# Hydrogeologic Investigation at the Sumica Site for the Central Florida Water Initiative

Polk County, Florida

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Justin Zumbro, P.G., Aurora Bouchier, P.G., Stacey Coonts, G.I.T., Keith R. Smith, P.G., Emily Richardson, P.G., and Harshit (Sunny) Saini, G.I.T. Hydrogeology Unit, Resource Evaluation Section, Water Supply Bureau



#### **EXECUTIVE SUMMARY**

The South Florida Water Management District (SFWMD or District) has been working cooperatively with the Southwest Florida Water Management District (SWFWMD), St. Johns River Water Management District (SJRWMD), Florida Department of Environmental Protection, Florida Department of Agriculture and Consumer Services, regional public water supply utilities, and other stakeholders over the last several years to evaluate the status of traditional water supplies and plan for the future of water supply in Central Florida. As part of this Central Florida Water Initiative (CFWI; https://www.cfwiwater.com/), the Data Monitoring and Investigations Team (DMIT) identified several areas lacking adequate monitoring and information on the hydraulic properties of the subsurface throughout the CFWI Planning Area, particularly in the deeper portions of the Floridan aquifer system (FAS). Consequently, the DMIT developed a work plan for the construction and testing of new data collection sites to meet future data needs within the CFWI Planning Area. This report documents one component of that work plan: the District's exploratory drilling and construction of FAS monitor wells POF-31 and POF-32 at the Sumica site, located southwest of State Road 60 approximately 12 miles west of the Kissimmee River in Polk County, Florida. Land surface elevation at the Sumica site is approximately 67.5 feet (ft) using the North American Vertical Datum of 1988 (NAVD88) or 68.68 ft using the National Geodetic Vertical Datum of 1929 (NGVD29). The Sumica site was selected for a number of reasons. First, it filled a data gap in the northwest part of the SFWMD in Polk County where FAS data are sparse, and questions about the productivity and water quality of the Lower Floridan aguifer (LFA) have persisted. Second, the Sumica site is located at the site of two existing surficial aquifer system (SAS) wells, which meant that a more complete picture of the interactions between the SAS, Upper Floridan aquifer (UFA), Avon Park permeable zone (APPZ), and LFA could be developed with reduced cost. Third, the site was publicly accessible, so no time-consuming access agreements or land acquisitions were required.

Exploratory drilling at the Sumica site reached a maximum depth of 2,000 ft below land surface (bls). The hydrogeologic investigation of this site (also known as the Walk-in-Water site) included collection of split-spoon samples, drill cuttings, wireline coring, hydraulic testing, geophysical logging, optical borehole imaging (OBI), and borehole water quality sampling. Data from these activities were used to identify hydrostratigraphic and lithologic unit boundaries and evaluate variations in water quality and aquifer parameters with depth (**Table ES-1**).

Table ES-1. Hydrostratigraphic units at the Sumica site.

Hydrostratigraphic Unit		Unit Boundaries	
		Top (ft bls)	Bottom (ft bls)
Surficial Aquifer System		0	87
Intermediate Confining Unit		87	250
	UFA-upper	250	410
Upper Floridan Aquifer	OCAPlpz	410	800
	APPZ	800	1,113
Middle Confining Unit	MCU_I	1,113	1,410
Lower Floridan Aquifer	LFA-upper	1,410	1,833
Lower Floridan Aquiter	GLAUClpu	1,833	Not Encountered

APPZ = Avon Park permeable zone; ft bls = feet below land surface; GLAUClpu = low-permeability glauconitic marker unit; LFA-upper = upper permeable zone of the Lower Floridan aquifer; MCU\_I = middle confining unit I; OCAPlpz = Ocala—Avon Park low-permeability zone; UFA-upper = upper permeable zone of the Upper Floridan aquifer.

Table ES-2. Lithologic units at the Sumica site.

T (41, -1, -1, -1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	Unit Boundaries		
Lithologic Unit	Top (ft bls)	Bottom (ft bls)	
Undifferentiated Holocene, Pleistocene, and Pliocene Sediments	0	87	
Hawthorn Group-Peace River Formation	87	155	
Hawthorn Group-Arcadia Formation	155	250	
Ocala Limestone	250	330	
Avon Park Formation	330	1,871	
Oldsmar Formation	1,871	Not Encountered	

ft bls = feet below land surface.

Table ES-3. Flow zones within the Avon Park permeable zone and the upper permeable zone of the Lower Floridan aquifer at the Sumica site.

Flow Zone	Top (ft bls)	Bottom (ft bls)
APhpz-1	800	857
APhpz-2	958	1,023
LF1	1,410	1,463
LF2	1,603	1,669
LF3	1,722	1,833

APhpz-1 and APhpz-2 = Avon Park high-permeability flow zones; ft bls = feet below land surface; LF1, LF2, and LF3 = flow zones within the upper permeable zone of the LFA-upper.

Table ES-4. Well construction summary at the Sumica site.

Corehole Name	Well ID	Total Drilled Depth (ft bls)	Top of Open Interval (ft bls)	Bottom of Open Interval (ft bls)	Hydrostratigraphic Zone
POF-31	POF-31U	1,500	275	594	UFA and OCAPlpz
POF-31	POF-31L	1,500	800	900	APPZ
POF-32	POF-32	2,000	1,407	1,840	LFA-upper and GLAUClpu

APPZ = Avon Park permeable zone; ft bls = feet below land surface; GLAUClpu = low-permeability glauconitic marker unit; LFA-upper = upper permeable zone of the Lower Floridan aquifer; OCAPlpz = Ocala–Avon Park low-permeability zone; UFA = Upper Floridan aquifer.

The results of this investigation include the following:

- Hydrostratigraphic unit boundaries were established for the SAS, intermediate confining unit (ICU), the upper permeable zone of the Upper Floridan aquifer (UFA-upper), Ocala—Avon Park low-permeability zone (OCAPlpz), APPZ, middle confining unit I (MCU\_I), upper permeable zone of the Lower Floridan aquifer (LFA-upper), and the top of the low-permeability glauconitic marker unit (GLAUClpu) as shown in **Table ES-1**. These boundaries are based on review of split-spoon samples and cuttings from the SAS and ICU, continuous wireline coring and packer testing through the FAS, geophysical and OBI logs, and groundwater chemistry.
- The lithologic units encountered include the undifferentiated Holocene, Pleistocene, and Pliocene sediments, the Peace River and Arcadia formations of the Hawthorn Group, the Ocala Limestone, the Avon Park Formation, and the Oldsmar Formation. The Suwannee Limestone was not encountered. The depths at which the lithologic units were encountered are shown in **Table ES-2**.

- Based on the packer testing results, two significant production zones referred to as Avon Park high-permeability zones 1 and 2 (Aphpz-1 and Aphpz-2) were identified within the APPZ between 800 and 857 ft bls and between 958 and 1,023 ft bls, respectively (**Table ES-3**). These two intervals have relatively higher packer test hydraulic conductivity than other portions of the APPZ.
- MCU\_I was the only middle confining unit present at the site and was characterized by relatively lower packer test transmissivities as compared to the overlying APPZ and underlying LFA-upper.
- Within the LFA-upper, three significant production zones were identified: 1,410 to 1,463 ft bls, 1,603 to 1,669 ft bls, and 1,722 to 1,833 ft bls (**Table ES-3**). These are referred to as LF1, LF2, and LF3, respectively.
- The top of the GLAUClpu was encountered at a depth of 1,833 ft bls in the POF-32 corehole (**Table ES-1**) and was characterized by relatively low hydraulic conductivities. The bottom of this unit was not encountered.
- The exploratory corehole for POF-31 was completed to 1,500 ft bls. This corehole was converted into a dual-zone monitoring well. The UFA-OCAPlpz monitoring well was named POF-31U and was completed with an annular monitoring zone from 275 to 594 ft bls. The APPZ monitoring well, named POF-31L, was completed with an open-hole monitoring interval from 800 to 900 ft bls (**Table ES-4**).
- The exploratory corehole for POF-32 was completed to 2,000 ft bls. This corehole was converted into an LFA-upper/GLAUClpu monitoring well, named POF-32, completed with an open-hole interval from 1,407 to 1,840 ft bls. The well's open interval extends approximately 7 ft into the GLAUClpu (**Table ES-4**).

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# **ACRONYMS AND ABBREVIATIONS**

°C degrees Celsius

μS/cm microsiemens per centimeter

APhpz Avon Park high-permeability zone

APPZ Avon Park permeable zone

bls below land surface

CFWI Central Florida Water Initiative

CTD conductivity, temperature, and depth

District South Florida Water Management District

DMIT Data Monitoring and Investigations Team

ECFTX East Central Florida Transient Expanded (model)

FAS Floridan aquifer system

ft foot or feet

GLAUClpu low-permeability glauconitic marker unit

gpm gallons per minute

ICU intermediate confining unit LFA Lower Floridan aquifer

LFA-upper upper permeable zone of the Lower Floridan aquifer

MCU middle confining unit mg/L milligrams per liter

NGVD29 National Geodetic Vertical Datum of 1929

OBI optical borehole imaging

OCAPlpz Ocala—Avon Park low-permeability zone

psi pounds per square inch

PVC polyvinyl chloride

SAS surficial aquifer system

SCADA supervisory control and data acquisition
SFWMD South Florida Water Management District
SJRWMD St Johns River Water Management District
SMCL secondary maximum contaminant levels

SWFWMD Southwest Florida Water Management District

SPT standard penetration test
TDS total dissolved solids
UFA Upper Floridan aquifer

UFA-upper upper permeable zone of the Upper Floridan aquifer

USEPA United States Environmental Protection Agency

USGS United States Geological Survey

VSMOW Vienna standard mean ocean water

XRD X-ray diffraction

## INTRODUCTION

The South Florida Water Management District (SFWMD or District) has been working cooperatively with the Southwest Florida Water Management District (SWFWMD), St. Johns River Water Management District (SJRWMD), Florida Department of Environmental Protection, Florida Department of Agriculture and Consumer Services, regional public water supply utilities, and other stakeholders evaluating the status of traditional water supplies and planning for the future of water supply in Central Florida. As part of this Central Florida Water Initiative (CFWI; <a href="https://www.cfwiwater.com/">https://www.cfwiwater.com/</a>), the Data Monitoring and Investigations Team (DMIT) identified several areas lacking adequate groundwater monitoring. In addition, further characterization of the hydraulic properties of the deeper portions of the Floridan aquifer system (FAS) are needed. Consequently, the DMIT developed a work plan for the construction and testing of new wells to meet future hydrogeologic data collection needs within the CFWI Planning Area. The work plan, DMIT Hydrogeologic Annual Work Plan (FY2018-FY2025), is available on the CFWI website at <a href="https://www.cfwiwater.com/data.html">https://www.cfwiwater.com/data.html</a>.

This report documents one component of that work plan: the District's exploratory drilling, testing, and well construction activities completed at the Sumica site, also known as the Walk-in-Water site. The Sumica site is in Polk County, Florida within a nature preserve that was jointly purchased by Polk County and the District. The site is located approximately 12 miles west of the Kissimmee River and southwest of State Road 60 (Figure 1). Land surface elevation at the site is approximately 67.5 feet (ft) using the North American Vertical Datum of 1988 (NAVD88) or 68.68 ft using the National Geodetic Vertical Datum of 1929 (NGVD29). The District survey report for the site is provided in Appendix A. The Sumica site was selected for numerous reasons. First, it filled a data gap in the northwest part of the SFWMD in Polk County where FAS data are sparse, and questions about the productivity and water quality of the Lower Floridan aquifer (LFA) have persisted. Second, the Sumica site is located at the site of two existing surficial aquifer system (SAS) wells, which meant that a more complete picture of the interactions between the SAS, Upper Floridan aquifer (UFA), Avon Park permeable zone (APPZ), and LFA could be developed with reduced cost. Third, the site was publicly accessible, so no time-consuming access agreements or land acquisitions were required.

Prior to the start of this project, two shallow monitoring wells (POS-20 and POS-21) were installed at the Sumica site as part of the CFWI initiative for evaluating impacts to wetlands. POS-20 was installed in the vicinity of the FAS wells constructed as part of this project, and POS-21 was installed approximately 4,150 ft south of POS-20 (**Figure 1**). POS-20 and POS-21 were constructed of 4-inch-diameter polyvinyl chloride (PVC) well casing and screens and were screened from 25 to 30 ft below land surface (bls). The risers are stainless steel to protect the wells during controlled and uncontrolled burns. POS-20 and POS-21 are equipped with pressure transducers and telemetry connected to the District's supervisory control and data acquisition (SCADA) system and have been continuously collecting groundwater elevation data since October 2019.

# **Project Objectives**

The project objectives were divided into two categories: hydrogeologic data collection and groundwater monitoring as described below.

The hydrogeologic data collection objectives were to

- 1. evaluate the lithology, productivity, and groundwater quality of the FAS to a depth of 2,000 ft bls; and
- 2. identify hydrogeologic unit boundaries through the FAS to the top of the low-permeability glauconitic marker unit (GLAUClpu).

The groundwater monitoring objectives were to

- 1. construct a new dual-zone upper permeable zone of the Upper Floridan aquifer (UFA-upper)/Avon Park permeable zone (APPZ) monitor well;
- 2. construct a new upper permeable zone of the Lower Floridan aquifer (LFA-upper) monitor well;
- 3. connect these new FAS monitoring wells to the District SCADA system for collection of continuous groundwater elevation measurements; and
- 4. analyze groundwater samples.



Figure 1. Sumica site location.

#### EXPLORATORY CORING AND WELL CONSTRUCTION

The District contracted with Huss Drilling, Inc. for exploratory coring, packer testing, and monitor well construction services at the Sumica site in February 2020 (CN#4600003906-WO04). Huss mobilized a Failing 1500 Hole Master drill rig to the site in March 2020 to install a makeup water well named SUMICAN-PW (**Figure 1**) that was continuously sampled between depths of 35 to 87 ft bls using a 24-inch-long standard penetration test (SPT) sampler. The boring for POS-21 was previously sampled using SPT methods from 5 to 31 ft bls. The sieve analyses data from these two borings were used to characterize the SAS sediments at the site.

In March 2020, Huss mobilized a Versa Drill 2000 drill rig to the site to start drilling the exploratory corehole for FAS well POF-31. A nominal 22-inch-diameter borehole was drilled using mud-rotary drilling methods from land surface to a depth of 81 ft bls, at which point a 16-inch-diameter steel surface casing was installed and cemented into place. A nominal 6-inch-diameter pilot hole was then advanced using mud-rotary drilling methods from the base of the surface casing (at 81 ft bls) to a depth of 285 ft bls. At that point, the borehole was geophysically logged.

These geophysical logs were used in conjunction with the SPT samples and drill cuttings to identify the bottom of the intermediate confining unit (ICU) and to determine a suitable casing seat for a 10-inch-diameter conductor casing intended to stabilize the unconsolidated ICU sediments and prevent those sediments from sloughing into the borehole during wireline coring in the FAS. To achieve this, the borehole was reamed to a nominal diameter of 15 inches to a depth of 275 ft bls. Next, a 10-inch-diameter PVC conductor casing was cemented in place to a depth of 275 ft bls. After installation of the conductor casing, the borehole was advanced to a depth of 290 ft bls to clear the cement plug at the bottom of the conductor casing. Next, temporary 5-inch-diameter and 4-inch-diameter steel casings were installed to a depth of 290 ft bls. On April 4, 2020, work was suspended due to the coronavirus pandemic. The drill rig was demobilized from the site, and the site was secured.

Work resumed on June 1, 2020, with the mobilization of a Failing 1500 rig to the site due to the Versa Drill 2000 still being serviced and repaired. HQ wireline coring started at a depth of 290 ft bls. The HQ wireline coring produced 2.5-inch-diameter cores and an approximately 4-inch-diameter corehole. Drilling mud was not used during wireline coring. Packer tests were conducted at 30-foot depth intervals to obtain groundwater samples for laboratory analyses and for calculation of aquifer parameters. Before each packer test was started, the corehole was airlifted to remove sediment and drilling fluids from the corehole.

Starting at approximately 590 ft bls, unconsolidated material began sloughing into the corehole from shallower depths. This slowed drilling and packer testing operations and required additional airlifting to remove the accumulated sediment. On July 2, 2020, at a depth of 964 ft bls, wireline coring was suspended until the Versa Drill 2000 could be remobilized to the site so that additional temporary casing could be installed in the corehole to control the sediment sloughing into the corehole from above. However, flooding at the site prevented the Versa Drill from being mobilized. The District then authorized Huss to place fill to elevate the work area above the standing water so that work could continue. Ten truckloads of fill and road base material were delivered and spread across the site. The Versa Drill was repositioned on top of the new fill, and 50 ft of temporary 5-inch-diameter steel casing was added to the corehole to extend the length of installed casing to a depth of 340 ft bls. The corehole was reamed to approximately 5 inches in diameter to a depth of 960 ft bls, and 4-inch-diameter temporary casing was installed to 960 ft bls. On July 16, 2020, the temporary 5-inch steel casing fell deeper downhole to an unknown depth but would not have been able to fall deeper than 960 ft bls. The temporary 5-inch steel casing was unable to be removed and was left in place until all casings were removed and wireline coring operations had reached a depth of 1,500 ft bls. Wireline coring and packer testing resumed on July 20, 2020. Artesian conditions were observed in the annular space between the temporary 5-inch-diameter and 4-inch-diameter steel casings.

When drilling reached the LFA-upper on August 12, 2020, there was a 9.2 ft drop in the static water level as measured in the corehole. Coring and testing continued to a depth of 1,500 ft bls on August 14, 2020. At that point it was decided to stop wireline coring due to concerns that continued downward flow of water would contaminate the LFA-upper and compromise its use as an LFA monitor well. Work shifted to converting this well into a dual-zone monitor well with open intervals completed in the UFA-upper/Ocala—Avon Park low-permeability zone (OCAPlpz) and the APPZ. A total of 40 packer tests were completed in the POF-31 corehole.

Well construction activities at well POF-31 began with the placement of gravel from 1,500 to 1,407 ft bls, topped with bentonite pellets in order to backfill the corehole to the top of the UFA-upper. This bentonite seal was intended to prevent downward flow of water into the LFA-upper. Then, after the core casing was removed, a tremie pipe was installed to the bottom of the corehole and cement grout was placed from 1,400 to 1,128 ft bls to provide a seal through the middle confining unit (MCU).

