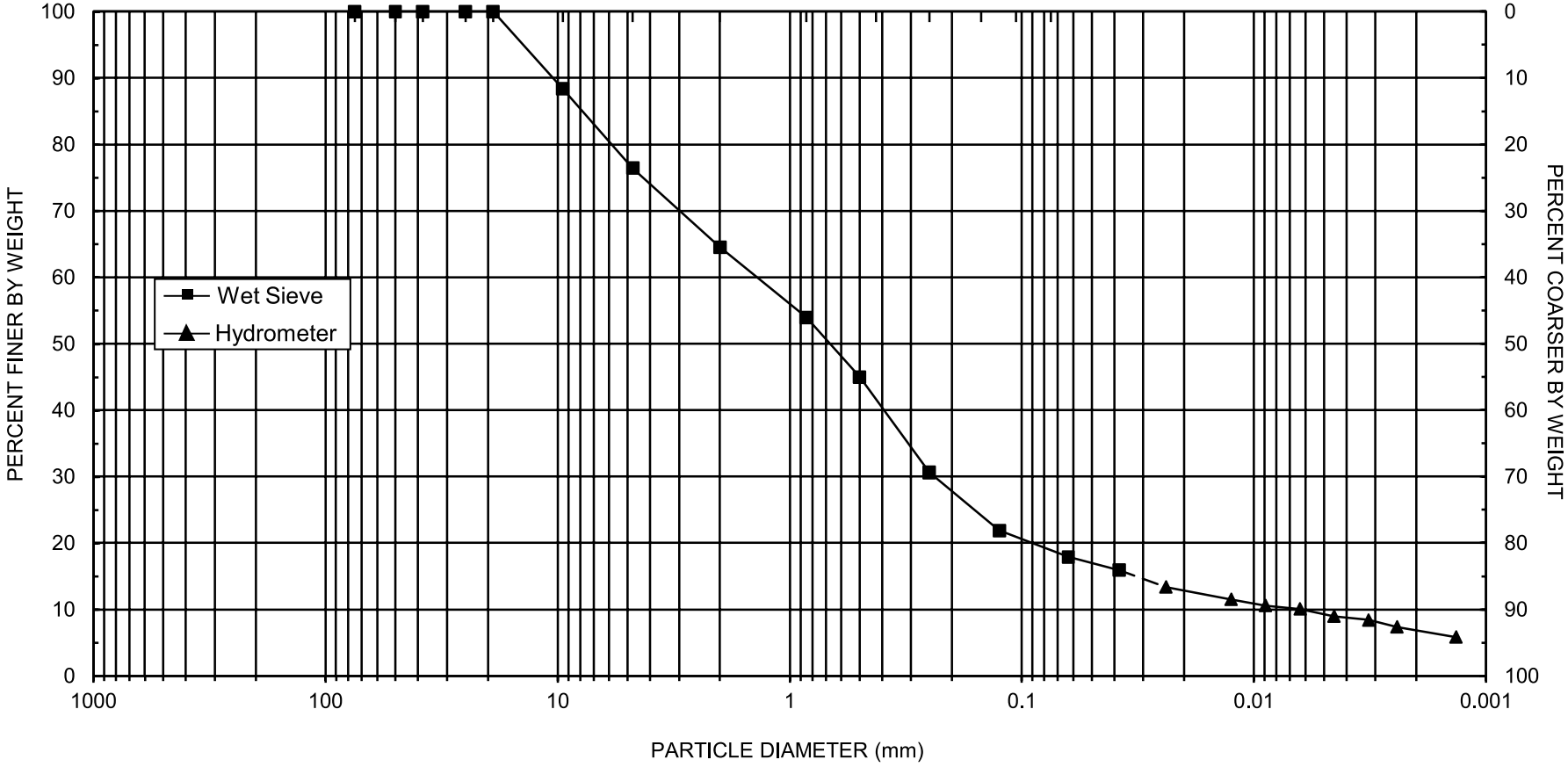
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 70.05
Total Sample Wt. (g)*:* 391.02
Wt. Passing #10 (g)*:* 252.36

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
11-Dec-19	4	18.8	21.50	6.96	14.5	12	0.0239	21	13.4
	15	18.8	19.50	6.96	12.5	13	0.0125	18	11.6
	30	18.8	18.50	6.96	11.5	13	0.0089	16	10.6
	60	19.3	17.75	6.80	11.0	13	0.0063	16	10.1
	120	19.6	16.50	6.70	9.8	13	0.0045	14	9.0
	240	20.0	15.75	6.57	9.2	13	0.0032	13	8.5
	430	20.2	14.50	6.50	8.0	13	0.0024	11	7.4
12-Dec-19	1407	19.1	13.25	6.86	6.4	14	0.0013	9	5.9

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: J. Niedbala
Data entered by: A. Albay-Yenney
Checked by: J. Hines



SAMPLE NUMBER	LAB LABEL
EB-LIF-28 21-23	**EB-5**

Laboratory Tests and Methods

Tests and Methods

Particle Size Analysis:	ASTM D7928, ASTM D6913

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1911C03**

17-Dec-19

Client: Marathon

Project: LIF Investigation

Sample ID: **LCS-49056**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **49056**	RunNo: **64856**
Prep Date: **11/27/2019**	Analysis Date: **12/2/2019**	SeqNo: **2223563** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	103	63.9	124			
Surr: DNOP	5.1		5.000		102	70	130			

Sample ID: **MB-49056**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **49056**	RunNo: **64856**
Prep Date: **11/27/2019**	Analysis Date: **12/2/2019**	SeqNo: **2223565** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.0		10.00		79.9	70	130			

Sample ID: **LCS-49070**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **49070**	RunNo: **64876**
Prep Date: **12/2/2019**	Analysis Date: **12/3/2019**	SeqNo: **2224173** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.8	63.9	124			
Surr: DNOP	4.0		5.000		79.0	70	130			

Sample ID: **MB-49070**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **49070**	RunNo: **64876**
Prep Date: **12/2/2019**	Analysis Date: **12/3/2019**	SeqNo: **2224174** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1911C03**

17-Dec-19

Client: Marathon

Project: LIF Investigation

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **S64862**	RunNo: **64862**							
Prep Date:	Analysis Date: **12/2/2019**	SeqNo: **2223727**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	820		1000		81.9	77.4	118			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **S64862**	RunNo: **64862**							
Prep Date:	Analysis Date: **12/2/2019**	SeqNo: **2223728**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.0	80	120			
Surr: BFB	920		1000		92.4	77.4	118			

Sample ID: **1911c03-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **MKTF-LIF-53 7.8**	Batch ID: **S64862**	RunNo: **64862**							
Prep Date:	Analysis Date: **12/3/2019**	SeqNo: **2223730**	Units: **mg/Kg-dry**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1700	29	145.4	1571	91.6	69.1	142			
Surr: BFB	13000		5818		216	77.4	118			S

Sample ID: **1911c03-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **MKTF-LIF-53 7.8**	Batch ID: **S64862**	RunNo: **64862**							
Prep Date:	Analysis Date: **12/3/2019**	SeqNo: **2223731**	Units: **mg/Kg-dry**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1800	29	145.4	1571	129	69.1	142	3.14	20	
Surr: BFB	13000		5817		219	77.4	118	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: MARATHON GALLUP Work Order Number: 1911C03 RcptNo: 1

Received By: Isaiah Ortiz 11/26/2019 12:20:00 PM I-OK

Completed By: Isaiah Ortiz 11/26/2019 12:59:02 PM I-OK

Reviewed By: 11/26/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: JR 11/26/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Not Present			

Chain-of-Custody Record

Client: Marathon Petroleum Company
Gallup Refining Division

Mailing Address:

Phone #: 505-726-9745

email or Fax#: ~~phil~~ BMoore1@marathonpetroleum.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: LIF Investigation

Project #: 697-066-001

Project Manager: phildebrandt@Trihydro.com
Paul Hildebrandt

Sampler: Paul Hildebrandt

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.6 -0.5 (cf) 5.1 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1911C03	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Grain Size Analysis	Moisture			Air Bubbles (Y or N)
11/25/19	1045	Soil	MKTF-LIF-53 7-8	Glass/3	MeOH	-001			X													
11/25/19	1045	Soil	MKTF-LIF-53 7-8	Ziploc/1	—	1												X	X			
11/25/19	1045	Soil	MKTF-LIF-53 8-9	Glass/3	MeOH	-002			X													
11/25/19	1045	Soil	MKTF-LIF-53 8-9	Ziploc/1	—	1												X	X			
11/24/19	1430	Soil	MKTF-LIF-44 6-7	Glass/3	MeOH	-003			X													
11/24/19	1430	Soil	MKTF-LIF-44 6-7	Ziploc/1	—	1												X	X			
11/24/19	1415	Soil	MKTF-LIF-44 8-10	Glass/3	MeOH	-004			X													
11/24/19	1415	Soil	MKTF-LIF-44 8-10	Ziploc/1	—	1												X	X			
11/24/19	1420	Soil	MKTF-LIF-44 18-19	Glass/3	MeOH	-005			X													
11/24/19	1420	Soil	MKTF-LIF-44 18-19	Ziploc/1	—	1												X	X			
11/25/19	0820	Soil	EB-LIF-34 20-21	Glass/3	MeOH	-006			X													
11/25/19	0820	Soil	EB-LIF-34 20-21	Ziploc/1	—	1												X	X			

Date	Time	Relinquished by:	Received by:	Date	Time
11/26/19	1220		client	11/26/19	1220

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company Gallup Refining Division
Mailing Address:
Phone #: 505-726-5745
email or Fax#: BMoore1@MarathonPetroleum.com
QA/QC Package: ☑ Standard ☐ Level 4 (Full Validation)
Accreditation ☐ NELAP ☐ Other ____
☐ EDD (Type) ____

Turn-Around Time: ☑ Standard ☐ Rush ____
Project Name: LIF Investigation
Project #: 697-066-001
Project Manager: Paul Hildebrandt phildebrandt@Trihydro.com
Sampler: P Hildebrandt
On Ice: ■ Yes ☐ No
Sample Temperature: 5.6-0.5[ce] 5.1°C

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Grain size	Moisture			Air Bubbles (Y or N)
11/25/19	0903	Soil	EB-LIF-19 16-18	Glass/3	MeOH	-007			X													
11/25/19	0903	Soil	EB-LIF-19 16-18	Ziploc/1	—	1												X	X			
11/25/19	1320	Soil	EB-LIF-20 27-28	Glass/3	MeOH	-008			X													
11/25/19	1320	Soil	EB-LIF-20 27-28	Ziploc/1	—	1												X	X			
11/25/19	0940	Soil	EB-LIF-28 20-21	Glass/3	MeOH	-009			X													
11/25/19	0940	Soil	EB-LIF-28 20-21	Ziploc/1	—	1												X	X			
11/25/19	0930	Soil	EB-LIF-28 21-23	Glass/3	MeOH	~~-010~~ 10			X													
11/25/19	0930	Soil	EB-LIF-28 21-23	Ziploc/1	—	1												X	X			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/25/19	~~1645~~ 1220		In Ice client	11/26/19	1220
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

February 17, 2021

Paul Hildebrandt

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX

RE: MPC MKTF LIF Investigation OrderNo.: 2102373

Dear Paul Hildebrandt:

Hall Environmental Analysis Laboratory received 6 sample(s) on 2/6/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2102373**
Date Reported: **2/17/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-74 2-3
Project: MPC MKTF LIF Investigation
Collection Date: 2/4/2021 9:45:00 AM
Lab ID: 2102373-001 **Matrix:** SOIL **Received Date:** 2/6/2021 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	20	1.0		wt%	1	2/8/2021	R75175
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	1500	290		mg/Kg-dr	50	2/12/2021 5:10:33 AM	57986
Surr: BFB	99.6	70-130		%Rec	50	2/12/2021 5:10:33 AM	57986
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	490	12		mg/Kg-dr	1	2/11/2021 9:26:54 AM	58001
Motor Oil Range Organics (MRO)	ND	62		mg/Kg-dr	1	2/11/2021 9:26:54 AM	58001
Surr: DNOP	102	70-130		%Rec	1	2/11/2021 9:26:54 AM	58001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2102373**
Date Reported: **2/17/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-LIF-74 4-5
Project: MPC MKTF LIF Investigation
Collection Date: 2/4/2021 9:47:00 AM
Lab ID: 2102373-002 **Matrix:** SOIL **Received Date:** 2/6/2021 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	19	1.0		wt%	1	2/8/2021	R75175
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	2300	290		mg/Kg-dr	50	2/12/2021 5:39:04 AM	57986
Surr: BFB	101	70-130		%Rec	50	2/12/2021 5:39:04 AM	57986
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	180	12		mg/Kg-dr	1	2/10/2021 8:45:58 PM	58001
Motor Oil Range Organics (MRO)	ND	59		mg/Kg-dr	1	2/10/2021 8:45:58 PM	58001
Surr: DNOP	118	70-130		%Rec	1	2/10/2021 8:45:58 PM	58001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2102373**
Date Reported: **2/17/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-LIF-74 5-6
Project: MPC MKTF LIF Investigation **Collection Date:** 2/4/2021 9:49:00 AM
Lab ID: 2102373-003 **Matrix:** SOIL **Received Date:** 2/6/2021 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	23	1.0		wt%	1	2/8/2021	R75175
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	630	65		mg/Kg-dr	10	2/12/2021 6:07:35 AM	57986
Surr: BFB	101	70-130		%Rec	10	2/12/2021 6:07:35 AM	57986
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	22	12		mg/Kg-dr	1	2/10/2021 8:55:44 PM	58001
Motor Oil Range Organics (MRO)	ND	62		mg/Kg-dr	1	2/10/2021 8:55:44 PM	58001
Surr: DNOP	113	70-130		%Rec	1	2/10/2021 8:55:44 PM	58001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2102373**
Date Reported: **2/17/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MKTF-LIF-85 7-9
Project: MPC MKTF LIF Investigation **Collection Date:** 2/5/2021 10:31:00 AM
Lab ID: 2102373-004 **Matrix:** SOIL **Received Date:** 2/6/2021 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	25	1.0		wt%	1	2/8/2021	R75175
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	130	67		mg/Kg-dr	10	2/12/2021 6:36:12 AM	57986
Surr: BFB	103	70-130		%Rec	10	2/12/2021 6:36:12 AM	57986
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	13		mg/Kg-dr	1	2/11/2021 9:56:42 AM	58001
Motor Oil Range Organics (MRO)	ND	64		mg/Kg-dr	1	2/11/2021 9:56:42 AM	58001
Surr: DNOP	102	70-130		%Rec	1	2/11/2021 9:56:42 AM	58001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2102373**
Date Reported: **2/17/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** PA-LIF-07 11-13
Project: MPC MKTF LIF Investigation **Collection Date:** 2/5/2021 1:31:00 PM
Lab ID: 2102373-005 **Matrix:** SOIL **Received Date:** 2/6/2021 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	13	1.0		wt%	1	2/8/2021	R75175
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	300	110		mg/Kg-dr	20	2/12/2021 7:04:44 AM	57986
Surr: BFB	101	70-130		%Rec	20	2/12/2021 7:04:44 AM	57986
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	130	10		mg/Kg-dr	1	2/10/2021 9:15:11 PM	58001
Motor Oil Range Organics (MRO)	ND	50		mg/Kg-dr	1	2/10/2021 9:15:11 PM	58001
Surr: DNOP	103	70-130		%Rec	1	2/10/2021 9:15:11 PM	58001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2102373**
Date Reported: **2/17/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** PA-LIF-07 13-14
Project: MPC MKTF LIF Investigation **Collection Date:** 2/5/2021 1:32:00 PM
Lab ID: 2102373-006 **Matrix:** SOIL **Received Date:** 2/6/2021 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
PERCENT MOISTURE						Analyst: **JMR**	
Percent Moisture	13	1.0		wt%	1	2/8/2021	R75175
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	82	5.6		mg/Kg-dr	1	2/12/2021 7:33:18 AM	57986
Surr: BFB	102	70-130		%Rec	1	2/12/2021 7:33:18 AM	57986
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	11	11		mg/Kg-dr	1	2/11/2021 10:20:26 AM	58001
Motor Oil Range Organics (MRO)	ND	53		mg/Kg-dr	1	2/11/2021 10:20:26 AM	58001
Surr: DNOP	91.8	70-130		%Rec	1	2/11/2021 10:20:26 AM	58001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Laboratory Report for
Hall Environmental Analysis Laboratory