The tremie pipe, core casing, and temporary casings were then removed, and the corehole was reamed to approximately 10-inches in diameter to a depth of 900 ft bls. Cuttings produced during reaming were allowed to settle within the corehole, filling the corehole from 1,128 to 900 ft bls. At that point, the drill rod was removed, and the borehole was prepared for geophysical logging. Two attempts were made to complete the geophysical logging on August 31, 2020. However, an obstruction was encountered at 380 ft bls. After that obstruction was cleared, another obstruction was encountered at 428 ft bls. At that point, the geophysical logger demobilized from the site. Geophysical logging was successfully completed on September 12, 2020 after the corehole had been cleaned out.

Following the completion of geophysical logging, 4-inch-diameter PVC Certa-Lok casing was installed to a depth of 816 ft bls and grouted in place using cement baskets. Pea gravel was placed from 816 to 800 ft bls using free-fall placement. Next, cement-bentonite grout was placed on top of the pea gravel in the annular zone from 800 to 594 ft bls using a tremie pipe. This resulted in the final APPZ open-hole monitoring zone extending from 800 to 900 ft bls, at the top of the APPZ within the uppermost flow zone of the APPZ.

The annular zone from 275 to 594 ft bls was left open as the UFA and OCAPlpz monitoring zone. Both monitoring zones were developed for 1 hour using airlifting and centrifugal pumping methods. A wellhead (modified from the initial design because of the artesian conditions encountered) was then installed.

The two monitored zones were designated POF-31U (open to the UFA and OCAPlpz) and POF-31L (open to the APPZ). The as-built well completion diagram for POF-31U and POF-31L is provided in **Figure 2**, and a photograph of the completed wellhead is shown in **Figure 3**.

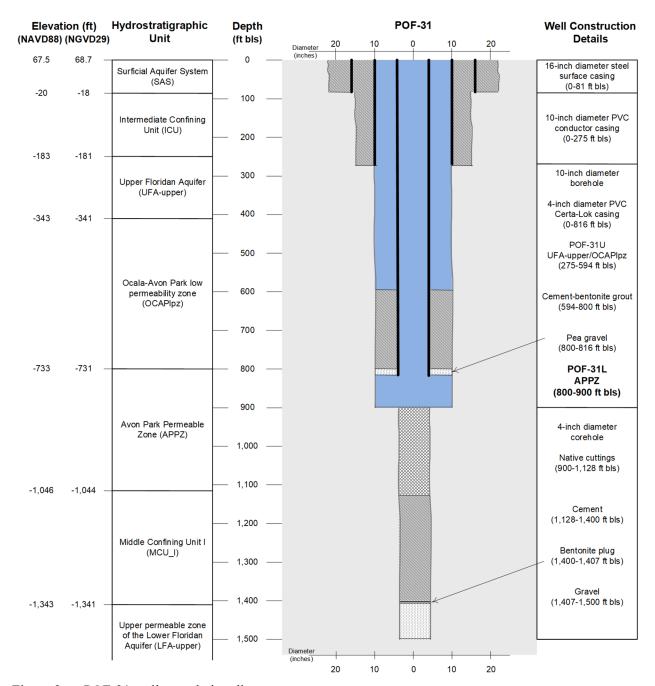


Figure 2. POF-31 well completion diagram.



Figure 3. POF-31 wellhead.

The second well to be constructed on the site (POF-32) was planned to be completed as an LFA monitoring well, with the upper zones cased off to prevent the downhole groundwater flow due to a strong downward hydraulic gradient experienced during the construction of POF-31 (discussed later in this report). Following completion of POF-31, the drill rig was moved to the proposed location for POF-32. Mud-rotary drilling of POF-32 started on September 20, 2020. A 22-inch-diameter borehole was drilled to a depth of 84 ft bls, and a 16-inch-diameter steel surface casing was installed and grouted in place. Next, a 15-inch-diameter borehole was advanced to 270 ft bls. Ten-inch-diameter PVC casing was installed to a depth of 270 ft bls and grouted in place using cement-bentonite grout.

Reverse-air drilling methods were then used to advance a 10-inch-diameter borehole to a depth of approximately 1,407 ft bls, near the top of the LFA. At that point, geophysical logging was completed, and the United States Geological Survey (USGS) performed optical borehole imaging (OBI). After these logs were competed, 1,411 ft of 6-inch-diameter steel casing was hung in the borehole using the drill rig and grouted in place using cement-bentonite grout to a total depth of 1,407 ft bls.

The week of November 23, 2020, was spent drilling out the cement-bentonite grout plug at the bottom of the 6-inch-diameter steel casing and removing a section of stuck tremie pipe. Reverse-air drilling resumed on November 30, 2020, and a 6-inch-diameter borehole was advanced to 1,440 ft bls, at which point the tricone bit lost one of the cones. An attempt to drill through the lost cone was unsuccessful, as was an attempt to retrieve the cone using a magnet. Ultimately, the tricone bit cone was removed using wireline coring methods, and reverse-air drilling resumed, advancing the borehole to a depth of 1,500 ft bls. The corehole was then cored to a total depth of 2,000 ft bls. Sixteen packer tests were completed during wireline coring at 30-foot depth intervals between depths of 1,500 and 2,000 ft bls.

A total of 16 packer tests were completed in the POF-32 corehole. After completing wireline coring and packer testing to a depth of 2,000 ft bls, geophysical logs were completed to total depth, except for sonic porosity which was unable to be completed in the small-diameter portions of the hole. The final open-hole interval (1,407 to 1,840 ft bls) was reamed to an approximate diameter of 6 inches. The cuttings produced during reaming were allowed to settle within the corehole, filling the corehole from 2,000 to 1,840 ft bls. A second OBI log was then completed in the reamed borehole. Following the completion of the OBI logging, the well was pump developed until groundwater parameters stabilized, and the wellhead was installed. The as-built well completion diagram for POF-32 is provided as **Figure 4**.

Pressure transducers were installed in all three monitor zones in both wells (POF-31U, POF-31L, and POF-32) and were connected to the District's SCADA system. Groundwater elevation data acquisition began on June 2, 2021. A photograph of the completed wells at the Sumica site is shown in **Figure 5**. A chronological summary of well construction activities is presented in **Appendix B**. Well completion reports were filed with the appropriate agencies and are in **Appendix C**. Geophysical logs are provided in **Appendix D**, and OBI logs are in **Appendix E**.

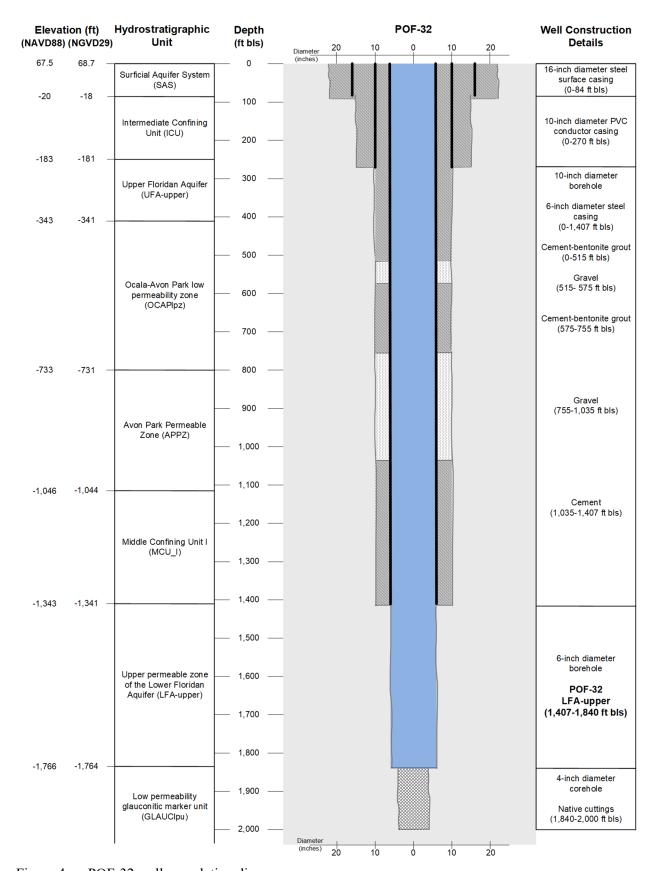


Figure 4. POF-32 well completion diagram.



Figure 5. Photograph of wells at the Sumica site. (Note: The location of POS-21 is shown in **Figure 1**.)

## STRATIGRAPHIC FRAMEWORK

SAS sediment samples were collected from SUMICAN-PW (installed during this project as a makeup water well for drilling POF-31 and POF-32) and from POS-21 by District hydrogeologists. POS-20 was installed as part of a separate project. The District also collected cuttings and rock core samples during the drilling of the POF-31 and POF-32 pilot holes.

At POF-31, cuttings were collected from 87 to 290 ft bls, and wireline core samples were continuously collected from 290 to 1,500 ft bls. Wireline core samples were then collected between 1,500 and 2,000 ft bls at POF-32. District hydrogeologists described the core samples based on the dominant lithologic, textural, and porosity characteristics using the expanded Dunham classification (Embry and Klovan 1971). These lithologic descriptions are presented in **Appendix F**. **Table 1** is a summary of the stratigraphic units encountered during this investigation.

Table 1. Sumica site stratigraphy.

Stratigraphic Unit	Top Depth (ft bls)	Bottom Depth (ft bls)
Undifferentiated Tertiary-Quaternary Sediment	0	87
Tamiami Formation	Not Present	
Hawthorn Group: Peace River Formation	87	155
Hawthorn Group: Arcadia Formation	155	250
Suwannee Limestone	Not Present	
Ocala Limestone	250	330
Avon Park Formation	330	1,871
Oldsmar Formation	1,871	Not Encountered

ft bls = feet below land surface.

# Holocene, Pleistocene, and Pliocene Series

The undifferentiated Holocene, Pleistocene, and Pliocene Series extends to a depth of 87 ft bls. Split-spoon SPT samples were collected from ground surface to 87 ft bls from the POS-21 borehole and the borehole for makeup water well SUMICAN-PW. These samples were used to describe the shallow sediments. The soil samples were sieved by District hydrogeologists and were composed almost entirely of poorly graded sand with clay (SP-SC) and poorly graded sand (SP). One sample (from 17 to 19 ft bls) was a clayey sand (SC). These results are presented in **Appendix G**.

## **Miocene Series**

The Hawthorn Group at the Sumica site was composed of clay, silt, calcareous clay, quartz sand, phosphatic sand, shell and clayey shell beds, limestone, and dolostone and extends from 87 to 250 ft bls. The Hawthorn Group consists of the Peace River Formation and the Arcadia Formation. The deposition of the Hawthorn Group occurred in shallow to moderately deep marine waters where deposition rates of clastic material were high. According to Miller (1986), the consensus is that the phosphate was deposited by upwelling of cold marine waters.

#### Peace River Formation

The Peace River Formation was encountered between depths of 87 and 155 ft bls at the site. The Peace River Formation at the site was composed of gray and dark gray clay, gray and greenish gray sandstone, very pale orange and light brownish gray shell fragments, trace quartz sand, and trace amounts of phosphate grains. The lithology was dominated by sandy clay from 87 to 100 ft bls, where it transitioned to primarily shell fragments.

#### Arcadia Formation

The Arcadia Formation can be differentiated from the Peace River Formation by its relatively lower siliciclastic sediment content (Scott 1988). A transition from the clay, sand, and shell beds of the overlying Peace River Formation to light gray to gray phosphatic dolostone occurred at 155 ft bls at the site and marked the top of the Arcadia Formation. The Arcadia Formation was encountered between 155 and 250 ft bls at the site. The lithology of the Arcadia Formation was composed predominantly of light gray phosphatic dolostone from 155 to 205 ft bls, where the lithology changed to dark gray clay. At 245 ft bls, the lithology changed to light gray dolostone and light green clay. Phosphatic dolostone composed up to 20% of the cuttings. Shark tooth fragments were also identified in the Arcadia Formation. The base of the Arcadia Formation was identified at 250 ft bls, where light gray dolostone and very pale orange limestone, along with the foraminifera *Lepidocyclina ocalana* (indicative of the Ocala Limestone) were observed. The base of the Arcadia Formation and Hawthorn Group was also associated with a large decrease in gamma ray response in the geophysical logs collected at the Sumica site.

# **Oligocene Series**

#### Suwanee Limestone

The Suwanee Limestone was not encountered at the site.

## **Eocene Series**

#### Ocala Limestone

The Upper Eocene Ocala Limestone was encountered between depths of 250 and 330 ft bls. Between 250 and 270 ft bls, the Ocala Limestone was composed of light gray dolostone and clayey dolostone containing shell fragments and *Lepidocyclina* fossils. From 275 to 285 ft bls, very pale orange shell fragments, very pale orange limestone, and *Lepidocyclina* were found. Below 285 ft bls, the lithology consisted of poorly to moderately indurated, very pale orange, fossiliferous wackestone and packstone with bivalve fragments, gastropods, and foraminifera, including *Lepidocyclina* and miliolids. The Ocala Limestone at the site had moderate to high intergranular and moldic porosity. Porosity increased with depth.

The Ocala Limestone was deposited on a warm, shallow, carbonate bank, similar to the modern-day Bahamas (Miller 1986). This low-energy environment probably had low to moderate water circulation (Tucker and Wright 1990).

#### **Avon Park Formation**

The top of the Middle Eocene Avon Park Formation was encountered at a depth of 330 ft bls, where an increase in gamma ray activity was recorded in the geophysical logs and the lithology transitioned from fossiliferous wackestone and packstone characteristic of the Ocala Limestone to a mudstone lacking fossils. This very pale orange, low to moderate porosity mudstone interval extended from 330 to 340 ft bls. The Avon Park Formation at the site was poorly to moderately indurated and porosity estimates ranged from high intergranular and moldic porosity to no observable porosity.

Fallotella cookei (formerly Dictyconus cookei) can be diagnostic of the Avon Park Formation. These foraminifera were first identified in POF-20 at a depth of 578.5 ft bls. However, other lithologic features characteristic of the Avon Park Formation were observed above this depth.

From 334 to 429 ft bls, the lithology was composed of very pale orange to pale brown interbedded wackestone, mudstone, and minor amounts of packstone containing foraminifera, gastropods, bivalves, and echinoids.

Below an approximately 6-inch-thick layer of light greenish gray clay at 429 ft bls, the lithology changed to wackestone, mudstone, and packstone with thin interbedded clay and dolostone that continued to a depth of 612.5 ft bls. The white, yellowish gray, very pale orange, and pale yellowish brown clay layers found in this interval ranged from 0.8 ft thick to 2.85 ft thick. Organic laminations were common through this interval of poorly indurated rock. Echinoids, gastropods, and foraminifera including *Fallotella cookei* were observed. The estimated porosity was low to moderate, intergranular, and moldic. Approximately 20% of this interval had no observable porosity. Some fractures were present, becoming more common with depth.

From 612.5 to 811.3 ft bls, the lithology remained the same, but the porosity became moderate to high, intergranular, and moldic, and the rock became more indurated. Chert was observed between 750 and 763.6 ft bls.

Dolostone with interbeds of dolomitic limestone and calcareous dolostone were the dominant lithologies encountered between 811.3 and 1,493 ft bls. The rock in this interval was very pale orange to dark yellowish orange, moderately to well indurated, with low to high pinpoint, moldic, and vuggy porosity. The rock texture varied from microcrystalline to sucrosic. Fractures and organic laminations were common. The fossil assemblage in this interval consisted of gastropods, mollusks, and bryozoans. Accessory minerals

included calcite, celestine, and chert. From 970 to 1,151 ft bls, crystalline calcite was found in vugs and as coatings on fracture surfaces. From 1,330 to 1,476 ft bls, celestine occurred as euhedral, vug-filling crystals.

Between 1,493 and 1,520 ft bls, interbedded moderate yellow brown to very pale orange packstone and wackestone with interbeds of microcrystalline dolostone were encountered. This interval had moderate to low, intergranular, moldic, pinpoint, and vuggy porosity. Induration was moderate to good. Echinoid and bivalve fossils were present. Calcite crystals were present on fracture surfaces and inside vugs and molds.

From 1,520 to 1,535.1 ft bls, fractured, well indurated, moderate yellowish brown microcrystalline dolostone and calcareous dolostone was encountered. This interval had moderate to high pinpoint and vuggy porosity.

From 1,535.1 to 1,598.5 ft bls, the lithology changed to very pale orange to pale yellowish brown clayey wackestone and packstone. This interval had low intergranular porosity, with some strata having no observable porosity. Induration was moderate to poor, and bivalve and gastropod shell fragments were abundant. Limonite and pyrite were present, and a calcite vein was found at 1,538.6 ft bls.

From 1,598.5 to 1,668.3 ft bls, the rock was composed of grayish orange to dark yellowish brown microcrystalline dolostone with interbedded calcareous dolostone, packstone, and wackestone. The packstone and wackestone beds were encountered near the bottom of this interval. The rock had low to moderate pinpoint and vuggy porosity and was moderately indurated to well indurated and fractured. Limonite and pyrite were found throughout the interval. The limonite could be the result of the oxidization and weathering of pyrite, but it is not known if this oxidization occurred before or after cores were brought to the surface.

From 1,668.3 to 1,716.2 ft bls, the rock consisted of very pale orange to grayish orange wackestone and packstone with low intergranular porosity and moderate induration. Limonite, pyrite, and bivalve and echinoid shell fragments were observed.

From 1,716.2 to 1,823.1 ft bls, the rock was primarily composed of grayish orange to moderate yellowish brown, highly fractured microcrystalline dolostone with a few packstone, and wackestone interbeds. The dolostone had moderate to high pinpoint and vuggy porosity and was moderately indurated to well indurated. The limestone interbeds were very pale orange and had low intergranular porosity and moderate induration. Organics, limonite, pyrite, and glauconite were found within this interval.

From 1,823.1 to 1,871.1 ft bls, the rock was composed of yellowish gray to moderate yellowish brown microcrystalline dolostone and calcareous dolostone with low to moderate pinpoint and vuggy porosity. A total of 18.3 ft of this 40-foot-long interval was microcrystalline with no porosity. Induration was moderate to good with some fractures. From 1,850 to 1,868.3 ft bls, the rock contained abundant organic laminations. Accessory minerals included limonite, glauconite, and milky, white quartz with a globular, rounded habit. This white quartz was observed fully or partially filling vugs. This could reduce porosity and permeability in this interval. Similar occurrences of white quartz have also been found by the SWFWMD during the exploratory drilling for well ROMP-115. White quartz with this habit was referred to as "snowball quartz" in the report for ROMP-115 (Zydek 2020). Similar snowball quartz crystals from POF-32 are shown in Figure 6. Previous work (Zydek 2020) noted that the vugs and molds appeared to have been initially filled with gypsum and/or anhydrite which later dissolved, allowing the formation and growth of quartz in these spaces when the geochemical conditions were right for their growth. At ROMP-115, the quartz was identified in both the Avon Park and Oldsmar formations. At the Sumica site, quartz was only encountered near the base of the Avon Park Formation.