Project Number: 2102373

February 16, 2021

Daniel B. Stephens & Associates, Inc.

4400 Alameda Blvd. NE, Suite C • Albuquerque, New Mexico 87113

February 16, 2021

Andy Freeman
Hall Environmental Analysis Laboratory
4901 Hawkins NE, Suite D
Albuquerque, NM 87109
(505) 345-3975

Re: DBS&A Laboratory Report for the HEAL Project Number: 2102373 Sample Testing

Dear Mr. Freeman:

Enclosed is the report for the HEAL Project Number: 2102373 sample testing. Please review this report and provide any comments as samples will be held for a maximum of 30 days. After 30 days samples will be returned or disposed of in an appropriate manner.

All testing results were evaluated subjectively for consistency and reasonableness, and the results appear to be reasonably representative of the material tested. However, DBS&A does not assume any responsibility for interpretations or analyses based on the data enclosed, nor can we guarantee that these data are fully representative of the undisturbed materials at the field site. We recommend that careful evaluation of these laboratory results be made for your particular application.

The testing utilized to generate the enclosed report employs methods that are standard for the industry. The results do not constitute a professional opinion by DBS&A, nor can the results affect any professional or expert opinions rendered with respect thereto by DBS&A. You have acknowledged that all the testing undertaken by us, and the report provided, constitutes mere test results using standardized methods, and cannot be used to disqualify DBS&A from rendering any professional or expert opinion, having waived any claim of conflict of interest by DBS&A.

We are pleased to provide this service to HEAL and look forward to future laboratory testing on other projects. If you have any questions about the enclosed data, please do not hesitate to call.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.
SOIL TESTING & RESEARCH LABORATORY

Joleen Hines
Laboratory Manager

Enclosure

Daniel B. Stephens & Associates, Inc.
Soil Testing & Research Laboratory
4400 Alameda Blvd. NE, Suite C
Albuquerque, NM 87113
505-889-7752
FAX 505-889-0258

Summaries

Daniel B. Stephens & Associates, Inc.

Summary of Tests Performed

Laboratory Sample Number	Initial Soil Properties[1]			Saturated Hydraulic Conductivity[2]			Moisture Characteristics[3]								Particle Size[4]			Specific Gravity[5]		Air Perm-eability	Atterberg Limits	Proctor Compaction
	G	VM	VD	CH	FH	FW	HC	PP	FP	DPP	RH	EP	WHC	K_{unsat}	DS	WS	H	F	C			
2102373-001B/ MKTF-LIF-74 2-3																X	X					
2102373-002B/ MKTF-LIF-74 4-5																X	X					
2102373-004B/ MKTF-LIF-85 7-9																X	X					
2102373-005B/ PA-LIF-07 11-13																X	X					

[1] G = Gravimetric Moisture Content, VM = Volume Measurement Method, VD = Volume Displacement Method

[2] CH = Constant Head Rigid Wall, FH = Falling Head Rigid Wall, FW = Falling Head Rising Tail Flexible Wall

[3] HC = Hanging Column, PP = Pressure Plate, FP = Filter Paper, DPP = Dew Point Potentiometer, RH = Relative Humidity Box, EP = Effective Porosity, WHC = Water Holding Capacity, Kunsat = Calculated Unsaturated Hydraulic Conductivity

[4] DS = Dry Sieve, WS = Wet Sieve, H = Hydrometer

[5] F = Fine (<4.75mm), C = Coarse (>4.75mm)

Notes

Sample Receipt:
Four samples, each as loose material in an 8-oz jar, were hand-delivered on February 8, 2021. The samples were delivered in a cooler with ice packs and were received in good order.

Sample Preparation and Testing Notes:
Each of the samples was subjected to particle size analysis testing.

Particle diameter calculations in the hydrometer portion of the particle size analysis testing are based on the use of an assumed specific gravity value of 2.65.

Daniel B. Stephens & Associates, Inc.

Summary of Particle Size Characteristics

Sample Number	d_{10} (mm)	d_{50} (mm)	d_{60} (mm)	C_u	C_c	Method	ASTM Classification	USDA Classification	
2102373-001B/ MKTF-LIF-74 2-3	0.0018	0.11	0.17	94	3.3	WS/H	Classification by ASTM 2487 requires Atterberg test	Sandy Loam	
2102373-002B/ MKTF-LIF-74 4-5	0.0010	0.041	0.057	57	1.2	WS/H	Classification by ASTM 2487 requires Atterberg test	Loam	(Est)
2102373-004B/ MKTF-LIF-85 7-9	0.00065	0.030	0.047	72	1.3	WS/H	Classification by ASTM 2487 requires Atterberg test	Loam	(Est)
2102373-005B/ PA-LIF-07 11-13	0.0039	0.29	0.40	103	7.8	WS/H	Classification by ASTM 2487 requires Atterberg test	Sandy Loam †	

Est = Reported values for d_{10}, C_u, C_c, and soil classification are estimates, since extrapolation was required to obtain the d_{10} diameter

$$C_u = \frac{d_{60}}{d_{10}}$$

$$C_c = \frac{(d_{30})^2}{(d_{10})(d_{60})}$$

DS = Dry sieve

H = Hydrometer

WS = Wet sieve

† Greater than 10% of sample is coarse material

d_{50} = Median particle diameter

Daniel B. Stephens & Associates, Inc.

Percent Gravel, Sand, Silt and Clay*

Sample Number	% Gravel (>4.75mm)	% Sand (<4.75mm, >0.075mm)	% Silt (<0.075mm, >0.002mm)	% Clay (<0.002mm)
2102373-001B/ MKTF-LIF-74 2-3	0.9	54.9	33.2	11.0
2102373-002B/ MKTF-LIF-74 4-5	0.0	30.3	51.9	17.8
2102373-004B/ MKTF-LIF-85 7-9	0.0	23.5	55.9	20.6
2102373-005B/ PA-LIF-07 11-13	13.5	59.0	19.4	8.1

*USCS classification does not classify clay fraction based on particle size. USDA definition of clay (<0.002mm) used in this table.

Particle Size Analysis

Daniel B. Stephens & Associates, Inc.

Summary of Particle Size Characteristics

Sample Number	d_{10} (mm)	d_{50} (mm)	d_{60} (mm)	C_u	C_c	Method	ASTM Classification	USDA Classification	
2102373-001B/ MKTF-LIF-74 2-3	0.0018	0.11	0.17	94	3.3	WS/H	Classification by ASTM 2487 requires Atterberg test	Sandy Loam	
2102373-002B/ MKTF-LIF-74 4-5	0.0010	0.041	0.057	57	1.2	WS/H	Classification by ASTM 2487 requires Atterberg test	Loam	(Est)
2102373-004B/ MKTF-LIF-85 7-9	0.00065	0.030	0.047	72	1.3	WS/H	Classification by ASTM 2487 requires Atterberg test	Loam	(Est)
2102373-005B/ PA-LIF-07 11-13	0.0039	0.29	0.40	103	7.8	WS/H	Classification by ASTM 2487 requires Atterberg test	Sandy Loam †	

Est = Reported values for d_{10}, C_u, C_c, and soil classification are estimates, since extrapolation was required to obtain the d_{10} diameter

$$C_u = \frac{d_{60}}{d_{10}}$$

$$C_c = \frac{(d_{30})^2}{(d_{10})(d_{60})}$$

DS = Dry sieve

H = Hydrometer

WS = Wet sieve

† Greater than 10% of sample is coarse material

d_{50} = Median particle diameter

Percent Gravel, Sand, Silt and Clay*

Sample Number	% Gravel (>4.75mm)	% Sand (<4.75mm, >0.075mm)	% Silt (<0.075mm, >0.002mm)	% Clay (<0.002mm)
2102373-001B/ MKTF-LIF-74 2-3	0.9	54.9	33.2	11.0
2102373-002B/ MKTF-LIF-74 4-5	0.0	30.3	51.9	17.8
2102373-004B/ MKTF-LIF-85 7-9	0.0	23.5	55.9	20.6
2102373-005B/ PA-LIF-07 11-13	13.5	59.0	19.4	8.1

*USCS classification does not classify clay fraction based on particle size. USDA definition of clay (<0.002mm) used in this table.

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-001B/ MKTF-LIF-74 2-3
Matrix: Soil
Date/Time Sampled: 2/4/21 945
Test Date: 9-Feb-21

Initial Dry Weight of Sample (g): 216.40
Weight Passing #10 (g): 209.21
Weight Retained #10 (g): 7.19
Weight of -10 Sub-Sample (g): 49.88
Calculated Weight of Sieve Sample (g): 51.59
Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	216.40	100.00
	2"	50	0.00	0.00	216.40	100.00
	1.5"	38.1	0.00	0.00	216.40	100.00
	1"	25	0.00	0.00	216.40	100.00
	3/4"	19.0	0.00	0.00	216.40	100.00
	3/8"	9.5	0.00	0.00	216.40	100.00
	4	4.75	1.99	1.99	214.41	99.08
	10	2.00	5.20	7.19	209.21	96.68
-10			(Based on calculated sieve wt.)			
	20	0.85	1.37	3.08	48.51	94.02
	40	0.425	3.30	6.38	45.21	87.63
	60	0.250	7.29	13.67	37.92	73.50
	100	0.150	9.03	22.70	28.89	55.99
	140	0.106	3.50	26.20	25.39	49.21
	200	0.075	2.58	28.78	22.81	44.21
	dry pan		0.54	29.32	22.27	
	wet pan			22.27	0.00	

d_{10} (mm): 0.0018
d_{16} (mm): 0.0053
d_{30} (mm): 0.032
d_{50} (mm): 0.11
d_{60} (mm): 0.17
d_{84} (mm): 0.37

Median Particle Diameter --d_{50} (mm): 0.11
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 94
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 3.3
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 0.16

ASTM Soil Classification: Classification by ASTM 2487 requires Atterberg test
USDA Soil Classification: Sandy Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-001B/ MKTF-LIF-74 2-3
Matrix: Soil
Date/Time Sampled: 2/4/21 945
Test Date: 10-Feb-21
Start Time: 7:30