Figure 6. Photo of "snowball" quartz samples collected from various depths between 1,850 and 1,868.3 ft bls within the Avon Park Formation in the POF-32 corehole.

#### **Oldsmar Formation**

The top of the Oldsmar Formation was encountered at a depth of approximately 1,871 ft bls and extended to the bottom of the corehole at 2,000 ft bls. The base of the unit was not encountered. The contact between the Avon Park Formation and the Oldsmar Formation at POF-32 was gradational. At a depth of 1,848.5 ft bls, the dolostone of the Avon Park Formation became more calcareous and clayey until it transitioned to a clean foraminiferal wackestone at a depth of 1,871.1 ft bls.

From the top of the Oldsmar Formation to 1,915.1 ft bls, the rock was very pale orange to pale yellowish brown wackestone and mudstone, with thin beds of clay near the top of the interval. Porosity was primarily intergranular and ranged from none to moderate. The only fossils encountered were unidentifiable foraminifera. A variety of accessory minerals were encountered in this interval and included white quartz, limonite, organics, and glauconite. Anhydrite and gypsum, although commonly found as infillings in vugs in the Oldsmar Formation, were not found at the Sumica site.

The lithology changed to clayey, interbedded wackestone, packstone, and mudstone from 1,915.1 ft bls to the total coring depth of 2,000 ft bls. These rocks had moderate to poor induration and low to moderate intergranular porosity. Rock colors varied from white, gray, light gray, light olive gray, greenish gray, pale yellowish brown, and very pale orange. Limonite, pyrite, glauconite, laminations of organics, and limestone intraclasts were common. The intraclasts indicate reworking of the sediments after deposition.

Like the overlying Avon Park Formation, the Oldsmar Formation was deposited in a shallow, warm water carbonate bank environment (Miller 1986).

## HYDROSTRATIGRAPHIC FRAMEWORK

The SAS and FAS are the two aquifer systems intersected by POF-31 and POF-32, with the FAS being the primary subject of this investigation. The FAS is subdivided into aquifers of moderate to high permeability where dissolution features and fractures are common, separated by zones of lower permeability that offer varying degrees of confinement. The nomenclature assigned to these aquifers and confining units varies in the literature as well as between neighboring water management districts as shown in **Figure 7**.

	Miller (1986)	SWFWMD	SJRWMD	SFWMD		
	Miller (1300)	(Horstman 2011)	(Davis and Boniol 2011)	(Reese and Richardson 2008)		
		Suwanee Permeable Zone	و المحالة الم	Upper Floridan Aquifer		
u	Upper Floridan Aquifer	Dorne Sone Avon Park	Ocala/Avon Park  Low-Permeability Zone  Document	Middle Confining/ Semi-Confining Unit 1		
Floridan Aquifer System		Avon Park Permeable Zone	Avon Park Permeable Zone	Avon Park Permeable Zone		
ridan Aqu	Middle Confining Unit (I, II, or VI)	Middle Confining Unit (I, II, or VI)	Middle Confining Unit Middle Confining Unit II	I Middle Confining Unit 2		
Flor	Lower Floridan Aquifer	Lower Floridan Aquifer (Below Middle Confining Unit I, II, or VI)	Upper Permeable Zone Confining Unit Lower Permeable Zone Boulder Zone Fernandina Zone			
	Sub-Floridan Confining Unit					

Figure 7. Comparison of the hydrostratigraphic unit names for the FAS. This shows the names used by Miller (1986), the SFWMD, and the neighboring CFWI water management districts, SJRWMD and SWFWMD.

To remain consistent within the CFWI Planning Area, the cooperating water management districts agreed on a slightly modified hydrogeologic conceptualization (**Figure 8**) as the basis for development of the East Central Florida Transient Expanded (ECFTX) groundwater model, which is being used to evaluate groundwater availability in the region. As a component of the CFWI, this report follows the hydrostratigraphic names shown in **Figure 8** for the units intersected by the exploratory drilling at the Sumica site. A representative hydrogeologic section, with hydrogeologic units conforming most closely to the Sumica site, is presented in **Figure 8**.

# Model Layer Hydrostratigraphic Conceptualization

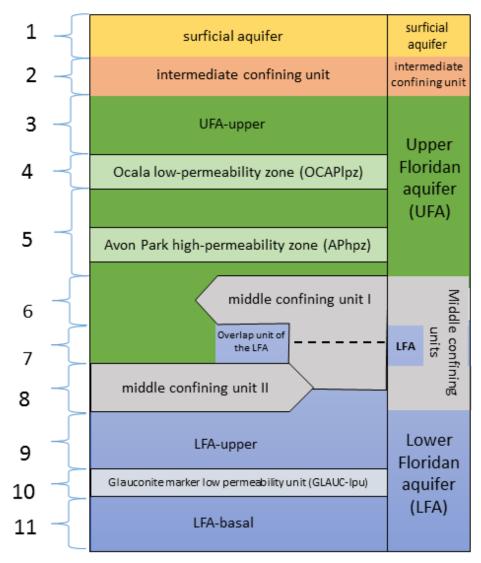


Figure 8. Groundwater model layer numbers, hydrostratigraphic conceptualization, and vertical discretization of the ECFTX model (CFWI Hydrologic Analysis Team 2020).

# Surficial Aquifer System (0 to 87 ft bls)

The SAS at the site consisted of unconsolidated, predominantly fine quartz sand with varying amounts of silt, clay, shell, and heavy minerals. The top of the Hawthorn Group often was selected as the base of the SAS. However, lower-permeability sediments were found at much shallower depths, so the bottom of this unit was gradational. A depth of 87 ft bls was selected as the bottom of the SAS, based on sieve analyses of sediment samples from POS-31 and SUMICAN-PW.

# Intermediate Confining Unit (87 to 250 ft bls)

The ICU separates the SAS from the FAS and was encountered between depths of 87 and 250 ft bls. At the Sumica site, the ICU was composed of clay, sandy clay, sandy and clayey shell beds, sandstone, and clayey dolostone. Phosphate grains were present throughout as were trace amounts of shark's teeth.

# Floridan Aquifer System (250 to 2,000 ft bls)

The FAS consists of Tertiary-age limestone and dolostone. At Sumica, the FAS included permeable sedimentary strata of the Ocala Limestone, Avon Park Formation, and Oldsmar Formation. Regionally, the base of the FAS occurs in the Paleocene Cedar Keys Formation, which was not penetrated at the site.

The hydrogeologic units within the FAS were delineated based on the exploratory coring, drilling, and geophysical logging, as well as the hydraulic testing and water quality analyses from 56 packer tests completed during exploration drilling at the site.

An estimate of hydraulic conductivity was calculated using the Cooper-Jacob equation (see Hydraulic Parameters section below). This equation is empirically derived and is based on the drawdowns corrected for head losses and the pumping rates of each packer test. **These hydraulic conductivities are intended to show the relative changes in productivity as drilling progressed through the corehole and are not intended to be used as absolute values.** Hydraulic conductivities obtained from aquifer testing are more representative of an entire aquifer than an individual packer test or set of packer tests, which only pumps from a small portion of a larger aquifer, for a short period of time and at relatively low pumping rates (as compared to an aquifer performance test) that likely do not significantly stress the aquifer as a whole. A complete description of the packer testing methods, data analyses, and results is provided later in this report. For comparison with previous SFWMD reports, the hydraulic conductivities discussed in this section are based on the Cooper-Jacob equation.

# Upper Floridan Aquifer

The UFA typically occurs at the base of the Hawthorn Group although it locally may include permeable units within the lower Arcadia Formation. The UFA at the Sumica site included the Ocala Limestone and portions of the Avon Park Formation. The UFA generally consists of several thin, highly permeable water bearing zones interbedded with thicker, lower-permeability zones. The CFWI Hydrologic Analysis Team (2016) used three regionally mappable units to represent the vertical heterogeneity of the UFA: UFA-upper, OCAPlpz, and APPZ.

# UFA-upper (250 to 410 ft bls)

The UFA-upper is the uppermost permeable zone of the FAS. At this site, the UFA-upper consisted of poorly to moderately consolidated wackestone and packstone. A solutioned flow zone often is observed near the contact between the Hawthorn Group and Ocala Limestone. Although this boundary was concealed by the temporary casing during OBI logging, the boundary was observed during lithologic logging at 250 ft bls. Four packer tests were completed within the UFA-upper. The first packer test (from 290 to 320 ft bls) had excessive drawdown, indicating that the pumping rate was too high for the tested interval, negating the results from this test. The remaining three packer test results had average calculated hydraulic conductivities of less than approximately 7 ft/day (refer to **Table 6**). Water quality from this interval (refer to **Table 7**) was the freshest in the corehole, with total dissolved solids (TDS) concentrations that ranged from 96 to 103 mg/L. A typical example of the appearance of the UFA-upper in the OBI log is shown in **Figure 9**.

The UFA-upper is highly productive in the northern portion of the CFWI Planning Area, but previous investigations and reports have found that productivity tends to decline to the south (Richardson et al. 2020a). Reported transmissivities of the UFA-upper typically range from less than 10,000 to more than 100,000 ft²/day in Central Florida (CFWI Hydrologic Analysis Team 2016). Nine UFA-upper packer tests completed at nearby OSF-113 (located approximately 11.6 miles to the southeast near the S65 locks) resulted in hydraulic conductivities that averaged approximately 9 ft/day, similar to what was calculated for the UFA-upper at the Sumica site. At OSF-113 the estimated bulk transmissivity was approximately 2,500 ft²/day, which falls within the low end of the reported regional range (Richardson et al. 2020a).

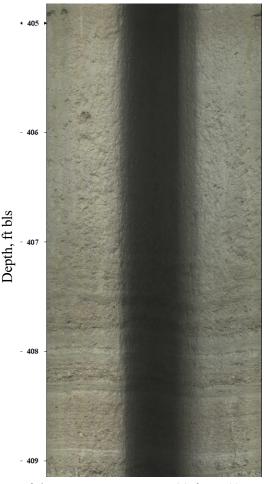


Figure 9. Typical appearance of the UFA-upper at POF-32 from 405 to 409 ft bls in the OBI log. Laminations, bedding, and vuggy texture are visible.

# OCAPIpz (410 to 800 ft bls)

The OCAPlpz is generally distinguished from the UFA-upper by a reduction in secondary permeability. The lithology of the OCAPlpz is similar to the UFA-upper and is characterized by interbedded mudstone, wackestone, and packstone. Although the OCAPlpz is generally semiconfining, minor permeable zones can be found within the OCAPlpz (CFWI Hydrologic Analysis Team 2020). The OCAPlpz at the Sumica site contained significantly more structural deformation features than the overlying UFA-upper which could increase secondary porosity and permeability within localized zones of deformation. These features included significant faulted bedding, folded bedding, and brecciated zones as compared to other hydrostratigraphic units encountered at the site. In addition, laminations were more common and better-developed than in the UFA-upper. Packer tests within the OCAPlpz yielded hydraulic conductivities

of approximately 1 to 16 ft/day with an average of approximately 6 ft/day. Similar to what was seen in the UFA-upper, these hydraulic conductivities were comparable to those calculated from packer tests completed at OSF-113 which yielded an average hydraulic conductivity of approximately 5 ft/day for the OCAPlpz. TDS for the OCAPlpz was similar to the UFA, with TDS concentrations ranging from 94 mg/L (test 17 from 770 to 800 ft bls) to 109 mg/L (test 9 from 530 to 560 ft bls). Examples of structural features observed in the OCAPlpz are shown in **Figure 10**.

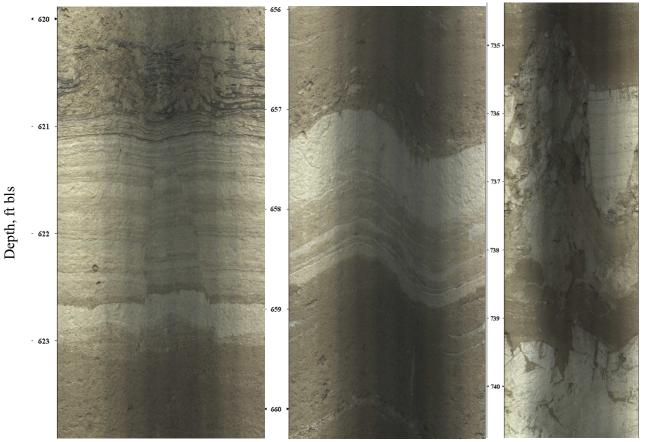


Figure 10. Examples (from left to right) of faulted bedding, folded bedding, and brecciated bedding from depths of 620 ft bls, 598 ft bls, and 735 ft bls, respectively, within the OCAPlpz. Photos are from the OBI log.

## APPZ (800 to 1,113 ft bls)

Reese and Richardson (2008) described the APPZ as a regionally mappable, high-permeability zone within the Avon Park Formation, characterized by relatively brittle dolostone or interbedded dolostone and dolomitic limestone with zones of secondary fracture permeability. Within the APPZ, cavernous or karstic, intergranular, and intercrystalline permeability may also be present. As mapped by Reese and Richardson (2008), the APPZ includes all the geologic materials from the base of the OCAPlpz to the top of the middle confining unit I (MCU\_I). At the site, the APPZ was composed predominantly of hard microcrystalline dolostone, interbedded with lesser amounts of dolomitic limestone and calcareous dolostone. On the geophysical logs, the APPZ lies within very high formation resistivity and highly variable sonic porosity. The APPZ's upper boundary is at 800 ft bls where the first occurrence of fracture flow was noted. Permeability and groundwater flow in this unit are primarily controlled by fractures, but between fractured zones, pinpoint vugs, and bedding plane solutioning also contribute to productivity.

## APhpz-1 and APhpz-2 (800 to 857 ft bls and 958 to 1,023 ft bls)

The CFWI Hydrologic Analysis Team (2016) adopted the term Avon Park high-permeability zone (APhpz) to differentiate the most productive fractured intervals from the more confining, lower-productivity portions of the APPZ. The APPZ is equivalent to ECFTX model layer 5 (CFWI Hydrologic Analysis Team 2020), and the APhpz is a subset of that unit (**Figure 8**). At the Sumica site, there was a slight increase in TDS concentrations (from 94 to 100 mg/L) at the OCAPlpz/APPZ boundary, a shift from calcium bicarbonate (CaHCO<sub>3</sub>) water type to sodium chloride (NaCl) water type, and a significant increase in hydraulic conductivity calculated from packer tests, from 10 ft/day in packer test 17 (770 to 800 ft bls) in the OCAPlpz, to 24 ft/day in test 18 (800 to 830 ft bls) in the APPZ.

The APhpz at the site is composed of two discrete fractured zones occurring at depth intervals of 800 to 857 ft bls (referred to here as APhpz-1) and 958 to 1,023 ft bls (referred to here as APhpz-2). The hydraulic conductivities calculated from the packer tests completed in these two zones were the highest values calculated from all the packer tests completed in the APPZ during this investigation (see Hydraulic Parameters section and **Table 6**). The hydraulic conductivities calculated for the tests completed in these fracture zones ranged from approximately 24 ft/day to approximately 117 ft/day. The uncertainty of the higher hydraulic conductivities is due to the minimal amount of drawdown produced when testing high-permeability rock at a relatively low pumping rate in a small corehole. Examples of the APhpz-1 and APhpz-2 flow zones are shown in the images from the OBI logs in **Figure 11**.



Figure 11. APhpz-1 flow zones as shown in these images from the OBI log. From left to right, a large vertical solution-enhanced fracture from 800 to 805 ft bls; a zone of fractured rock bounded on the top by an open bedding plane solution zone from 820 to 825 ft bls; and bedding plane solution, vertical fractures, and contorted, laminated bedding with bedding plane solution from 854 to 857.5 ft bls.

Hydraulic conductivities calculated for the unfractured zones within the APPZ were variable, but generally lower than the two fractured zones (APhpz-1 and APhpz-2). Hydraulic conductivities ranged from approximately 3 to 26 ft/day. Typical appearance of the lower-productivity, less-fractured zones of the APPZ is shown below in **Figure 12**.

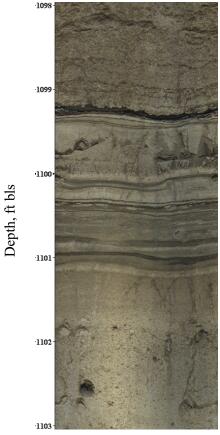


Figure 12. Typical appearance of relatively lower-transmissivity zones within the APPZ as seen in the OBI log. Partially open/solutioned bedding plane and vuggy texture above and below the finer-grained, laminated interval are visible. This image extends from 1,098 to 1,103 ft bls.

The degree of hydraulic connection between the fractured intervals within the APPZ in the CFWI region is a subject of interest and debate. Some CFWI exploratory coreholes within the District have shown strong evidence for hydraulic connection between the APPZ's fractured intervals, while other data are more ambiguous. At the Sumica site, the recovery water levels measured at the end of each packer test were similar in both APhpz-1 and APhpz-2. The groundwater chemistry of both fracture zones at the site is classified here as magnesium-bicarbonate, Frazee FW-I/FW-II water types (Frazee 1982). While the water levels and water quality for these flow zones were similar, the degree of connection between these zones was unable to be determined. The similarities may be coming from regional geologic hydraulic connections between these fracture sets or from nearby wells that are connecting the zones. Conversely, a hydraulic separation may exist that cannot be determined under an absence of pumping stresses. The low TDS concentrations in the APPZ groundwater samples from the Sumica site (84 to 108 mg/L, Table 7) suggest that there is likely little to no hydraulic connection between the APPZ and the underlying elevated-TDS groundwater of the LFA. Due to the large downward hydraulic gradient, saline water from deeper zones in the LFA is unlikely to migrate upward under unpumped conditions, even if the MCU is a poor confining unit at the Sumica site.

# Middle Confining Units I and II

Miller (1986) first defined the MCU and subdivided it into eight regional units designated by Roman numerals I through VIII. The CFWI Hydrologic Analysis Team (2016) recognized two of these units (MCU\_I and MCU\_II) within the ECFTX model domain. MCU\_I separates the UFA from the LFA.

MCU\_I, the shallower unit, is generally composed of dolostone and micritic limestone and is the leakier of the two confining units. MCU\_II is composed of hard, microcrystalline dolostone to dolomitic limestone, characterized by evaporite beds and evaporitic pore infillings, which greatly reduces the unit's permeability.

MCU\_I is absent from the western portion of the ECFTX model domain, while MCU\_II is absent from the eastern portion. Along the western reaches of the Kissimmee River Valley and Lake Wales Ridge, the two units overlap, greatly increasing the thickness of the MCU in that area. MCU\_I was encountered at the Sumica site and is described below. MCU\_II was not encountered, but the significant deposits of the evaporite mineral celestine encountered in the corehole suggest it once existed. This is discussed below.

## MCU I (1,113 to 1,410 ft bls)

MCU\_I at the Sumica site was composed almost entirely of dolostone. As compared to the APPZ, the rock comprising MCU\_I was poorly indurated and had a granular texture. MCU\_I generally tends to be higher in porosity than the APPZ but lacks significant fracturing or vuggy permeability. As seen in **Figure 28**, there was a gradual increase in TDS concentrations across MCU\_I from 104 mg/L at the top of the unit to 308 mg/L at the bottom of the unit. An example of the typical appearance of MCU\_I is shown in **Figure 13**.

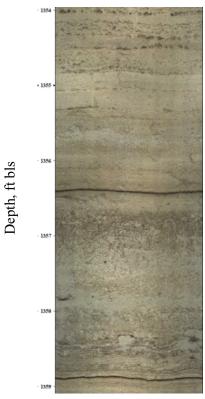


Figure 13. Typical appearance of MCU\_I at the Sumica site from the OBI log. Tight to partially open bedding planes, laminations, granular texture, and vugs are visible. This image extends from 1,354 to 1,359 ft bls.

Ten packer tests (tests 28 through 37) were completed within MCU\_I at the Sumica site, resulting in hydraulic conductivities that ranged from approximately 2 to 15 ft/day, with an average of approximately 6 ft/day, similar to the hydraulic conductivities of the relatively unfractured portions of the APPZ. These MCU\_I hydraulic conductivities are comparable to those estimated from packer tests completed within MCU\_I at nearby well OSF-113 where hydraulic conductivities ranged from approximately 2 to 20 ft/day with an average of approximately 9 ft/day.

The depth-to-water measurements collected at the end of each packer test recovery period increased between the upper part of MCU\_I and the lower part of MCU\_I, indicating a downward gradient through MCU\_I. In the upper portion of MCU\_I between 1,110 ft bls (top of test 28) and 1,290 ft bls (bottom of test 33), the recovery depth-to-water measurements were relatively shallow and showed little variation, averaging 1.06 ft above land surface. For the bottom portion of MCU\_I, between 1,320 ft bls (top of test 35) and 1,410 ft bls (bottom of test 37), the recovery depth-to-water measurements were all greater (deeper) than those measured in the upper part of the MCU, averaging 5.80 ft bls, with a transition occurring during test 34 (1,290 to 1,320 ft bls) where the depth to water was 2.22 ft bls.

#### MCU II

An objective of this project was to evaluate the MCU at the Sumica site. The ECFTX model layers in **Figure 14** show the extent of the MCU\_II boundary near the site. MCU\_II, typically characterized by evaporite beds and infillings of anhydrite and gypsum, was not encountered at the Sumica site. The evaporite celestine was encountered as euhedral to subhedral and vug filling crystals from 1,330 to 1,476 ft bls. This interval overlapped the base of MCU\_I and the top of the LFA-upper. Groundwater samples collected from this interval had elevated strontium concentrations (22.3 to 34.6 mg/L) and saturation indices near equilibrium (-0.08 to 0.4). Crystalline celestine has been encountered previously in the corehole for CFWI well OSF-64R (Coonts 2021) and in other FAS coreholes as grains within the host rock (McCartan et al. 1988). **Figure 15** provides photographs of the large celestine crystals found in the Sumica coreholes at three different depths.

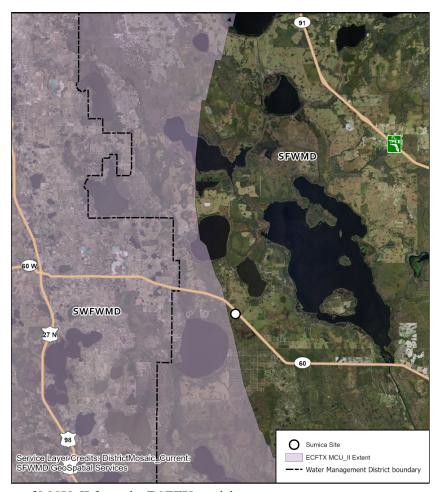


Figure 14. Extent of MCU II from the ECFTX model.



Figure 15. Celestine in core samples collected at the Sumica site. A. 1,413.7 ft bls. B. 1,417 ft bls. C. 1,441 ft bls.

Celestine can form through the replacement of gypsum and anhydrite due to the relatively higher solubility of the calcium sulfate minerals. Strontium ions in the groundwater will react with soluble deposits of calcium sulfate to create the less soluble celestine. The presence of celestine as an indicator of evaporite dissolution is a well-documented association (West 1973, Warren 2006). In a bicarbonate-rich environment, diagenesis can eventually convert the celestine to strontianite (Salter and West 1965). Strontianite was identified at the Sumica site at a depth of 1,380 ft bls.

Dissolution breccias can develop as beds of evaporites are dissolved. Dissolution breccias were not observed in the OBI logs or the recovered rock cores at the Sumica site. Evidence of the former presence of evaporite nodules was present at the site in the form of vugs with irregular edges. Some of these vugs were infilled with celestine, while others were empty and had a cauliflower-mold-like appearance. Examples of these vugs are shown in **Figure 16**. It is unclear how abundant the evaporites were before their dissolution, and how confining the rock was prior to evaporite dissolution. However, there are signs (**Figure 16**) that anhydrite or gypsum previously infilled the vugs between the depths of 1,330 and 1,476 ft bls. Evaporite dissolution increased the vuggy porosity near the top of the LFA-upper and the depth of the top of the aquifer likely changed over time as more evaporites dissolved.



Figure 16. Typical appearance of vugs with shapes suggesting they were previously filled by nodules of anhydrite or gypsum. This image extends from 1,403 to 1,404 ft bls.

### Lower Floridan Aquifer

The LFA consists of a sequence of permeable zones separated by lower-permeability units. Some permeable zones, including the Boulder Zone of South and east Central Florida, are regionally mappable (CFWI Hydrologic Analysis Team 2020). The LFA can be more than 1,000 ft thick within the CFWI area and includes highly productive zones and confining units with salinities ranging from fresh water to seawater. Discretizing the LFA into less hydraulically diverse subdivisions was one of the objectives of the ECFTX model CFWI Hydrologic Analysis Team (2020).

For the ECFTX model, the LFA was subdivided into upper (LFA-upper) and basal (LFA-basal) permeable zones separated by the regionally mappable GLAUClpu (CFWI Hydrologic Analysis Team 2016). The exploratory corehole at the Sumica site was terminated within the GLAUClpu, and provides needed information on the thicknesses, depths, and productivities of the LFA-upper, GLAUClpu, and the upper part of the LFA-basal. Reported transmissivities of the LFA range from more than 500,000 ft²/day in metropolitan Orlando, to less than 500 ft²/day in southwestern Polk County. This is potentially attributable to evaporitic infilling of pore spaces (CFWI Hydrologic Analysis Team 2020).

## LFA-upper (1,410 to 1,833 ft bls)

The top of the LFA-upper was identified at 1,410 ft bls, coinciding with a change in packer test recovery water levels, an increase in packer test transmissivity, and a notable change in groundwater chemistry. The depth to water at the end of each packer test recovery period increased between the MCU and the LFA-upper, indicating a downward gradient between the hydrostratigraphic units. The lower portion of MCU\_I had recovery depth-to-water measurements that averaged 5.8 ft bls. In contrast, the LFA-upper, between 1,410 ft bls (top of test 38) and 1,833 ft bls (bottom of test 51) had an average recovery depth to water of 10 ft bls.

Packer test hydraulic conductivities increased by an order of magnitude between MCU\_I and the LFA-upper, from approximately 2 ft/day (test 37 at the base of the MCU) to approximately 17 ft/day (test 38 at the top of the LFA-upper).

Productivity in the LFA-upper at the Sumica site appears to come from multiple, discrete zones of fractured or vuggy rock interbedded with very low-permeability dolostone. Three significant productive zones were identified based on the packer test data. For discussion purposes, these three productive zones are named and numbered sequentially from shallow to deep as LF1 (1,410 to 1,463 ft bls), LF2 (1,603 to 1,669 ft bls), and LF3 (1,722 to 1,833 ft bls). These three zones had hydraulic conductivities ranging from approximately 17 to 40 ft/day, which were greater than the hydraulic conductivities of the intervening, relatively lower-productivity zones within the LFA-upper which ranged from approximately 1 to 6 ft/day. These hydraulic conductivity values are lower overall than those estimated from packer testing at nearby OSF-113 which also showed three higher productivity zones and had an overall range of approximately 1 to 172 ft/day throughout the LFA-upper.

The three high productivity zones correlate with elevated gamma-ray counts and elevated long-normal resistivity readings. Although the OBI log quality was poor through this interval, and the corehole walls were often coated with black material, a representative image of the LF3 flow zone is presented below in **Figure 17**. This image shows the typical large, open vugs that are found in the LFA-upper.

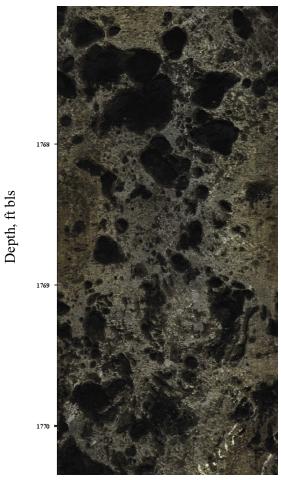


Figure 17. A portion of LF3 with abundant, large vugs and granular texture. This image extends from approximately 1,767 to 1,770 ft bls.

All three flow zones had similar TDS concentrations (ranging from 500 to 650 mg/L). Groundwater samples from the LFA-upper, collected at depths shallower than 1,560 ft bls plotted between Frazee's water type FW-IV, whereas LFA-upper samples collected from depths greater than 1,560 ft bls plotted within the connate water category (Frazee 1982), indicating some degree of ionic heterogeneity between the high flow zones.

## GLAUCIpu (1,833 to 2,000 ft bls)

Following the ECFTX model mapping protocol (CFWI Hydrologic Analysis Team 2016), the base of the LFA-upper should coincide with the base of the last productive zone above the natural gamma log marker for the GLAUClpu. As described in the model documentation report for the ECFTX model (CFWI Hydrologic Analysis Team 2020), Duncan et al. (1994) first noted a distinctive gamma log signature from an interbedded series of wackestone and dolostone near the top of the Oldsmar Formation. They associated the gamma signature with the presence of glauconite, clay, and collophane accessory minerals within that rock assemblage, and made use of it to correlate the wells across their study area in Brevard and Indian River counties. Duncan et al. (1994) referred to the gamma signature as the "glauconitic zone marker," and this name has remained, despite the marker being identifiable in numerous wells where no glauconite was observed. At Sumica, glauconite was first observed at a depth of 1,770 ft bls and last observed at a depth of approximately 1,988 ft bls. A zone of elevated gamma-ray activity and relatively lower long-normal resistivity readings was recorded between depths of 1,872 and 1,940 ft bls. This gamma-ray log signature matches the gamma signature of the GLAUClpu elsewhere in the CFWI region, and the most easily correlated point in the gamma signature is the large natural gamma spike recorded on the geophysical logs at a depth of 1,883 ft bls. Because the natural gamma log marker for the GLAUClpu was identified at a depth of 1,883 ft bls, the base of the LFA-upper was placed at 1,833 ft bls, at the base of LF3, close to the bottom of the last productive packer test (test 51) as discussed below.

Below 1,833 ft bls, packer tests 52 through 56 had hydraulic conductivities that averaged approximately 3 ft/day. However, these GLAUClpu packer test hydraulic conductivities were not accurate because the water levels drew down to the pump intake causing the pump to be turned off shortly after the pumping had started (steady state drawdown had not been achieved), or in the case of test 56 at the bottom of the corehole, the packer was leaking or had other hydraulic issues. This information is indicative of a relatively unproductive unit when compared to the packer test data from the overlying LFA-upper, which were performed at the same pumping rate or higher pumping rate than the tests performed in the GLAUClpu.

The top of the GLAUClpu coincides with the bottom of LF3 at 1,833 ft bls. The base of the GLAUClpu was below the depth of investigation. From the top of the unit to a depth of approximately 1,871 ft bls, the unit was composed predominantly of pale yellowish brown dolostone, followed by a sequence of interbedded clay and wackestone beds to 1,875 ft bls, which in turn were underlain by interbedded clayey wackestone, mudstone and packstone.

#### SITE DATA

# **Standard Penetration Testing and Soil Sieving**

SPT sampling methods provide information on the penetration resistance of the soil being sampled as well as representative soil samples for mechanical sieve analyses or other physical properties tests. At the Sumica site, SPT sampling methods were used to collect sediment samples and accompanying blow count data. Refer to **Appendix G** for the complete list of analytical methods used, their limitations, the soil gradation distribution curves, and the complete list of hydraulic conductivities calculated for each sample.

The boring for POS-21 was previously installed as part of a wetlands investigation at the Sumica site and was sampled using SPT methods from 7 to 33 ft bls. During the FAS investigation that is the subject of this report, SPT samples were collected at 5-foot depth intervals from the borehole for SUMICAN-PW between depths of 34 and 85 ft bls. The sieve analyses data from these two borings were combined and used to characterize the SAS sediments at the site. All the sieved samples were coarse-grained soils (refer to **Appendix G**), with most of the samples falling into the poorly graded sand with clay (SP-SC) and poorly graded sand (SP) categories. Only one sample contained more than 20% fines (sample from 17 to 19 ft bls). This sample was classified as a clayey sand (SC). Due to sample acquisition issues, no data are available from the interval of 31 to 33 ft bls. As shown in **Appendix G**, the range of mean hydraulic conductivities of the tested sediments from the SAS ranged from 14 to 46 ft/day, based on the results of the sieve analyses.

# **Packer Testing**

Fifty-six single packer tests were completed within the continuously cored portions of the exploratory coreholes for POF-31 and POF-32. The packer tests were conducted using a wireline packer assembly, and submersible pump to obtain data for calculation of the hydraulic conductivity of each 30-foot-long packer test interval, to collect representative groundwater samples for laboratory analysis, and to collect recovery water levels that are representative of each tested interval.

**Figure 18** illustrates the setup used for POF-31 and POF-32 packer testing. Generally, after every 30 ft of coring was completed, the drill casing was pulled up from the maximum cored depth to the base of the previous packer test interval to expose the test interval. Test 56 was the only test with a tested interval longer than 30 ft. Test 56 tested a 40-foot-long interval from 1,960 to 2,000 ft bls. The intervals from 950 to 960 ft bls and 1,770 to 1,780 ft bls were not tested due to probable voids and concerns that the packer would not be able to seal across these voids. Each packer test interval was then developed using airlifting methods for a minimum of 1 hour to remove rock debris and drilling fluids. After development was complete, the packer assembly was attached to a support cable and lowered into place. A submersible pump was then attached to steel drop pipe and suspended inside the core casing, generally at a depth of 80 to 100 ft bls. The packer assembly was then inflated using compressed nitrogen. The water level in the packed off test interval was allowed to stabilize for approximately 15 minutes before pumping started.

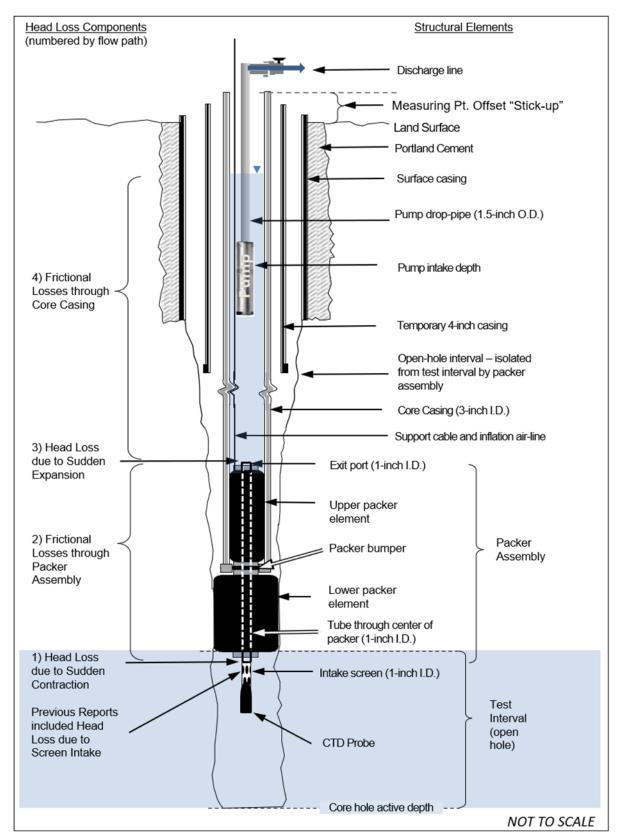


Figure 18. Head loss components, general schematic of the packer assembly, and test interval used during this investigation.

The narrow (approximately 3-inch) inner diameter of the core casing did not provide sufficient space to accommodate installation of a pressure transducer to the drop pipe after the pump, pump wiring, drop-pipe, and packer assembly support cabling were in place. Therefore, depth-to-water measurements were collected manually using an electric depth-to-water tape. Manual depth-to-water measurements were collected by the drill crew at 1-minute intervals for the first 5 minutes of both the drawdown and recovery portions of the test, and at 5-minute intervals thereafter. Exceptions to this process included tests which terminated early due to the pumping rate being too high for the tested interval, resulting in the water level dropping to the pump intake (tests 1, 6, 45, 47, 52, 53, 54, and 55), or test 28 where a lightning storm prevented collection of manual measurements during recovery. The packer assembly was configured so a conductivity-temperature-depth (CTD) probe could be installed within the tested interval, attached to the bottom of the intake screen below the packer (**Figure 18**).