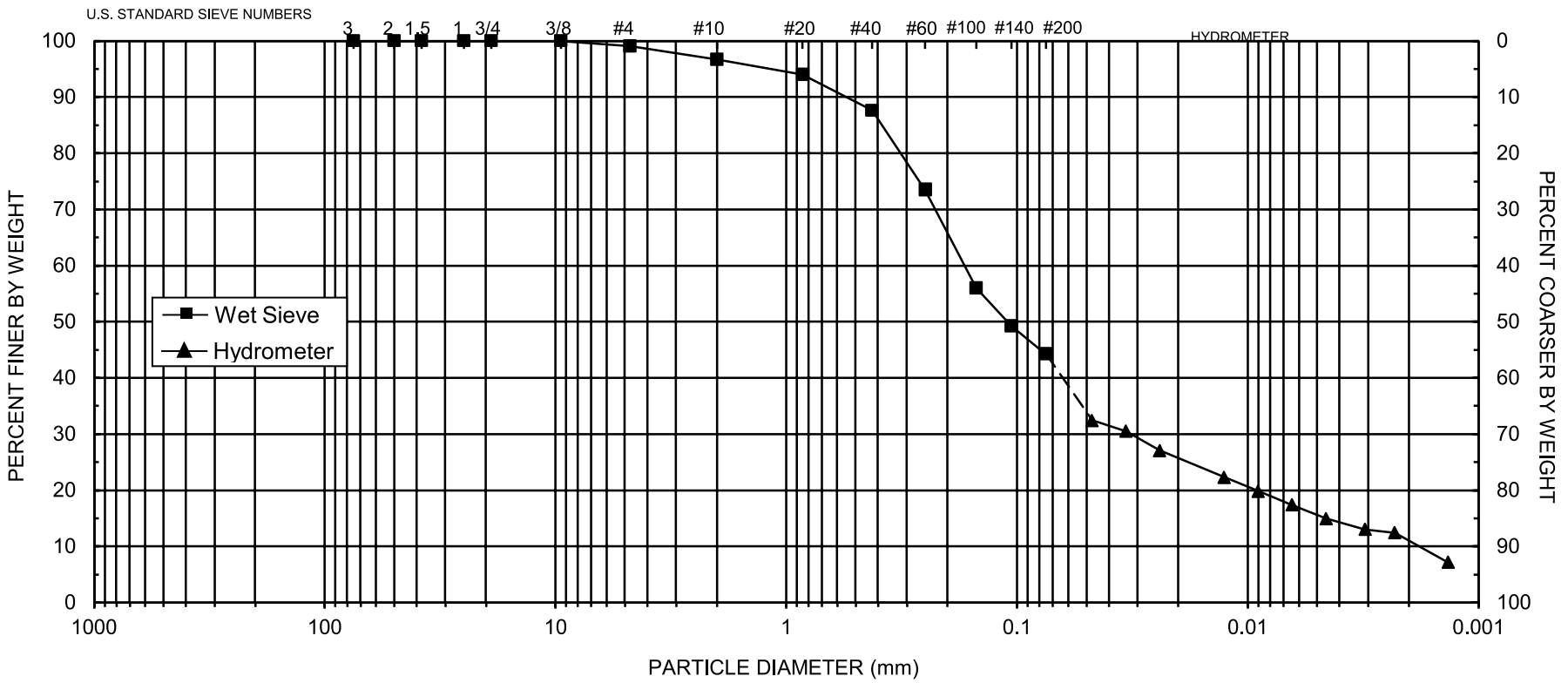
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 49.88
Total Sample Wt. (g)*:* 216.40
Wt. Passing #10 (g)*:* 209.21

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Feb-21	1	20.1	23.25	6.54	16.7	12	0.0473	34	32.4
	2	20.1	22.25	6.54	15.7	12	0.0337	31	30.5
	4	20.1	20.50	6.54	14.0	12	0.0241	28	27.1
	15	20.2	18.00	6.52	11.5	13	0.0126	23	22.2
	30	20.2	16.75	6.52	10.2	13	0.0090	21	19.8
	60	20.2	15.50	6.52	9.0	13	0.0064	18	17.4
	120	20.1	14.25	6.54	7.7	14	0.0046	15	14.9
	265	20.1	13.25	6.55	6.7	14	0.0031	13	13.0
	480	19.9	13.00	6.60	6.4	14	0.0023	13	12.4
11-Feb-21	1440	20.1	10.25	6.55	3.7	14	0.0014	7	7.2

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



d_{10} = **0.0018**	d_{30} = **0.032**	d_{50} = **0.11**	d_{60} = **0.17**	C_u = **94**	C_c = **3.3**

SAMPLE NUMBER	DATE/TIME SAMPLED	ASTM CLASSIFICATION	USDA CLASSIFICATION
2102373-001B/ MKTF-LIF-74 2-3	**2/4/21 945**	**Classification by ASTM 2487 requires Atterberg test**	**Sandy Loam**

Daniel B. Stephens & Associates, Inc.

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-002B/ MKTF-LIF-74 4-5
Matrix: Soil
Date/Time Sampled: 2/4/21 947
Test Date: 9-Feb-21

Initial Dry Weight of Sample (g): 158.07
Weight Passing #10 (g): 158.07
Weight Retained #10 (g): 0.00
Weight of -10 Sub-Sample (g): 48.87
Calculated Weight of Sieve Sample (g): 48.87
Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	158.07	100.00
	2"	50	0.00	0.00	158.07	100.00
	1.5"	38.1	0.00	0.00	158.07	100.00
	1"	25	0.00	0.00	158.07	100.00
	3/4"	19.0	0.00	0.00	158.07	100.00
	3/8"	9.5	0.00	0.00	158.07	100.00
	4	4.75	0.00	0.00	158.07	100.00
	10	2.00	0.00	0.00	158.07	100.00
-10			(Based on calculated sieve wt.)			
	20	0.85	0.28	0.28	48.59	99.43
	40	0.425	0.68	0.96	47.91	98.04
	60	0.250	1.72	2.68	46.19	94.52
	100	0.150	3.32	6.00	42.87	87.72
	140	0.106	3.91	9.91	38.96	79.72
	200	0.075	4.90	14.81	34.06	69.70
	dry pan		1.50	16.31	32.56	
	wet pan			32.56	0.00	

d_{10} (mm): 0.0010
d_{16} (mm): 0.0017
d_{30} (mm): 0.0081
d_{50} (mm): 0.041
d_{60} (mm): 0.057
d_{84} (mm): 0.13

Median Particle Diameter --d_{50} (mm): 0.041
Uniformity Coefficient, Cu --$[d_{60}/d_{10}]$ (mm): 57
Coefficient of Curvature, Cc --$[(d_{30})^2/(d_{10}*d_{60})]$ (mm): 1.2
Mean Particle Diameter --$[(d_{16}+d_{50}+d_{84})/3]$ (mm): 0.058

Note: Reported values for d_{10}, C_u, C_c, and soil classification are estimates, since extrapolation was required to obtain the d_{10} diameter

ASTM Soil Classification: Classification by ASTM 2487 requires Atterberg test
USDA Soil Classification: Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-002B/ MKTF-LIF-74 4-5
Matrix: Soil
Date/Time Sampled: 2/4/21 947
Test Date: 10-Feb-21
Start Time: 7:36