The standard procedure for each packer test was to pump three corehole volumes at the maximum producible rate, typically between 4 and 30 gallons per minute (gpm), while monitoring and recording water quality parameters (temperature, pH, and specific conductance), followed by collection of a groundwater sample for laboratory analyses. The pump was then shut off and water levels were monitored until they stabilized. For test intervals in which low-permeability rock did not allow removal of three corehole volumes of water, pumping continued until both the drawdown and water quality parameters had stabilized, or until water levels neared the pump intake. **Table 2** is a summary of all the packer tests completed during this investigation. Problems encountered during individual packer testing are noted next to specific test numbers in the table and described in the table's notes.

Table 2. Packer test summary at the Sumica site.

Packer Test #	Test Date		Interval bls) Bottom Depth	Pumping Rate (gpm)	Pumping Duration (hh:mm)	Recovery Depth to Water (ft bls)	Comments
1 a,b	6/2/2020	290	320		0:04	3.71	No sample, pumped dry
2	6/3/2020	320	350	18	1:10	2.70	1 /1 1
3	6/3/2020	350	380	32	0:57	2.71	
4	6/4/2020	380	410	32	0:56	2.64	
5	6/5/2020	410	440	8	2:50	1.27	
6°	6/8/2020	440	470	9	0:25		Packer seal broke and test stopped early
7	6/10/2020	470	500	21	1:10	1.91	
8	6/10/2020	500	530	6	1:55	1.60	
9	6/11/2020	530	560	32	0:45	2.21	
10	6/12/2020	560	590	34	1:05	2.37	
11	6/15/2020	590	620	20	1:15	0.90	
12	6/16/2020	620	650	20	1:15	0.09	
13	6/17/2020	650	680	32	0:55	1.00	
14	6/17/2020	680	710	25	1:15	1.00	
15	6/18/2020	710	740	32	1:05	0.96	
16	6/19/2020	740	770	15	1:55	3.17	
17	6/22/2020	770	800	32	0:55	1.30	
18	6/23/2020	800	830	32	1:00	0.67	
19 <sup>d</sup>	6/24/2020	830	860	35	2:26	0.50	
20	6/25/2020	860	890	20	1:40	0.42	
21	6/29/1930	890	920	20	1:45	0.50	

Table 2. Continued.

Packer	T . D .		nterval bls)	Pumping	Pumping	Recovery Depth to	
Test #	Test Date	Top Depth	Bottom Depth	Rate (gpm)	Duration (hh:mm)	Water (ft bls)	Comments
22	6/30/2020	920	950	32	1:20	0.89	
23 <sup>d</sup>	7/16/2020	960	990	32	1:00	1.27	
24 <sup>d</sup>	7/20/2020	990	1,020	32	1:16	1.12	
25	7/21/2020	1,020	1,050	23	1:40	2.00	
26	7/23/2020	1,050	1,080	31	1:15	1.19	
27	7/24/2020	1,080	1,110	32	1:15	1.17	
28e	7/27/2020	1,110	1,140	32	1:25		Lightning storm
29	7/28/2020	1,140	1,170	32	1:30	3.65	
30	7/29/2020	1,170	1,200	29	1:35	4.05	
31	7/30/2020	1,200	1,230	32	1:30	3.74	
32	7/30/2020	1,230	1,260	32	1:30	4.13	
33	8/3/2020	1,260	1,290	12	3:10	2.82	
34	8/4/2020	1,290	1,320	18	2:30	6.92	
35	8/5/2020	1,320	1,350	11	2:05	10.44	
36	8/6/2020	1,350	1,380	17	1:45	10.23	
37	8/10/2020	1,380	1,410	14	1:40	9.96	
38	8/11/2020	1,410	1,440	31	1:20	15.06	
39	8/12/2020	1,440	1,470	31	1:35	14.37	
40	8/13/2020	1,470	1,500	9	0:55	14.69	
41	12/11/2020	1,500	1,530	18	2:10	14.08	
42°	12/14/2020	1,530	1,560	20	2:10	13.95	Possible surge in pumping rate?
43	12/15/2020	1,560	1,590	19	1:45	13.85	
44	12/16/2020	1,590	1,620	31	1:20	13.54	
45 <sup>b,f</sup>	12/17/2020	1,620	1,650	30	0:01	14.54	No sample, pumped dry
46	12/18/2020	1,650	1,680	31	1:25	13.85	
47 <sup>b</sup>	1/4/2021	1,680	1,710	10	0:05	14.80	No sample, pumped dry
48 <sup>d</sup>	1/5/2021	1,710	1,740	31	1:25	14.05	
49 <sup>d</sup>	1/6/2021	1,740	1,770	30	1:50	14.22	
50 <sup>d</sup>	1/7/2021	1,780	1,810	30	1:45	14.09	
51 <sup>d</sup>	1/11/2021	1,810	1,840	30	2:00	14.52	
52 <sup>b,c</sup>	1/12/2021	1,840	1,870	30	0:02	14.87	No sample, pumped dry
53 <sup>b</sup>	1/13/2021	1,870	1,900	25	0:02	15.05	No sample, pumped dry
54 <sup>b</sup>	1/14/2021	1,900	1,930	22	0:01	15.11	No sample, pumped dry
55 <sup>a,b</sup>	1/18/2021	1,930	1,960		0:03	15.49	No sample, pumped dry
56°	1/19/2021	1,960	2,000	14	4:05	14.75	<u> </u>
	t halazz land aue		-				,

 $ft\ bls = feet\ below\ land\ surface;\ gpm = gallons\ per\ minute;\ hh:mm = hours:\ minutes.$ 

Pumping rate noted as 0 gpm.
 Pumping rate was too high for open interval; water level dropped to a point where pump had to be shut off.
 Packer leaking or other hydraulic issue.

d Drawdown calculated from CTD data was within the propagated margin of error (±0.67 ft).

<sup>&</sup>lt;sup>e</sup> Drawdown was overestimated (lightning storm prevented manual measurements).

f No depth-to-water measurements were collected during pumping.

### **HYDRAULIC ANALYSES**

An Idronaut brand CTD probe was installed directly below the packer assembly, within the open borehole test interval (**Figure 18**), so its measurements were not subject to the effects of well losses across the packer testing assembly. Because of the probe's location in the borehole, the Idronaut CTD data were assumed in previous SFMWD reports (Richardson et al. 2020a,b, Coonts 2021) to be the best representation of the *in situ* drawdowns in the formation, unaffected by pipe losses. The Idronaut CTD probe uses a highly sensitive pressure sensor with an accuracy of 0.01% and a precision of up to 0.002% of its full pressure range. To operate across the complete depth of the FAS, a large pressure range is required. The Idronaut CTD probe was outfitted with a 100-bar (1,450.38 pounds per square inch) pressure transducer. Given the groundwater density encountered in the borehole, this equates to a rated accuracy of  $\pm 0.335$  ft. The manual depth-towater readings, by contrast, have an expected accuracy of  $\pm 0.01$  ft. However, the Idronaut CTD probe was installed and operated correctly in only 62% of the packer tests. The manual depth-to-water readings, by contrast, were collected during every packer test.

To estimate the horizontal hydraulic conductivity for all the packer tests, head loss components of the measured drawdown need to be accounted for, including those caused by friction as water travels through the packer assembly and core casing, and pressure losses due to a sudden expansion or reduction of water flowing into or out of the packer testing assembly. The four components of total head loss accounted for in the analyses are shown in **Figure 18** and listed below in order of the water's flow path through the packer testing assembly and borehole:

- 1. Head losses due to the sudden contraction of the system as pumped water travels from the test interval (open hole) into the packer assembly (component 1 in **Figure 18**).
- 2. Frictional losses as the pumped water flows through the packer assembly (component 2 in Figure 18).
- 3. Head losses due to the sudden expansion of the system as pumped water exits the top of the narrow-diameter packer assembly and flows into the larger-diameter core casing (component 3 in Figure 18).
- 4. Frictional losses due to the pumped water flowing through the core casing (component 4 in Figure 18).

Previous CFWI related reports produced by the District (see for example Richardson et al. 2020a,b, Coonts 2021) included frictional losses (components 2 and 4), and an estimate of head loss due to the intake screen (**Figure 18**) but did not include head losses due to sudden expansion or sudden contraction (components 1 and 3). The revised methodology presented and used here includes the head losses due to sudden expansion and contraction.

# **Total Head Loss Components**

# Head Losses Due to Sudden Contraction (1)

When water flows from a large-diameter pipe into an abruptly smaller-diameter pipe, there is an increase in velocity and a loss of energy due to turbulent eddies which form along the inside edge of the large-diameter pipe adjacent to where it meets the smaller-diameter pipe (**Figure 19**). In addition, an hourglass-shaped constriction of flow, called the *vena contracta*, forms within the smaller-diameter pipe. The *vena contracta*'s diameter is smaller than the diameter of the small-diameter pipe. The turbulent eddies and expansion after the *vena contracta* cause a loss of energy/head loss.

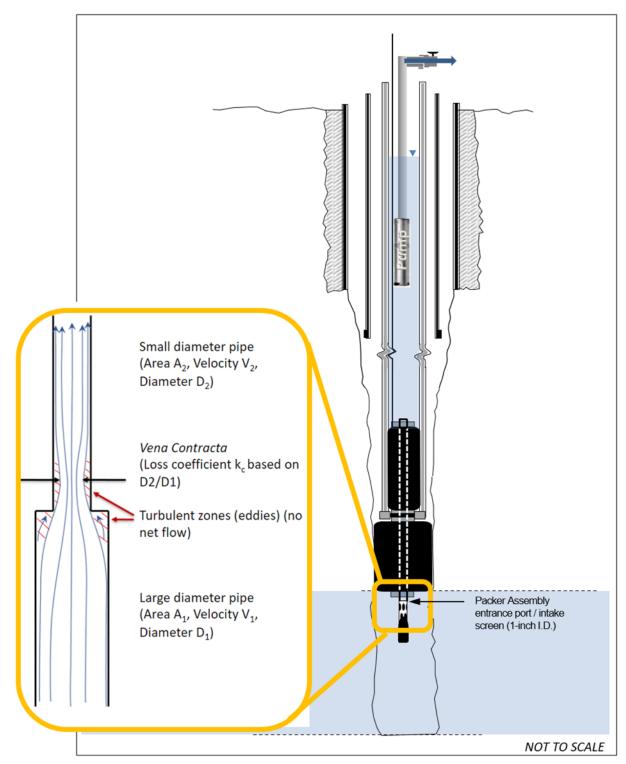


Figure 19. Sudden contraction.

The head loss equation for sudden contraction is (Finnemore and Franzini 2002, p. 306, eq. 8.75):

$$h_{ft} = k_c * \frac{V_2^2}{2 \cdot g}$$
 Equation (1)

Where:

 $h_{ft}$  = head loss (ft of water)

 $k_c$  = loss coefficient for a sudden contraction (dimensionless) (taken as 0.39 for this packer assembly setup)

 $V_2$  = flow velocity through smaller-diameter pipe (ft/sec)

 $g = gravitational acceleration (32.2 ft/s^2)$ 

## Frictional Losses Through Packer Assembly (2) and Core Casing (4)

There are multiple methods for calculating head losses due to pipe friction including those developed from theory (such as the Darcy-Weisbach equation which is derived primarily from dimensional analysis), and empirical calculations based on observations (such as the Hazen-Williams equation). Although the Hazen-Williams equation is easier to calculate, in theory it is only applicable to the flow of water through pipes with inside diameters greater than 2 inches with water velocities less than 10 ft per second (Finnemore and Franzini 2002, p. 299). Because of these pipe diameter and velocity restrictions, the Hazen-Williams equation is only applicable for calculation of the frictional losses through the core casing (**Table 3**). However, for comparison purposes, both the Hazen-Williams and the Darcy-Weisbach equations were used to calculate head losses through both the packer assembly and core casing.

Table 3. Pipe information for well loss calculations.

Pipe Section	Inside Diameter (inches)	Length (feet)	Roughness Coefficient <sup>a</sup>		
Core Casing	3.1	Top of Test Interval – Depth to Water	130 <sup>b</sup>		
Packer Assembly	1.1	9.0	130 <sup>b</sup>		

<sup>&</sup>lt;sup>a</sup> Hazen-Williams roughness coefficient listed in Finnemore and Franzini 2002, p. 299.

The empirical Hazen-Williams equation (using Finnemore and Franzini 2002, p. 300, eq. 8.67 substituted into eq. 8.65) to calculate the pressure loss due to friction is as follows:

$$h_{ft} = \frac{4.727*L*Q^{1.852}}{C_{HW}^{1.852}*D^{4.87}}$$
 Equation (2)

Where:

 $h_{ff}$  = head loss (ft of water)

L = pipe length (ft)

 $Q = discharge rate (ft^3/sec)$ 

C<sub>HW</sub> = Hazen-Williams roughness coefficient

D = inside pipe diameter (ft)

<sup>&</sup>lt;sup>b</sup> A Hazen-Williams roughness coefficient of 140 was found to result in the closest match with the Darcy-Weisbach results.

For comparison against the empirically derived (and theoretically limited) Hazen-Williams frictional head losses, the dimensional analysis-based Darcy-Weisbach equation (Finnemore and Franzini 2002, p. 300, eq. 8.66 substituted into eq. 8.65) was used to calculate the frictional pressure loss:

$$h_{ff} = \frac{8 * f * L * Q^2}{\pi^2 * g * D^5}$$
 Equation (3)

Where:

 $h_{\rm ft}$  = head loss (ft of water)

f = Darcy friction factor (dimensionless)

L = pipe length (ft)

 $Q = discharge rate (ft^3/sec)$ 

 $g = acceleration due to gravity (32.2 ft/sec^2)$ 

D = inside pipe diameter (ft)

The Darcy-Weisbach equation uses a Darcy friction factor (*f*), calculated using the Swamee-Jain equation (Swamee and Jain 1976):

$$f = \frac{0.25}{[\log(\frac{\varepsilon}{3.7d} + \frac{5.74}{R^{0.9}})]^2}$$
 Equation (4)

Where:

f = Darcy friction factor (dimensionless)

R = Reynolds number (dimensionless)

 $\varepsilon$  = absolute roughness (inches, taken as 0.006 inches for existing steel)

d = inside diameter of pipe (inches)

As shown in Equation 4, the Darcy friction factor depends on a Reynolds number (R), calculated (Finnemore and Franzini 2002, p. 256, eq. 8.11) using the following:

$$\mathbf{R} = \frac{D * V}{v}$$
 Equation (5)

Where:

R =Reynolds number (dimensionless)

D = pipe diameter (ft)

V = velocity (ft/sec)

 $v = \text{kinematic viscosity (taken as } 0.00001 \text{ ft}^2/\text{sec for the specific conductivities measured during packer testing at this site)}$ 

A total of 56 packer tests were completed during the wireline coring of the POF-31 and POF-32 coreholes. The frictional losses through the packer assembly calculated using the empirical Hazen-Williams equation resulted in an average difference of approximately 23% when compared to the dimensional analysis-based Darcy-Weisbach equation.

For the frictional losses through the core casing, the difference was approximately 3% (**Table 4**). These results confirm the limitations of the Hazen-Williams equations for the small inside diameter (1 inch) packer assembly discharge pipe. Therefore, this report uses the Darcy-Weisbach equation results for the frictional head losses.

Table 4. Comparison of Hazen-Williams and Darcy-Weisbach results from packer tests at the Sumica site.

Packer	Disalassa.	Head Loss	Across Packer	Assembly (ft)	Head Loss Across Core Casing (ft)				
Test#	Discharge Rate (gpm)	Hazen-	Darcy-	% Difference	Hazen-	Darcy-	% Difference		
	Rate (gpin)	Williams	Weisbach	76 Difference	Williams	Weisbach	76 Difference		
1 <sup>a,b</sup>									
2	18.0	1.52	1.86	20.1	0.35	0.34	2.9		
3	32.0	4.40	5.75	26.6	1.11	1.08	2.7		
4	32.0	4.40	5.75	26.6	1.20	1.17	2.5		
5	8.2	0.35	0.41	15.8	0.10	0.10	0.0		
6°	9.3	0.45	0.52	14.4	0.14	0.14	0.0		
7	20.7	1.97	2.44	21.3	0.66	0.64	3.1		
8	6.0	0.20	0.22	9.5	0.07	0.07	0.0		
9	32.0	4.40	5.75	26.6	1.68	1.63	3.0		
10	33.7	4.85	6.36	26.9	1.95	1.90	2.6		
11	20.0	1.84	2.28	21.4	0.78	0.76	2.6		
12	20.0	1.84	2.28	21.4	0.82	0.79	3.7		
13	31.6	4.30	5.61	26.4	2.01	1.95	3.0		
14	25.0	2.79	3.54	23.7	1.36	1.32	3.0		
15	31.6	4.30	5.61	26.4	2.19	2.13	2.8		
16	15.0	1.08	1.30	18.5	0.58	0.56	3.5		
17	31.5	4.28	5.57	26.2	2.36	2.30	2.6		
18	31.5	4.28	5.57	26.2	2.46	2.39	2.9		
19 <sup>d</sup>	35.0	5.20	6.86	27.5	3.10	3.02	2.6		
20	20.0	1.84	2.28	21.4	1.14	1.10	3.6		
21	20.0	1.84	2.28	21.4	1.18	1.14	3.4		
22	31.5	4.28	5.57	26.2	2.82	2.75	2.5		
23 <sup>d</sup>	31.5	4.28	5.57	26.2	2.95	2.87	2.7		
24 <sup>d</sup>	31.5	4.28	5.57	26.2	3.04	2.95	3.0		
25	23.0	2.39	3.00	22.6	1.75	1.69	3.5		
26	31.0	4.15	5.40	26.2	3.13	3.04	2.9		
27	32.0	4.40	5.75	26.6	3.41	3.32	2.7		
28e	32.0	4.40	5.75	26.6	3.50	3.40	2.9		
29	32.0	4.40	5.75	26.6	3.60	3.50	2.8		
30	28.5	3.55	4.58	25.3	2.98	2.89	3.1		
31	31.5	4.28	5.57	26.2	3.68	3.57	3.0		
32	31.5	4.28	5.57	26.2	3.77	3.66	3.0		
33	12.0	0.72	0.85	16.6	0.65	0.63	3.1		
34	18.0	1.52	1.86	20.1	1.40	1.35	3.6		
35	11.0	0.61	0.71	15.2	0.57	0.56	1.8		
36	17.0	1.36	1.66	19.9	1.31	1.27	3.1		
37	14.4	1.00	1.20	18.2	0.99	0.96	3.1		
38	30.8	4.10	5.33	26.1	4.11	3.99	3.0		
39	31.0	4.15	5.40	26.2	4.25	4.13	2.9		
40	8.8	0.40	0.46	14.0	0.42	0.42	0.0		
41	17.6	1.46	1.78	19.8	1.55	1.50	3.3		
42°	20.0	1.84	2.28	21.4	2.00	1.94	3.0		

Table 4. Continued.