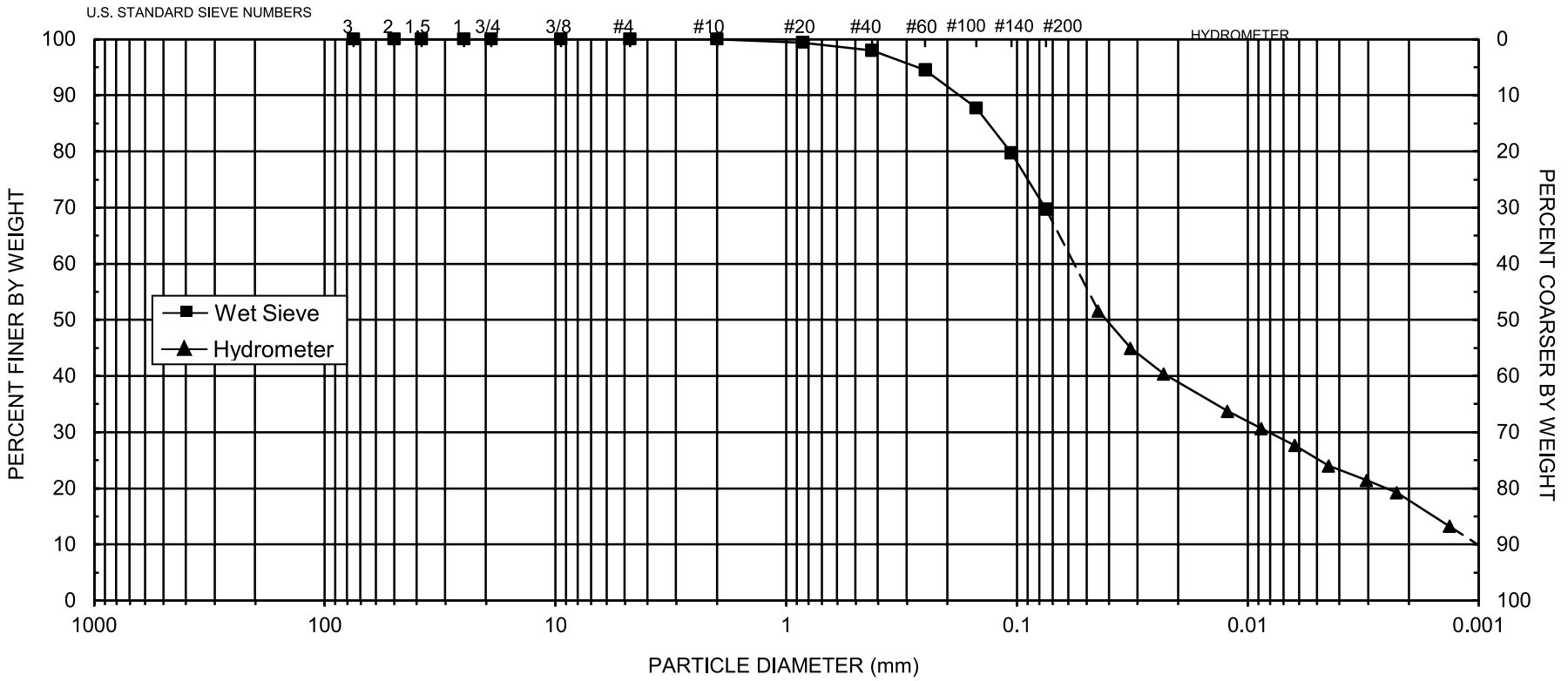
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 48.87
Total Sample Wt. (g)*:* 158.07
Wt. Passing #10 (g)*:* 158.07

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Feb-21	1	20.1	31.75	6.54	25.2	11	0.0444	52	51.6
	2	20.1	28.50	6.54	22.0	11	0.0322	45	44.9
	4	20.1	26.25	6.54	19.7	12	0.0232	40	40.3
	15	20.2	23.00	6.52	16.5	12	0.0122	34	33.7
	30	20.2	21.50	6.52	15.0	12	0.0087	31	30.6
	60	20.2	20.00	6.52	13.5	13	0.0062	28	27.6
	120	20.1	18.25	6.54	11.7	13	0.0045	24	24.0
	261	20.1	17.00	6.55	10.4	13	0.0031	21	21.4
	480	19.9	16.00	6.60	9.4	13	0.0023	19	19.2
11-Feb-21	1435	20.1	13.00	6.55	6.4	14	0.0013	13	13.2

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



d_{10} = **0.0010**	d_{30} = **0.0081**	d_{50} = **0.041**	d_{60} = **0.057**	C_u = **57**	C_c = **1.2**

SAMPLE NUMBER	DATE/TIME SAMPLED	ASTM CLASSIFICATION	USDA CLASSIFICATION
2102373-002B/ MKTF-LIF-74 4-5	**2/4/21 947**	**Classification by ASTM 2487 requires Atterberg test**	**Loam**

Note: Reported values for d_{10}, C_u, C_c, and ASTM classification are estimates, since extrapolation was required to obtain the d_{10} diameter

Daniel B. Stephens & Associates, Inc.

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-004B/ MKTF-LIF-85 7-9
Matrix: Soil
Date/Time Sampled: 2/5/21 1031
Test Date: 9-Feb-21

Initial Dry Weight of Sample (g): 268.61
Weight Passing #10 (g): 268.61
Weight Retained #10 (g): 0.00
Weight of -10 Sub-Sample (g): 49.12
Calculated Weight of Sieve Sample (g): 49.12
Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	268.61	100.00
	2"	50	0.00	0.00	268.61	100.00
	1.5"	38.1	0.00	0.00	268.61	100.00
	1"	25	0.00	0.00	268.61	100.00
	3/4"	19.0	0.00	0.00	268.61	100.00
	3/8"	9.5	0.00	0.00	268.61	100.00
	4	4.75	0.00	0.00	268.61	100.00
	10	2.00	0.00	0.00	268.61	100.00
-10			(Based on calculated sieve wt.)			
	20	0.85	0.10	0.10	49.02	99.80
	40	0.425	0.45	0.55	48.57	98.88
	60	0.250	1.19	1.74	47.38	96.46
	100	0.150	2.79	4.53	44.59	90.78
	140	0.106	2.98	7.51	41.61	84.71
	200	0.075	4.02	11.53	37.59	76.53
	dry pan		1.65	13.18	35.94	
	wet pan			35.94	0.00	

d_{10} (mm): 0.00065
d_{16} (mm): 0.0012
d_{30} (mm): 0.0062
d_{50} (mm): 0.030
d_{60} (mm): 0.047
d_{84} (mm): 0.10

Median Particle Diameter --d_{50} (mm): 0.030
Uniformity Coefficient, Cu --$[d_{60}/d_{10}]$ (mm): 72
Coefficient of Curvature, Cc --$[(d_{30})^2/(d_{10}*d_{60})]$ (mm): 1.3
Mean Particle Diameter --$[(d_{16}+d_{50}+d_{84})/3]$ (mm): 0.044

Note: Reported values for d_{10}, C_u, C_c, and soil classification are estimates, since extrapolation was required to obtain the d_{10} diameter

ASTM Soil Classification: Classification by ASTM 2487 requires Atterberg test
USDA Soil Classification: Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-004B/ MKTF-LIF-85 7-9
Matrix: Soil
Date/Time Sampled: 2/5/21 1031
Test Date: 10-Feb-21
Start Time: 7:42

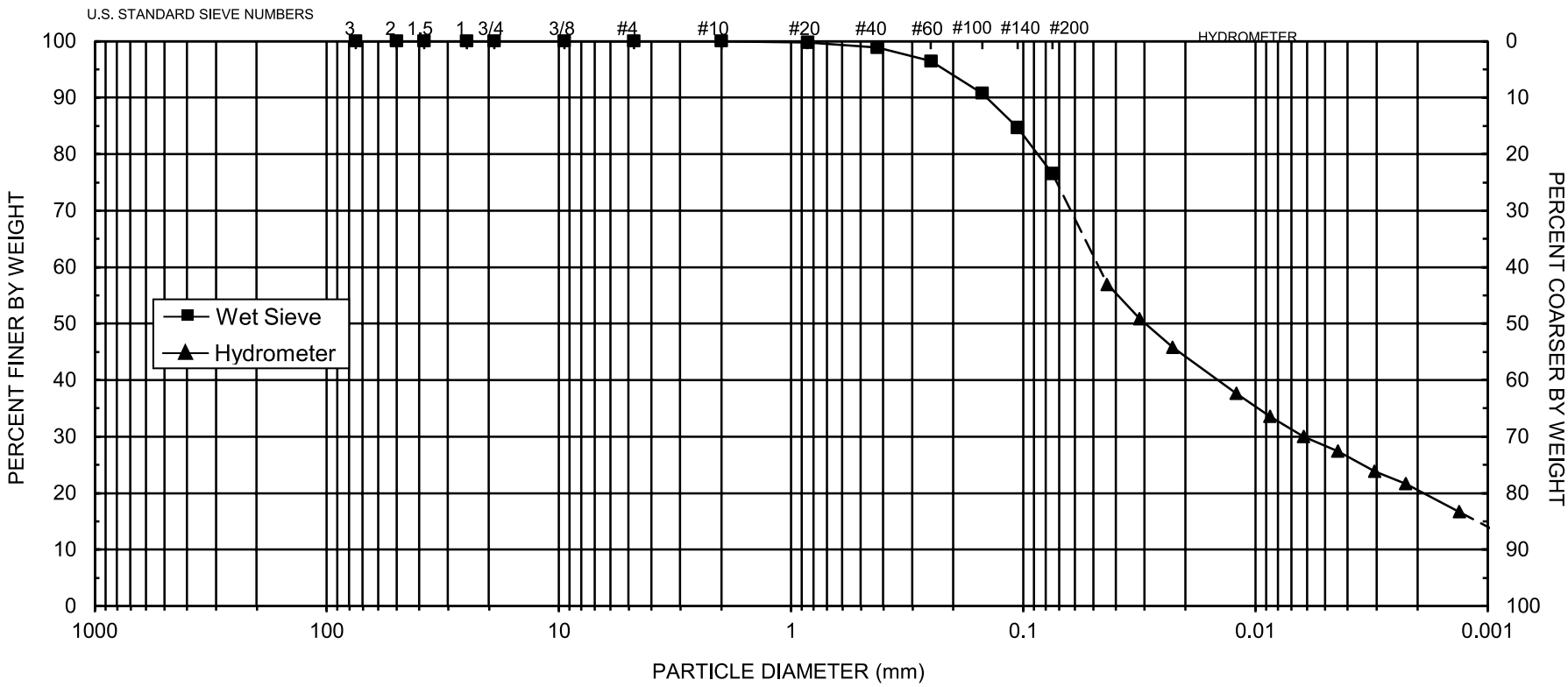
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 49.12
Total Sample Wt. (g)*:* 268.61
Wt. Passing #10 (g)*:* 268.61

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Feb-21	1	20.2	34.50	6.52	28.0	10	0.0435	57	57.0
	2	20.2	31.50	6.52	25.0	11	0.0315	51	50.9
	4	20.2	29.00	6.52	22.5	11	0.0227	46	45.8
	15	20.2	25.00	6.52	18.5	12	0.0121	38	37.6
	30	20.2	23.00	6.52	16.5	12	0.0086	34	33.5
	60	20.2	21.25	6.52	14.7	12	0.0062	30	30.0
	120	20.1	20.00	6.54	13.5	13	0.0044	27	27.4
	255	20.1	18.25	6.55	11.7	13	0.0031	24	23.8
	480	19.9	17.25	6.60	10.6	13	0.0022	22	21.7
11-Feb-21	1430	20.1	14.75	6.55	8.2	13	0.0013	17	16.7

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



d_{10} = **0.00065**	d_{30} = **0.0062**	d_{50} = **0.030**	d_{60} = **0.047**	C_u = **72**	C_c = **1.3**

SAMPLE NUMBER	DATE/TIME SAMPLED	ASTM CLASSIFICATION	USDA CLASSIFICATION
2102373-004B/ MKTF-LIF-85 7-9	**2/5/21 1031**	**Classification by ASTM 2487 requires Atterberg test**	**Loam**

Note: Reported values for d_{10}, C_u, C_c, and ASTM classification are estimates, since extrapolation was required to obtain the d_{10} diameter

Daniel B. Stephens & Associates, Inc.

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-005B/ PA-LIF-07 11-13
Matrix: Soil
Date/Time Sampled: 2/5/21 131
Test Date: 9-Feb-21

Initial Dry Weight of Sample (g): 333.99
Weight Passing #10 (g): 256.64
Weight Retained #10 (g): 77.35
Weight of -10 Sub-Sample (g): 50.74
Calculated Weight of Sieve Sample (g): 66.03
Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	333.99	100.00
	2"	50	0.00	0.00	333.99	100.00
	1.5"	38.1	0.00	0.00	333.99	100.00
	1"	25	0.00	0.00	333.99	100.00
	3/4"	19.0	0.00	0.00	333.99	100.00
	3/8"	9.5	17.38	17.38	316.61	94.80
	4	4.75	27.77	45.15	288.84	86.48
	10	2.00	32.20	77.35	256.64	76.84
-10			(Based on calculated sieve wt.)			
	20	0.85	3.56	18.85	47.18	71.45
	40	0.425	6.41	25.26	40.77	61.74
	60	0.250	10.96	36.22	29.81	45.14
	100	0.150	7.63	43.85	22.18	33.59
	140	0.106	2.52	46.37	19.66	29.77
	200	0.075	1.53	47.90	18.13	27.46
	dry pan		0.35	48.25	17.78	
	wet pan			17.78	0.00	

d_{10} (mm): 0.0039
d_{16} (mm): 0.017
d_{30} (mm): 0.11
d_{50} (mm): 0.29
d_{60} (mm): 0.40
d_{84} (mm): 3.8

Median Particle Diameter --d_{50} (mm): 0.29
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 103
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 7.8
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 1.4

ASTM Soil Classification: Classification by ASTM 2487 requires Atterberg test
USDA Soil Classification: Sandy Loam †

† Greater than 10% of sample is coarse material

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Hydrometer Data

Job Name: Hall Environmental Analysis Laboratory
Job Number: DB21.1064.00
Sample Number: 2102373-005B/ PA-LIF-07 11-13
Matrix: Soil
Date/Time Sampled: 2/5/21 131
Test Date: 10-Feb-21
Start Time: 7:48