Packer	Discharge	Head Loss	Across Packer	Assembly (ft)	Head L	oss Across Core	Casing (ft)
Test#	Rate (gpm)	Hazen- Williams	Darcy- Weisbach	% Difference	Hazen- Williams	Darcy- Weisbach	% Difference
43	19.0	1.68	2.07	20.8	1.86	1.80	3.3
44	30.7	4.08	5.30	26.0	4.61	4.48	2.9
45 <sup>b,f</sup>	30.0	3.91	5.06	25.6	4.50	4.37	2.9
46	30.8	4.10	5.33	26.1	4.81	4.67	3.0
47 <sup>b</sup>	10.0	0.51	0.59	14.5	0.61	0.60	1.7
48 <sup>d</sup>	30.9	4.13	5.36	25.9	5.02	4.87	3.0
49 <sup>d</sup>	30.0	3.91	3.91 5.06		4.83	4.69	2.9
$50^{\rm d}$	30.1	3.93	5.09	25.7	4.98	4.83	3.1
51 <sup>d</sup>	30.0	3.91	5.06	25.6	5.03	4.88	3.0
52 <sup>b,c</sup>	30.0	3.91	5.06	25.6	5.11	4.96	3.0
53 <sup>b</sup>	25.0	2.79	3.54	23.7	3.71	3.59	3.3
54 <sup>b</sup>	22.0	2.20	2.75	22.2	2.97	2.87	3.4
55 <sup>a,b</sup>							
56°	14.0	0.95	1.14	18.2	1.33	1.29	3.1
		Average Perce	ent Difference	22.9			2.7

ft = feet; gpm = gallons per minute.

Pumping rate noted as 0 gpm.

Pumping rate noted as 0 gpm.

Pumping rate too high for open interval, water level dropped to a point where pump had to be shut off.

Packer leaking or other hydraulic issue.

Drawdown calculated from CTD data was within the propagated margin of error (±0.67 ft).

<sup>&</sup>lt;sup>e</sup> Drawdown was overestimated (lightning storm prevented manual measurements).

f No depth-to-water measurements were collected during pumping.

# Head Losses Due to Sudden Expansion (3)

When water is pumped from a small-diameter pipe into an abruptly larger-diameter pipe, turbulent eddies form at the sudden enlargement of the pipe (**Figure 20**). The formation of eddies at this enlargement causes a loss of energy in the form of heat, which is dispersed to the surroundings.

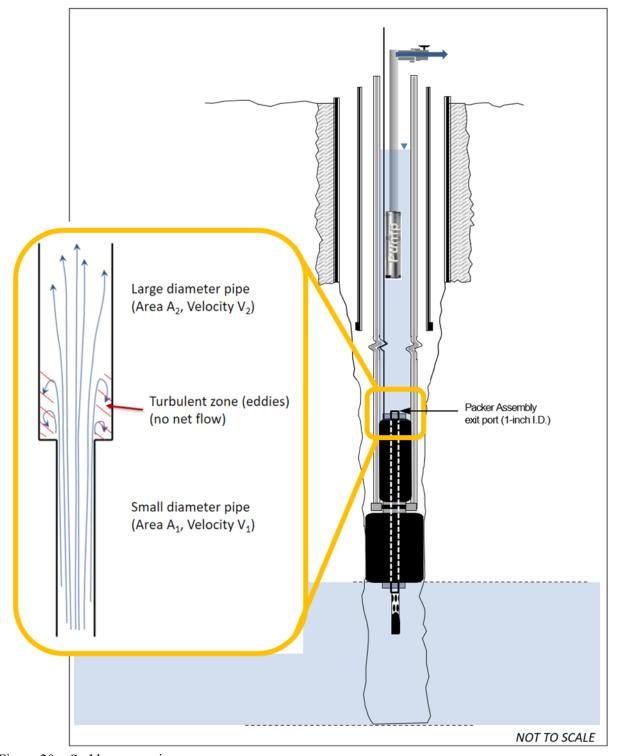


Figure 20. Sudden expansion.

The head loss equation for sudden expansion is (Finnemore and Franzini 2002, p. 309, eq. 8.76):

$$h_{fi} = \frac{(V_1 - V_2)^2}{2 * g}$$
 Equation (6)

Where:

 $h_{ft}$  = head loss (ft of water)

 $V_1$  = flow velocity through smaller-diameter pipe (ft/s)

 $V_2$  = flow velocity through larger-diameter pipe (ft/s)

 $g = gravitational acceleration (32.2 ft/s^2)$ 

#### Head Losses Due to Screen Intake

Previous efforts by District hydrogeologists to quantify head losses from packer testing (Richardson et al. 2020 a,b, Coonts 2021) included a head loss factor for the intake screen located below the packer assembly (to which the Idronaut CTD probe was attached). A method to empirically estimate head losses due to the intake screen as a function of pumping rate was developed during the initial deployment of the intake screen and Idronaut CTD probe (Richardson et al. 2020b). The development of this method included a set of step tests, one with the intake screen installed and one without the intake screen, which were conducted on November 15, 2017 during packer testing at OSF-112. A third-order polynomial trend line was fitted to the resultant head difference between the two tests versus the pumping rate. However, attempts to reproduce the results on December 15 and 16, 2021 and March 7 and 8, 2022 during packer testing at OSF-114 were unsuccessful. Because of this, the improvements to the packer test head loss calculations and analyses methods were made (including calculation of the head losses due to sudden expansion and sudden contraction) as described in this report. The previously used method to determine the head losses due to the screen intake is not utilized in this report.

#### **Corrected Drawdown**

For the Sumica packer tests, the corrected drawdown was calculated as the raw drawdown minus the head loss components:

$$s_{corr} = s_{raw} - h_c - h_{pa} - h_e - h_{cc}$$
 Equation (7)

Where:

 $S_{corr}$  = corrected drawdown (ft)

 $S_{raw} = raw drawdown (ft)$ 

 $h_c$  = head loss due to sudden contraction (ft)

h<sub>na</sub> = frictional losses through packer assembly (calculated using Darcy-Weisbach equation) (ft)

 $h_e$  = head loss due to sudden expansion (ft)

h<sub>cc</sub> = frictional losses through core casing (calculated using Darcy-Weisbach equation) (ft)

**Table 5** includes the head loss components used to calculate the corrected drawdown along with the drawdown calculated from the CTD data—which in theory should be more accurate given the position of the CTD probe below the packer assembly (**Figure 18**). The corrected drawdown appears to be a reasonable substitute for tests where the pumping rate was less than approximately 30 gpm. However, for packer tests where the pumping rate was greater than 30 gpm, the relationship falls apart (**Figure 21**). This might indicate that the turbulence created when pumping near or above 30 gpm is not all being accounted for by the head loss calculations. Alternatively, it is possible that the turbulence induced at these higher pumping rates affected the pressure measured by the CTD probe as turbulent water flowed into the packer assembly, resulting in lower pressures being measured by the probe.

Table 5. Packer testing drawdown summary at the Sumica site.

		Raw drawdown		Head Loss C	Components		Corrected	Drawdown	%
	Discharge	calculated from		(2) Friction loss across	(3) Head loss	(4) Friction loss across	drawdown (raw	calculated from	
Packer	Rate	manual		packer assembly (Darcy-	due to sudden	core casing (Darcy-	calculated head	CTD probe (ft)	of
Test #	(gpm)	measurements	contraction	Weisbach equation)	expansion	Weisbach equation)	losses)	(for comparison)	drawdown
1 a,b		122.29							
2	18.0	77.84	0.22	1.86	0.44	0.34	74.98		
3	32.0	36.79	0.71	5.75	1.39	1.08	27.86		
4	32.0	34.71	0.71	5.75	1.39	1.17	25.69		
5	8.2	79.73	0.05	0.41	0.09	0.10	79.08		
6°	9.3	89.25	0.06	0.52	0.12	0.14	88.41	87.66	0.9
7	20.7	75.09	0.30	2.44	0.58	0.64	71.13		
8	6.0	64.87	0.02	0.22	0.05	0.07	64.51	63.10	2.2
9	32.0	29.14	0.71	5.75	1.39	1.63	19.66		
10	33.7	28.88	0.78	6.36	1.54	1.90	18.30	16.26	11.8
11	20.0	74.95	0.28	2.28	0.54	0.76	71.09		
12	20.0	43.18	0.28	2.28	0.54	0.79	39.29		
13	31.6	40.25	0.69	5.61	1.35	1.95	30.65		
14	25.0	57.86	0.43	3.54	0.85	1.32	51.72		
15	31.6	45.27	0.69	5.61	1.35	2.13	35.49		
16	15.0	65.69	0.16	1.30	0.30	0.56	63.37		
17	31.5	36.30	0.69	5.57	1.34	2.30	26.40	22.31	16.8
18	31.5	21.05	0.69	5.57	1.34	2.39	11.06	7.20	42.3
19 <sup>d</sup>	35.0	15.03	0.85	6.86	1.66	3.02	2.64	0.60	
20	20.0	68.49	0.28	2.28	0.54	1.10	64.29	61.23	4.9
21	20.0	49.50	0.28	2.28	0.54	1.14	45.26	43.17	4.7
22	31.5	25.51	0.69	5.57	1.34	2.75	15.16	10.60	35.4
23 <sup>d</sup>	31.5	15.03	0.69	5.57	1.34	2.87	4.56	0.54	
24 <sup>d</sup>	31.5	15.54	0.69	5.57	1.34	2.95	4.99	0.54	
25	23.0	65.80	0.37	3.00	0.72	1.69	60.02	57.35	4.5

Table 5. Continued.

		Raw drawdown		Head Loss C	Components		Corrected	Drawdown	%
	Discharge	calculated from	(1) Head loss	(2) Friction loss across	(3) Head loss	(4) Friction loss across	drawdown (raw	calculated from	
Packer	Rate			packer assembly (Darcy-			calculated head	CTD probe (ft)	of
Test #	(gpm)	measurements	contraction	Weisbach equation)	expansion	Weisbach equation)	losses)	(for comparison)	drawdown
26	31.0	20.46	0.66	5.40	1.30	3.04	10.06	1.61	144.8
27	32.0	32.87	0.71	5.75	1.39	3.32	21.70	12.55	53.4
28e	32.0	29.38	0.71	5.75	1.39	3.40	18.13	7.16	99.9
29	32.0	35.23	0.71	5.75	1.39	3.50	23.88		
30	28.5	68.04	0.56	4.58	1.10	2.89	58.91		
31	31.5	37.73	0.69	5.57	1.34	3.57	26.56		
32	31.5	34.95	0.69	5.57	1.34	3.66	23.69		
33	12.0	67.62	0.10	0.85	0.19	0.63	65.85		
34	18.0	46.97	0.22	1.86	0.44	1.35	43.10		
35	11.0	59.59	0.08	0.71	0.16	0.56	58.08	59.00	1.6
36	17.0	55.88	0.20	1.66	0.39	1.27	52.36	48.95	6.7
37	14.4	74.20	0.14	1.20	0.28	0.96	71.62	74.39	3.8
38	30.8	26.69	0.66	5.33	1.28	3.99	15.43	7.76	66.1
39	31.0	21.61	0.66	5.40	1.30	4.13	10.12	2.36	124.4
40	8.8	78.31	0.05	0.46	0.10	0.42	77.28	77.46	0.2
41	17.6	70.92	0.21	1.78	0.42	1.50	67.01	64.72	3.5
42°	20.0	35.58	0.28	2.28	0.54	1.94	30.54	27.18	11.6
43	19.0	64.42	0.25	2.07	0.49	1.80	59.81	57.14	4.6
44	30.7	18.31	0.65	5.30	1.28	4.48	6.60	2.91	77.6
45 <sup>b,f</sup>	30.0		0.62	5.06	1.22	4.37			
46	30.8	23.55	0.66	5.33	1.28	4.67	11.61	3.00	117.9
47 <sup>b</sup>	10.0	90.20	0.07	0.59	0.14	0.60	88.80	85.90	3.3
48 <sup>d</sup>	30.9	20.95	0.66	5.36	1.29	4.87	8.77	0.23	
49 <sup>d</sup>	30.0	21.78	0.62	5.06	1.22	4.69	10.19	0.45	
50 <sup>d</sup>	30.1	21.61	0.63	5.09	1.23	4.83	9.83	0.17	

Table 5. Continued.

			Drawdown – Measured and Calculated from the Surface (ft)												
		Raw drawdown		Head Loss C	Components		Corrected	Drawdown	%						
	Discharge	calculated from	(1) Head loss	(2) Friction loss across	(3) Head loss	(4) Friction loss across		calculated from							
Packer	Rate	manual	due to sudden	packer assembly (Darcy-	due to sudden	core casing (Darcy-		CTD probe (ft)							
Test #	(gpm)	measurements	contraction	Weisbach equation)	expansion	Weisbach equation)	losses)	(for comparison)	drawdown						
51 <sup>d</sup>	30.0	19.86	0.62	5.06	1.22	4.88	8.08								
52 <sup>b,c</sup>	30.0	90.13	0.62	5.06	1.22	4.96	78.27	75.00	4.3						
53 <sup>b</sup>	25.0	89.95	0.43	3.54	0.85	3.59	81.54	83.23	2.1						
54 <sup>b</sup>	22.0	89.89	0.33	2.75	0.66	2.87	83.28	60.51	31.7						
55 <sup>a,b</sup>		89.51		-					1						
56°	14.0	25.82	0.14	1.14	0.27	1.29	22.98	22.18	3.5						

ft = feet; gpm = gallons per minute.

a Pumping rate noted as 0 gpm.

b Pumping rate too high for open interval, water level dropped to a point where pump had to be shut off.

c Packer leaking or other hydraulic issue.

d Drawdown calculated from CTD data was within the propagated margin of error (±0.67 ft).

c Drawdown was overestimated (lightning storm prevented manual measurements).

f No depth-to-water measurements were collected during pumping.

# **Hydraulic Parameters**

Calculated total drawdown for the 56 packer tests at the Sumica site ranged from 0 to 88.21 ft, depending on the pumping rate and depth of the tested interval. The pumping rates varied from 6 gpm to at least 35 gpm, with two tests having pumping rates so great (relative to the permeability of the test zone) that the water level dropped to the pump before a pumping rate could be measured. The packer tests were conducted at depths ranging from 290 to 1,960 ft bls.

Previous SFWMD reports calculated hydraulic conductivity based on transmissivity, which was solved using the Cooper-Jacob method (converted to ft/day), divided by the thickness of the tested interval (Driscoll 1986, p. 219, eq. 9.6 rearranged):

$$K = \left(\frac{\left(\frac{Q}{s}\right) * 264 * \log\left(\frac{0.3 * T * t}{r^2 * S}\right)}{b}\right)$$
 Equation (8)

Where:

K = hydraulic conductivity (ft/day)

Q = pumping rate (gpm)

s = drawdown (ft)

T = transmissivity in the log function is assumed "typical" and equal to 30,000 gallons per day/ft

t = duration of pumping (day)

S = storage coefficient of a confined aquifer, taken as  $1 \times 10^{-3}$ 

r = radius of the tested interval (ft)

b = thickness of the tested interval (ft)

#### **Results and Discussion**

A summary of the raw drawdown, head loss corrected drawdown, and the hydraulic conductivity calculated for each packer test using both the corrected drawdown and the CTD probe data are presented in **Table 6**. Hydraulic conductivity varied by three orders of magnitude at the Sumica site, from approximately 1 ft/day in OCAPlpz (tests 5, 6, and 8) to greater than 117 ft/day in the fractured dolostone of the APPZ (test 19). A plot of the resultant transmissivities in relation to the hydrostratigraphic units is presented in **Figure 22**. Limitations of the packer testing hydraulic parameter calculations include the following:

- Tests which lasted less than 1 hour had not reached steady state drawdown; therefore, any calculations of hydraulic conductivity (calculated using CTD data or the calculated head losses) would be overestimated. At the Sumica site this included tests 1, 6, 45, 47, 52, 53, 54, and 55. Therefore, any hydraulic conductivity calculated from these tests should not be relied upon to be accurate.
- Hydraulic conductivity could not be calculated (with any degree of certainty) from packer tests where the drawdown was within the CTD's propagated accuracy (±0.67 ft total). This included tests 19, 23, 24, 48, 49, and 50. Therefore only the calculation based on the drawdown corrected for head losses could be used for these tests.
- The velocity component of total head (v²/2g) was not accounted for when calculating the head loss from the CTD probe. In highly productive zones, where the drawdown was limited and the velocity was large, this accounted for a relatively large component of total head. Therefore, it is likely that hydraulic conductivities calculated from the CTD probe would be overestimated.

The head loss components described in this section adhere to Bernoulli's theorem. Bernoulli's theorem essentially states that the total energy of a flowing fluid remains constant and is comprised of energy associated with the fluid pressure, the kinetic energy of the fluid, and the potential energy component (elevation head).

The head form of the Bernoulli equation is defined as follows:

$$h = \frac{P_1}{\rho g} + \frac{v_1^2}{2g} + h_1$$
 Equation (9)

Where:

h = total head (ft of water) h<sub>1</sub> = pressure head (ft above some datum) P = pressure (pounds per square inch) V<sub>1</sub> = flow velocity (ft/s)  $\rho$  = density (lb/ft<sup>3</sup>) g = gravitational acceleration (32.2 ft/s<sup>2</sup>)

The first term  $(\frac{P_1}{\rho g})$  in Equation 9 is the pressure component of head (pressure head). The second term  $(\frac{v_1^2}{2g})$  is the kinetic energy component of head (velocity head). The third term  $(h_1)$  is the potential energy component of head (elevation head). Because the elevation change across the packer intake screen is minimal, this term can reasonably be ignored.

The CTD probe only measures pressure. The velocity head is not measured by the CTD probe. Therefore, data from the CTD probe can only account for the pressure head (term 1 in Equation 9). In previous investigations by the SWFMD (Richardson et al. 2020a,b, Coonts 2021), pressure changes induced by pumping were understood to be equivalent to total head change (drawdown). For relatively unproductive zones, where the change in pressure is relatively large and the velocity head is relatively small, this is likely an acceptable assumption.

A pumping rate of 30 gpm equates to a velocity head of approximately 0.15 ft in a 4-inch-diameter corehole. For example, if there are two hypothetical packer tests that are both pumped at 30 gpm, the velocity head would be 0.15 ft for both packer tests. If the first packer test resulted in a drawdown of 1 foot, then the velocity head would be 0.15 ft, or 15% of the total drawdown. If the second hypothetical packer test resulted in a drawdown of 20 ft, then the velocity head would only be 0.8% of the total drawdown. Ignoring the velocity head for the hypothetical packer test with 20 ft of drawdown is less consequential to the final hydraulic conductivity calculation than if the velocity head were ignored for the packer test with a small total drawdown. This means there is a larger uncertainty in the small-drawdown packer tests because the velocity head is a larger component of the total head.

In addition, during this investigation, the CTD probe was installed within the turbulent zone that forms during pumping at the packer assembly intake screen (**Figure 16**). In general, higher packer test pumping rates result in larger amounts of turbulence than lower pumping rate tests. This turbulence results in a reduction in pressure as measured by the CTD probe.

High pumping rates (with relatively high velocity heads and high turbulence) in highly productivity zones (small pressure change) invalidate the assumption that CTD-measured pressure change data are the best representation of the *in situ* drawdowns in the formation unaffected by pipe losses.

The relationship between the CTD-measured pressure change based drawdown and the corrected drawdown (from the calculated head losses) indicates that the corrected drawdown is reasonable for those packer tests where the pumping rate was less than approximately 30 gpm and the corrected drawdown (from the calculated head losses) was more than 15 ft. However, for packer tests where the pumping rate was greater than or equal to 30 gpm and the corrected drawdown was more than 15 ft, the relationship falls apart. **Figure 21** is a plot of packer test pumping rates versus the drawdown relative percent difference values presented in **Table 5**. The orange points in **Figure 21** are those packer tests that had less than 15 ft of corrected drawdown and displayed a much higher relative percent difference between the drawdown measured by the CTD probe and the corrected drawdown values. This may indicate that the turbulence created when pumping at or above approximately 30 gpm is not all being accounted for by the head loss calculations. An alternative explanation is that the CTD probe is affected by the turbulent flow, and the drawdown calculated from the CTD-measured pressure change is not accounting for the velocity head. Therefore, the CTD data might not represent the best *in situ* drawdown at these higher pumping rates (at or above 30 gpm) in highly transmissive zones.

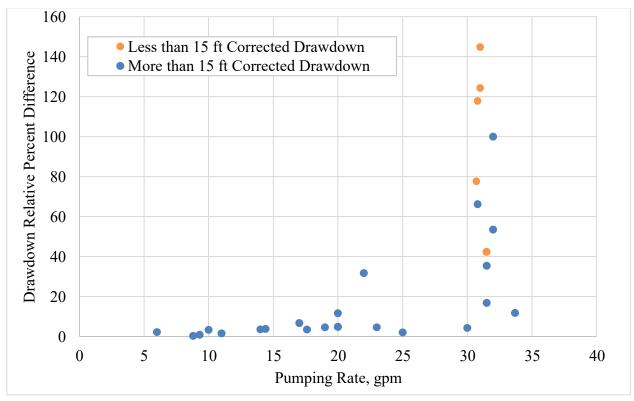


Figure 21. Packer test drawdown relative percent differences versus packer test pumping rates at the Sumica site.

Because of the turbulence-related issues with the CTD pressure measurements, and the fact that the CTD probe could not account for the velocity head, the hydraulic conductivities calculated using the head loss corrected drawdowns and the Cooper-Jacob method are considered the most representative packer test derived hydraulic conductivities. For completeness, the hydraulic conductivities calculated from both the CTD probe pressure data and the corrected manual drawdown data are presented in **Table 6**. **Figure 22** is a graphical representation of the packer test hydraulic conductivities calculated using the head loss corrected drawdown data.

Table 6. Summary of results from the hydraulic analyses of POF-31/POF-32 packer tests.

Packer	Hydrostratigraphic	Test I	nterval	Based on N	Ianual Measu	rements	Based on CTD Probe Data		
Test #	Unit	Top Depth (ft bls)	Bottom Depth (ft bls)	Raw Drawdown (ft)	Corrected Drawdown (ft)*	K (ft/day)	Drawdown (ft)	K (ft/day)	
1 a,b		290	310	122.29					
2	UFA-upper	320	350	77.84	74.98	2.03		-	
3	(250-410 ft bls)	350	380	36.79	27.86	9.60			
4		380	410	34.71	25.69	10.40			
5		410	440	79.73	79.08	0.92		-	
6°		440	470	89.25	88.41	0.84	87.66	0.84	
7		470	500	75.09	71.13	2.46		1	
8		500	530	64.87	64.51	0.81	63.10	0.83	
9		530	560	29.14	19.66	13.41		1	
10	OCADI -	560	590	28.88	18.30	15.52	16.26	17.47	
11	OCAPlpz (410-800 ft bls)	590	620	74.95	71.09	2.39		1	
12	(410-600 it bis)	620	650	43.18	39.29	4.33		-	
13		650	680	40.25	30.65	8.60		-	
14		680	710	57.86	51.72	4.11		-	
15		710	740	45.27	35.49	7.50		-	
16		740	770	65.69	63.37	2.06		1	
17		770	800	36.3	26.40	9.95	22.31	11.78	
18		800	830	21.05	11.06	23.89	7.20	36.69	
19 <sup>d</sup>		830	860	15.03	2.64	117.21	0.60	515.72	
20		860	890	68.49	64.29	2.69	61.23	2.82	
21		890	920	49.5	45.26	3.83	43.17	4.02	
22	APPZ	920	950	25.51	15.16	17.73	10.60	25.36	
23 <sup>d</sup>	(800-1,113 ft bls)	960	990	15.03	4.56	57.93	0.54	489.22	
24 <sup>d</sup>		990	1020	15.54	4.99	53.70	0.54	499.31	
25		1,020	1,050	65.8	60.02	3.31	57.35	3.47	
26		1,050	1,080	20.46	10.06	26.19	1.61	163.68	
27		1,080	1,110	32.87	21.70	12.54	12.55	21.67	
28e		1,110	1,140	29.38	18.13	15.12	7.16	45.30	
29		1,140	1,170	35.23	23.88	11.52			
30		1,170	1,200	68.04	58.91	4.17			
31		1,200	1,230	37.73	26.56	10.19			
32	MCU I	1,230	1,260	34.95	23.69	11.43			
33	(1,113-1,410 ft bls)	1,260	1,290	67.62	65.85	1.64			
34		1,290	1,320	46.97	43.10	3.70			
35		1,320	1,350	59.59	58.08	1.66	59.00	1.63	
36		1,350	1,380	55.88	52.36	2.82	48.95	3.01	
37		1,380	1,410	74.2	71.62	1.74	74.39	1.67	

Table 6. Continued.

D1	II144:1:-	Test I	nterval	Based on N	Ianual Measu	rements		Based on CTD Probe Data		
Packer Test #	Hydrostratigraphic Unit	Top Depth (ft bls)	Bottom Depth (ft bls)	Raw Drawdown (ft)	Corrected Drawdown (ft)*	K (ft/day)	Drawdown (ft)	K (ft/day)		
38		1,410	1,440	26.69	15.43	17.03	7.76	33.87		
39		1,440	1,470	21.61	10.12	26.41	2.36	113.25		
40		1,470	1,500	78.31	77.28	0.95	77.46	0.95		
41		1,500	1,530	70.92	67.01	2.31	64.72	2.39		
42°		1,530	1,560	35.58	30.54	5.75	27.18	6.46		
43		1,560	1,590	64.42	59.81	2.76	57.14	2.88		
44	LFA-upper	1,590	1,620	18.31	6.60	39.69	2.91	90.03		
45 <sup>b,f</sup>	(1,410-1,833 ft bls)	1,620	1,650							
46		1,650	1,680	23.55	11.61	22.72	3.00	87.93		
47 <sup>b</sup>		1,680	1,710	90.2	88.80	0.80	85.90	0.83		
48 <sup>d</sup>		1,710	1,740	20.95	8.77	30.18	0.23	1,135.81		
49 <sup>d</sup>		1,740	1,770	21.78	10.19	25.60	0.45	579.75		
50 <sup>d</sup>		1,780	1,810	21.61	9.83	26.56	0.17	1,535.55		
51 <sup>d</sup>		1,810	1,840	19.86	8.08	32.45				
52 <sup>b,c</sup>		1,840	1,870	90.13	78.27	2.55	75.00	2.66		
53 <sup>b</sup>	GLAUClpu (1,833-2,000 ft bls)	1,870	1,900	89.95	81.54	2.04	83.23	2.00		
54 <sup>b</sup>		1,900	1,930	89.89	83.28	1.66	60.51	2.29		
55 <sup>a,b</sup>		1,930	1,960	89.51						
56°		1,960	2,000	25.82	22.98	4.16	22.18	4.31		

APPZ = Avon Park permeable zone; CTD = conductivity, temperature, and depth; ft = feet; ft bls = feet below land surface; GLAUClpu = low-permeability glauconitic marker unit; K = hydraulic conductivity; LFA-upper = upper permeable zone of the Lower Floridan aquifer; MCU\_I = middle confining unit I; OCAPlpz = Ocala—Avon Park low-permeability zone; UFA-upper = upper permeable zone of the Upper Floridan aquifer.

<sup>&</sup>lt;sup>a</sup> Pumping rate noted as 0 gpm.

b Pumping rate was too high for open interval, water level dropped to a point where pump had to be shut off.

<sup>&</sup>lt;sup>c</sup> Packer leaking or other hydraulic issue.

 $<sup>^{\</sup>rm d}$  Drawdown calculated from CTD data was within the propagated margin of error ( $\pm 0.67 {\rm ft}$ ).

e Drawdown was overestimated (lightning storm prevented manual measurements).

f No depth-to-water measurements were collected during pumping.

<sup>\*</sup> The absolute value of the calculated drawdown was used to calculate hydraulic conductivity.

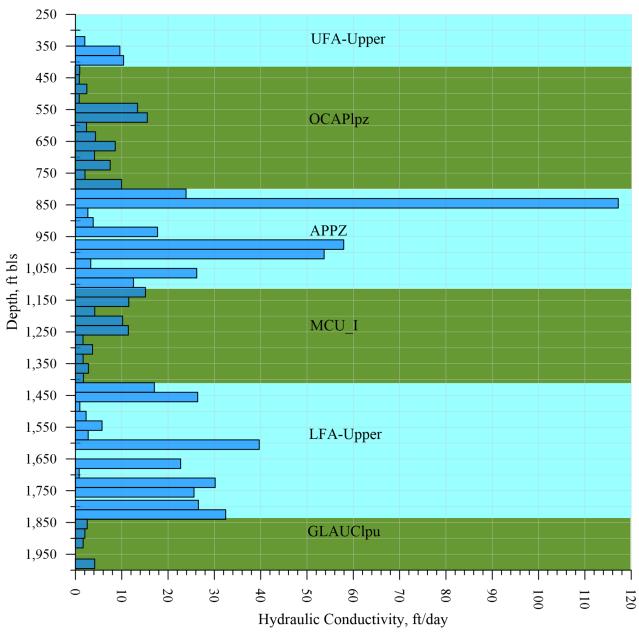


Figure 22. Hydraulic conductivity calculated using the Cooper-Jacob method overlain on the Sumica site hydrostratigraphic units.

### WATER QUALITY AND INORGANIC CHEMISTRY

Forty-nine groundwater samples were collected during packer testing to characterize the water chemistry of the FAS. Packer tests 1 through 39 were completed during exploratory drilling for POF-31, and tests 40 through 56 during exploratory drilling for POF-32. Field parameters (temperature, pH, oxidation-reduction potential [ORP], and specific conductance) were measured during packer test groundwater purging and sampling using a Yellow Springs Instruments (YSI) 600XL multiprobe or a YSI EXO1 multiparameter sonde and recorded by a District hydrogeologist.

Each groundwater sample was collected by a District hydrogeologist and submitted to the District's laboratory in West Palm Beach, Florida for analyses in accordance with the project's Water Quality Monitoring Plan (SFWMD 2019). Major cations and anions, TDS, and total strontium were analyzed by a District hydrogeologist. The stable isotopes of oxygen and hydrogen (<sup>18</sup>O and <sup>2</sup>H) were analyzed in each packer test groundwater sample by the University of Arizona's Environmental Isotope Laboratory in Tucson, Arizona.

Water quality field parameters are summarized in **Appendix H**, charge balance errors are presented in **Appendix I**, and major ion analytical results are summarized in **Table 7**. A plot of field specific conductance with depth is presented in **Figure 23**. A complete tabulation of all groundwater analytical results is presented in **Appendix J**.

Seven of the samples yielded charge balance errors greater than 10%, exceeding the project threshold for acceptance. All but one of these charge balance exceedances were from samples collected from the upper, predominantly limestone portion of the borehole (in the MCU and above), where bicarbonate is the dominant anion. One of the exceedances was from the groundwater sample collected during packer test 37 at the base of MCU\_I (10.95% charge balance error). In all samples with high charge balance errors, there was an overabundance of cations relative to anions. Given these conditions, the most likely source of the error is an underestimation of bicarbonate ion concentration. Bicarbonate concentrations were not directly measured; rather, they were derived from laboratory measurements of alkalinity as CaCO<sub>3</sub>. Although alkalinity has a 14-day holding time, groundwater samples collected from the FAS are often unstable because they undergo rapid changes in temperature and pressure as the groundwater is pumped to the surface for collection. Carbon dioxide can be released from solution during this process, causing pH and alkalinity to drop in the groundwater. District field sampling protocols attempt to mitigate this effect by collecting alkalinity samples with zero headspace to limit atmospheric contact. Placing the samples in an ice-filled cooler after sampling is a second protocol followed by the field geologists that is intended to further slow degassing reactions. Even with these precautions, a loss of alkalinity could still be significant.

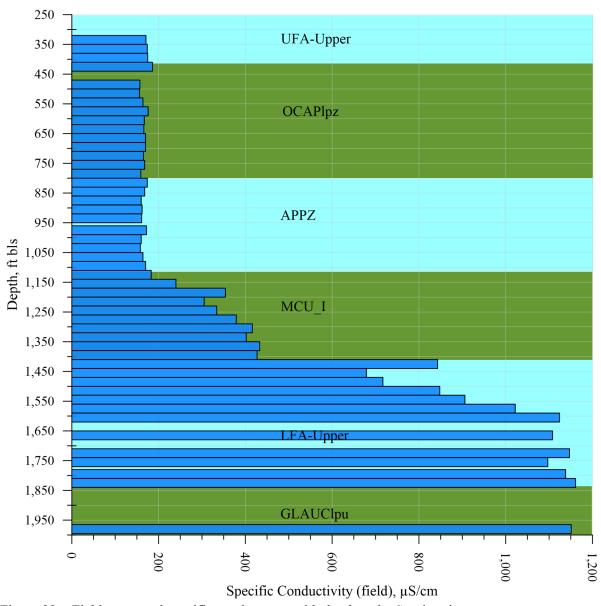


Figure 23. Field-measured specific conductance with depth at the Sumica site.

The United States Environmental Protection Agency (USEPA) established National Secondary Drinking Water Regulations that set nonmandatory water quality standards for 15 contaminants. The USEPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They were established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL (USEPA 2024). The SMCL for TDS is 500 mg/L. Twelve of the groundwater samples collected below a depth of 1,410 ft bls exceeded the TDS SMCL (Appendix J), and five groundwater samples exceeded the sulfate SMCL (250 mg/L) in Table 7. All the sulfate SMCL exceedances were from samples collected between depths of 1,410 and 1,610 ft bls (Table 7).

Table 7. Major ion analytical results, total dissolved solids, and field parameters for the Sumica site groundwater samples. (Note: Bolded results exceeded the USEPA SMCL for sulfate (250 mg/L.)

Sample	Packer	Hydrostratigraphic	Ar	nions (mg/	/L)		Cations	s (mg/L)				Temp.	Specific	TDS
Depth, ft bls	Test #	Unit	Cl	HCO <sub>3</sub>	SO <sub>4</sub>	Na	Mg	Ca	K	Sr*	pН	(°C)	Cond. (µS/cm)	(mg/L)
320-350	2	III A	5.0	92.66	4.3	3.6	6.3	23.8	< 1	1.56	7.9	24.8	171	96
350-380	3	UFA-upper (250-410 ft bls)	4.9	93.88	4.2	3.6	7.0	23.6	< 1	1.70	7.9	24.7	174	103
380-410	4	(230-410 ft bis)	5.0	96.32	4.4	3.6	7.0	28.3	1	1.70	7.9	24.7	175	99
410-440	5		5.4	95.10	5.7	3.8	8.2	24.2	1	2.02	8	24.4	186	104
470-500	7		4.5	87.78	4.9	3.0	7.6	17.6	< 1	1.85	8.3	25.5	157	96
500-530	8		4.4	90.22	4.9	3.0	7.7	26.8	1	1.89	8.2	26.5	156	108
530-560	9		4.8	92.66	4.4	3.4	7.1	23.6	< 1	1.81	8.1	25.0	164	109
560-590	10		4.8	92.66	4.6	3.4	7.2	26.9	< 1	1.81	8.1	25.1	176	102
590-620	11	OCAPlpz	4.9	86.56	5.2	3.2	7.8	18.3	< 1	2.31	8.2	25.9	167	105
620-650	12	(410-800 ft bls)	5.0	85.35	4.8	3.2	7.5	17.8	< 1	2.33	8.1	26.2	166	110
650-680	13		5.3	87.78	5.5	3.4	7.1	19.2	< 1	2.83	8.1	25.9	170	104
680-710	14		5.2	87.78	5.8	3.4	6.6	19.2	< 1	4.29	8.1	26.1	170	99
710-740	15		4.9	85.35	5.6	3.2	6.4	20	< 1	3.87	8	26.2	165	99
740-770	16		4.9	86.56	6.0	3.5	6.5	21.4	< 1	4.63	8.2	26.4	168	106
770-800	17		4.4	89.00	2.7	3.0	6.4	28.9	< 1	2.90	8.1	26.5	159	94
800-830	18		4.4	98.76	2.4	3.5	8.6	41.2	< 1	2.31	8.1	26.5	174	100
830-860	19		4.4	96.32	1.6	3.1	8.1	26.4	< 1	2.17	8.3	26.5	168	97
860-890	20		4.4	91.44	1.6	3.0	9.6	31.8	< 1	1.81	8.2	26.8	160	108
890-920	21		4.4	90.22	1.8	2.9	6.8	19.6	< 1	1.82	8	26.7	162	82
920-950	22	APPZ	4.4	89.00	1.6	3.0	6.6	19.3	< 1	1.67	8.2	26.8	161	88
960-990	23	(800-1,113 ft bls)	4.3	96.32	1.2	3.3	7.4	19.8	< 1	1.25	8	26.8	172	92
990-1,020	24		4.3	87.78	< 1	2.9	7.4	20	< 1	1.76	8.3	27.4	160	84
1,020-1,050	25		4.4	85.35	1.8	2.9	6.7	19.4	< 1	1.15	8.2	27.1	158	86
1,050-1,080	26		4.4	84.13	6.1	2.9	6.8	20	< 1	2.21	8.3	27	164	98
1,080-1,110	27		4.4	85.35	6.2	3.0	7.6	20.1	< 1	2.48	8.3	27.1	170	95

Table 7. Continued.