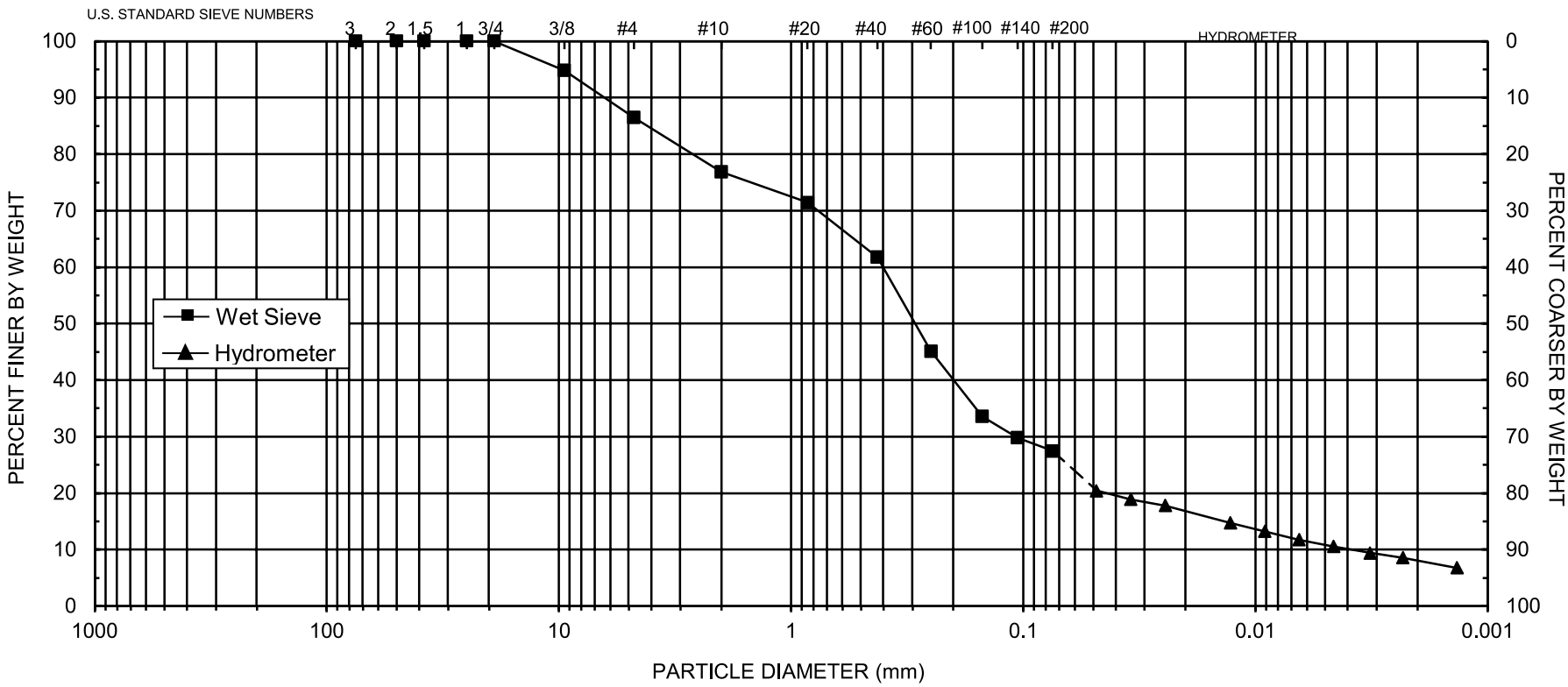
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.65
Initial Wt. (g)*:* 50.74
Total Sample Wt. (g)*:* 333.99
Wt. Passing #10 (g)*:* 256.64

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
10-Feb-21	1	20.2	20.00	6.52	13.5	13	0.0483	27	20.4
	2	20.2	19.00	6.52	12.5	13	0.0344	25	18.9
	4	20.2	18.25	6.52	11.7	13	0.0244	23	17.8
	15	20.2	16.25	6.52	9.7	13	0.0128	19	14.7
	30	20.2	15.25	6.52	8.7	13	0.0091	17	13.2
	60	20.2	14.25	6.52	7.7	14	0.0065	15	11.7
	120	20.1	13.50	6.54	7.0	14	0.0046	14	10.5
	250	20.1	12.75	6.55	6.2	14	0.0032	12	9.4
	480	19.9	12.25	6.60	5.6	14	0.0023	11	8.6
11-Feb-21	1426	20.1	11.00	6.55	4.4	14	0.0014	9	6.7

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



d_{10} = **0.0039**	d_{30} = **0.11**	d_{50} = **0.29**	d_{60} = **0.40**	C_u = **103**	C_c = **7.8**

SAMPLE NUMBER	DATE/TIME SAMPLED	ASTM CLASSIFICATION	USDA CLASSIFICATION
2102373-005B/ PA-LIF-07 11-13	**2/5/21 131**	**Classification by ASTM 2487 requires Atterberg test**	**Sandy Loam †**

† Greater than 10% of sample is coarse material

Daniel B. Stephens & Associates, Inc.

Laboratory Tests and Methods

Tests and Methods

Particle Size Analysis:	ASTM D7928, ASTM D6913
USCS (ASTM) Classification:	ASTM D6913, ASTM D4318, ASTM D2487
USDA Classification:	ASTM D7928, ASTM D6913, USDA Soil Textural Triangle

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2102373**

17-Feb-21

Client: Marathon

Project: MPC MKTF LIF Investigation

Sample ID: **MB-58022**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **58022**	RunNo: **75192**
Prep Date: **2/10/2021**	Analysis Date: **2/10/2021**	SeqNo: **2654980** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		95.9	70	130			

Sample ID: **LCS-58022**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **58022**	RunNo: **75192**
Prep Date: **2/10/2021**	Analysis Date: **2/10/2021**	SeqNo: **2654982** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.6	70	130			

Sample ID: **MB-58001**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **58001**	RunNo: **75192**
Prep Date: **2/9/2021**	Analysis Date: **2/10/2021**	SeqNo: **2655610** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		90.7	70	130			

Sample ID: **LCS-58001**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **58001**	RunNo: **75192**
Prep Date: **2/9/2021**	Analysis Date: **2/10/2021**	SeqNo: **2655612** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	68.9	141			
Surr: DNOP	4.5		5.000		89.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2102373**

17-Feb-21

Client: Marathon

Project: MPC MKTF LIF Investigation

Sample ID: **lcs-57986**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **57986**	RunNo: **75251**
Prep Date: **2/8/2021**	Analysis Date: **2/11/2021**	SeqNo: **2657708** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.5	70	130			
Surr: BFB	490		500.0		98.2	70	130			

Sample ID: **mb-57986**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **57986**	RunNo: **75251**
Prep Date: **2/8/2021**	Analysis Date: **2/11/2021**	SeqNo: **2657709** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	480		500.0		96.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2102373** RcptNo: **1**

Received By: **Sean Livingston** **2/6/2021 10:30:00 AM** Sean Livingston

Completed By: **Cheyenne Cason** **2/8/2021 10:02:42 AM**

Reviewed By: DAD 2/8/21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

10

# of preserved bottles checked for pH: 2/8/21 (<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good				

Chain-of-Custody Record

Client: Marathon Petroleum Co.

Mailing Address: 92 Giant Crossing Rd Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: phildebrandt@Trihydro.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☒ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: MPC MKTF LIF Investigation

Project #: 697-085-001

Project Manager: Paul Hildebrandt

Sampler: Paul Hildebrandt

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 5.3 +0 = 5.3 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2102373
2/4/21	0845	Soil	MKTF-LIF-74 2-3	2	MeOH	001
2/4/21	0947		MKTF-LIF-74 4-5	2		002
2/4/21	0949		MKTF-LIF-74 5-6	1		003
2/5/21	1031		MKTF-LIF-85 7-9	2		004
2/5/21	1331		PA-LIF-07 11-13	2		005
2/5/21	1332		PA-LIF-07 13-14	1		006

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Bacteria Analysis
	X									X
	X									X
	X									
	X									X
	X									X
	X									

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2/5/21	1455		SGL	COC	2/6/21	10:30
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 22551

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 22551
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
jburdine	Accepted for Record Retention Purposes-Only	11/21/2022