Sample	Packer	Hydrostratigraphic	An	nions (mg/	L)		Cations	s (mg/L)				Temp.	Specific	TDS
Depth, ft bls	Test #	Unit	Cl	HCO <sub>3</sub>	SO <sub>4</sub>	Na	Mg	Ca	K	Sr*	pН	(°C)	Cond. (µS/cm)	(mg/L)
1,110-1,140	28		4.4	86.56	12.4	2.9	8.3	19.4	< 1	5.98	8	26.9	183	104
1,140-1,170	29		4.6	85.35	41.6	3.1	10.3	22.9	< 1	14.99	8	27.3	240	151
1,170-1,200	30		4.8	82.91	99.9	3.1	15.0	31.3	< 1	35.93	7.8	27.2	354	247
1,200-1,230	31		4.8	85.35	73.6	3.2	14.9	31.9	< 1	25.82	7.9	27.2	305	202
1,230-1,260	32	MCU_I	5.3	85.35	87	3.4	13.1	29.8	< 1	33.05	7.9	27.4	334	231
1,260-1,290	33	(1,113-1,410 ft bls)	5.5	86.56	109	3.6	15.9	36.7	1.1	35.47	8	27.8	379	281
1,290-1,320	34		5.5	86.56	127	3.8	17.2	41.9	1.2	33.79	7.9	27.4	416	292
1,320-1,350	35		5.4	85.35	123	3.8	17.6	42.4	1.2	34.65	7.9	27.1	402	296
1,350-1,380	36		5.5	87.78	127	3.9	18.3	42.2	1.2	32.83	8	27.7	433	304
1,380-1,410	37		5.3	91.44	123	4.2	21.8	49.4	1.2	33.71	7.8	27.5	427	308
1,410-1,440	38		6.1	87.78	344	4.7	44.1	99.9	1.6	23.26	7.6	27.6	843	626
1,440-1,470	39a		5.2	90.22	177	4.0	25.8	59.5	1.2	21.36	7.8	27.4	679	498
1,440-1,470	39b		5.6	86.56	251	4.2	33.5	76.5	1.4	22.11	7.9	27.6	717	534
1,470-1,500	40		6.6	85.35	286	4.5	39.2	78.4	1.6	23.90	7.9	27.4	848	634
1,500-1,530	41		13.7	87.78	349	7.6	45.4	88.3	1.8	21.16	8	27.8	906	662
1,530-1,560	42	I E A	25.9	93.88	362	14.4	48.5	109.7	1.9	20.17	7.8	27.9	1022	628
1,560-1,590	43	LFA-upper (1,410-1,833 ft bls)	123	96.32	244	65.5	37.4	69.7	3.3	17.15	8	28.4	1124	628
1,590-1,620	44	(1,410-1,033 11 018)	180	101.19	170	103.9	31.9	61.4	4.5	9.15	8	27.3	1108	641
1,650-1,680	46		177	106.07	171	101.0	33.5	66.5	4.5	8.43	7.9	28.4	1147	663
1,710-1,740	48		180	99.98	170	104.1	33.2	62.6	4.4	9.72	7.8	28.7	1097	623
1,740-1,770	49		179	99.98	169	96.6	31.5	58.9	4.2	9.26	7.8	28.8	1138	650
1,780-1,810	50		190	103.63	169	107.8	32.4	60.6	4.5	9.67	8	28.8	1161	656
1,810-18,40	51		191	103.63	152	112.4	33.2	61.8	5.0	9.85	7.8	28.5	1151	647

 $<sup>^{\</sup>circ}$ C = degrees Celsius;  $\mu$ S/cm = microsiemens per centimeter; APPZ = Avon Park permeable zone; Ca = calcium; Cl = chloride; ft bls = feet below land surface; HCO<sub>3</sub> = bicarbonate; K= potassium; LFA-upper = upper permeable zone of the Lower Floridan aquifer; MCU\_I = middle confining unit I; Mg = magnesium; mg/L = milligrams per liter; Na = sodium; OCAPlpz = Ocala—Avon Park low-permeability zone; SO<sub>4</sub> = sulfate; Specific Cond. = specific conductance; Sr = strontium; Temp. = temperature; TDS = total dissolved solids; UFA-upper = upper permeable zone of the Upper Floridan aquifer.

<sup>\*</sup> Most strontium concentrations exceeded the USEPA's 2014 proposed health reference level for strontium (1.5 mg/L).

Of the 56 packer tests completed during this project, six packer tests (tests 1, 47, 52, 53, 54, and 55) were flagged because they yielded insufficient water for sampling due to the low transmissivity of those intervals. The groundwater sample collected during packer test 40 (1,470 to 1,500 ft bls) had a low charge balance error, but the results for this sample are considered questionable due to the low purge volume caused by the low-permeability rock in that interval.

Packer test 39 is also flagged due to an inadequate purge volume, but the reasons this test necessitated the qualification are very different. Packer test 39 (1,440 to 1,470 ft bls) was conducted in high-permeability rock of the LFA-upper. However, the field-measured specific conductance measured during LFA-upper packer test 39 (464 microsiemens per centimeter [ $\mu$ S/cm]) after three borehole volumes had been purged was significantly lower than the specific conductance (843  $\mu$ S/cm) measured during LFA-upper packer test 38 (from 1,410 to 1,440 ft bls).

A salinity inversion between two vertically adjacent productive zones occurs when relatively saltier, higher specific conductivity is found on top of relatively fresher water. The relatively fresher water measured during test 39 (464  $\mu$ S/cm) as compared to test 38 (843  $\mu$ S/cm) was noted as irregular by a District hydrogeologist. At the Sumica site, a downward vertical hydraulic gradient exists between the APPZ and the LFA-upper. A head drop of 13.86 ft was measured across MCU\_I using the recovery water levels measured at the end of packer test 27 (last test from the APPZ with an open interval from 1,080 to 1,110 ft bls) and packer test 38 (first test from the LFA-upper with an open interval from 1,410 to 1,440 ft bls).

The relatively lower specific conductance measured during packer test 39 as compared to packer test 38 was likely due to downhole annular flow, which allowed the relatively fresher groundwater from the overlying APPZ (800 to 1,113 ft bls) to comingle with the packer test 39 water of the LFA-upper. To evaluate this, the packers were kept inflated, and the packer test 39 interval was purged overnight. A second sample (sample 39b) was collected in the morning after 25 borehole volumes had been pumped from the test interval. When this sample was collected, the specific conductance of the groundwater had increased to 679  $\mu$ S/cm. Data from the CTD probe provide the clearest picture of conditions in the formation (**Figure 24**). The CTD probe was installed below the packer and pump intake piping during purging and collection of groundwater samples 39a and 39b.

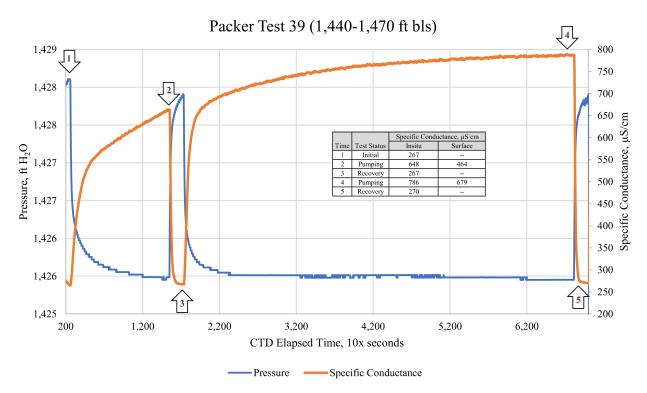


Figure 24. Pressure and specific conductance measured by the CTD probe during Sumica site packer test 39. Pressure (ft of water) is represented by the blue line, and specific conductance (μS/cm) is represented by the orange line. Events denoted by numbered arrows are discussed in the text.

Figure 24 shows that at the start of test 39 (at time 1, denoted by the arrow with "1" inside of it) the specific conductance was 267 µS/cm, which was fresher than the preceding nine packer tests. At time 2, when sample 39a was collected after a three-borehole volume purge, the in situ specific conductance of 648 µS/cm (i.e., as measured by the CTD probe installed within the tested interval) was significantly higher than the specific conductance measured at the surface (464 µS/cm). That difference in specific conductance was not a measurement discrepancy between the two instruments. The screen intake below the packer was located approximately 18 inches above the sensors on the CTD probe. The specific conductance difference between the surface and in situ measurements reflects the fresher water from above that, due to the pressure head produced by 1,430 ft of water above the packer assembly (a minimum of approximately 620 pounds per square inch [psi]) and the downward vertical hydraulic gradient, traveled past (outside) the packer assembly, then through the packer assembly and on to the pump, bypassing the CTD probe (see Figure 25). Therefore, the groundwater pumped to land surface was a mixture of formation water from the test interval and relatively fresher water from above. When the pump was briefly shut down and water levels had recovered (at time 3 in Figure 24), the *in situ* specific conductance immediately returned to pre-pumping concentrations, indicating that the overlying water was pushing past the packer assembly and displacing water in the test zone to an extent that it fully enveloped the CTD probe. Specific conductance rose continuously during the overnight purging but appeared to be leveling off by time 4 when sample 39b was collected.

When the pump was shut down, and water levels were allowed to recover (at time 5 in **Figure 24**), the *in situ* specific conductance immediately returned to pre-purge concentrations, again indicating that the overlying water was pushing past the packer assembly and displacing water in the test zone to an extent that it fully enveloped the CTD probe.

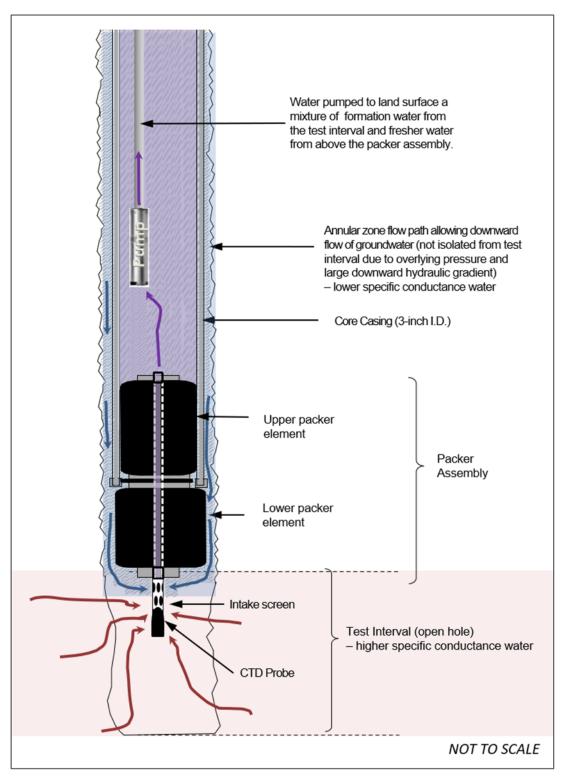


Figure 25. Illustration of groundwater bypassing the packer assembly during packer test 39.

It is likely that the packer assembly did not adequately seal against an irregular corehole during test 39 at POF-31. A review of the POF-32 caliper log shows an irregular borehole with deviations of up to 2 inches between the depths of 1,430 to 1,440 ft bls, indicating that similar conditions may have been encountered at POF-31. This interval corresponds with the packer seating depth for test 39 at POF-31. The interval at

POF-32 immediately below the packer set depth was a relatively gauge borehole. However, it is clear from **Figure 25** and the approximately 14-foot decline in static water levels between the APPZ and the LFA-upper that downward flow would continue as coring continued, resulting in downhole groundwater flow during drilling, coring, and packer installation, causing mixing between APPZ and LFA-upper groundwater as coring progressed into the underlying units. To prevent further groundwater mixing between the APPZ and LFA-upper, the corehole for POF-31 was grouted to the base of the APPZ at 1,113 ft bls. Packer testing resumed in the POF-32 corehole once a permanent casing had been installed to the top of the LFA.

*In situ* measurements of pressure (P) in psi, ORP in millivolts, pH, temperature in degrees Celsius, and specific conductance at 25°C in μS/cm are available for 36 of the 56 packer tests conducted at the Sumica site. The *in situ* ORP was used to calculate the reduction potential (Eh) for each test interval. Having both the *in situ* measurements of the water quality parameters and those same measurements as collected by a District hydrogeologist while sampling at the ground surface offers an opportunity to compare the two sets of measurements.

As seen in **Figure 26**, specific conductance showed the highest correlation between surface and *in situ* measurements. In practice, if a packer testing interval is adequately purged, the two readings will fall within the error range of the instrumentation. It is also clear from this figure that it is more difficult to capture a representative measurement of *in situ* groundwater temperatures within the formation after the water has been pumped up to land surface. The packer test data represent a depth range of 1,710 ft, but also a time range of 231 days (June 2020 to January 2021). The larger deviations in surface temperature measurements in the deeper portions of the borehole illustrate the difficulty in compensating for the effect of cooler air temperatures on the surface readings. While the surface readings fluctuated somewhat with air temperature, *in situ* readings increased consistently with depth. A local geothermal gradient of 0.38°C/100 ft (0.68°F/100 ft) was calculated from linear regression of the CTD temperature data (**Figure 27**).

The regression also implies a mean annual surface temperature of 23.3°C (73.9°F), comparable to the reported local average of 23.4°C (74.2°F) from Lake Wales (National Oceanic and Atmospheric Administration [NOAA] 2023).

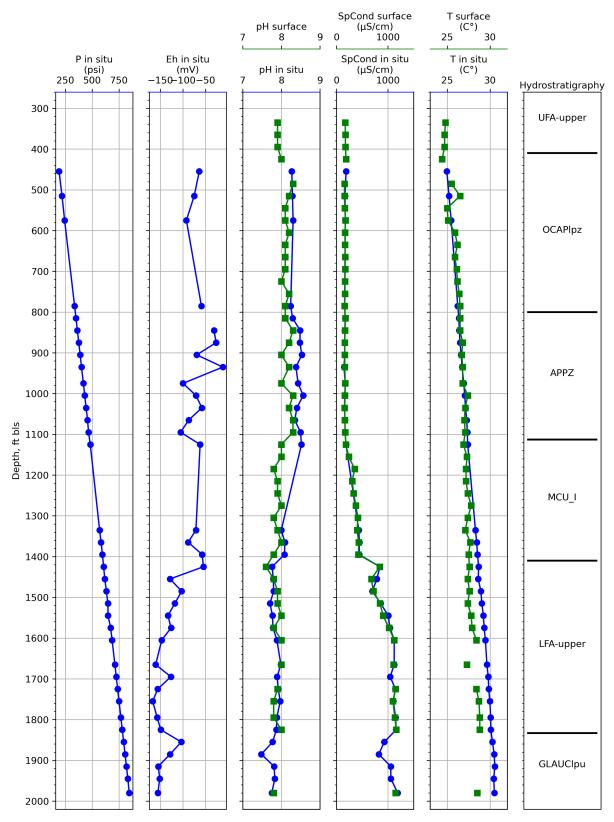


Figure 26. Vertical profile of field parameters measured at land surface by the Yellow Springs Instruments EXO1 probe (green square symbols) and measured *in situ* by the Idronaut CTD probe (blue circle symbols) at the Sumica site.

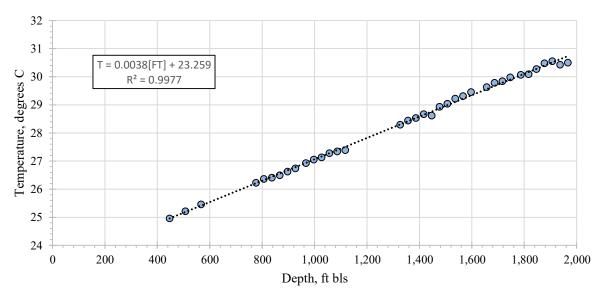


Figure 27. Local geothermal gradient at the Sumica site.

The surface and *in situ* measurements of pH differed from 0.01 to 0.53 pH units across all tests where both values were available. Discrepancies in pH between surface and in situ readings occur because the concentration of [H+] is controlled by the chemical reactions which produce or consume it. Many of these reactions, like the disassociation of carbonate species and oxidation of sulfides, are affected by depressurization when groundwater is pumped to the surface for collection. The CTD data indicated that pH was slightly depressed, and Eh was slightly more reducing below the MCU I in comparison with groundwater from above the MCU I. From 320 to 1,110 ft bls, fresh water was encountered, with a median specific conductance of 167 µS/cm with minimal spread in the data, as measured by both surface and in situ instrumentation. Through MCU I, from 1,110 to 1,410 ft bls, the specific conductance gradually increased to approximately 430 µS/cm. Test 37 was the last packer test located fully within the MCU I. Below this depth, as the corehole advanced into the LFA-upper, there was an abrupt increase in specific conductance to 843 µS/cm. Excluding the questionable results from tests 39 and 40, specific conductance gradually increased to 1,190 µS/cm at the total corehole depth of 2,000 ft bls. The boundary between fresh water and brackish water is approximately 1,500 µS/cm, or 1,000 mg/L TDS (Kasenow 2001). It was unexpected to find fresh water at this depth. Although the water was fresh, all the LFA-upper groundwater samples exceeded the 500 mg/L USEPA SMCL for TDS. Because specific conductance is easily measured in the field, it is a useful surrogate for salinity. However, the relationship between electrical conductivity and ion concentration is not the same for all ion species and all ion concentrations (Hem 1985). Unless the ion concentrations and relationships to specific conductance are known, laboratory analysis is required to evaluate changes in salinity. Figure 28 shows the variation in ionic species concentrations, hydraulic conductivity, Frazee water types, and hydrostratigraphic units with depth at the Sumica site. The colors in the packer test column of Figure 28 represent where the groundwater samples plot on the Piper diagram with Frazee water types overlain on the diagram (Figure 29).

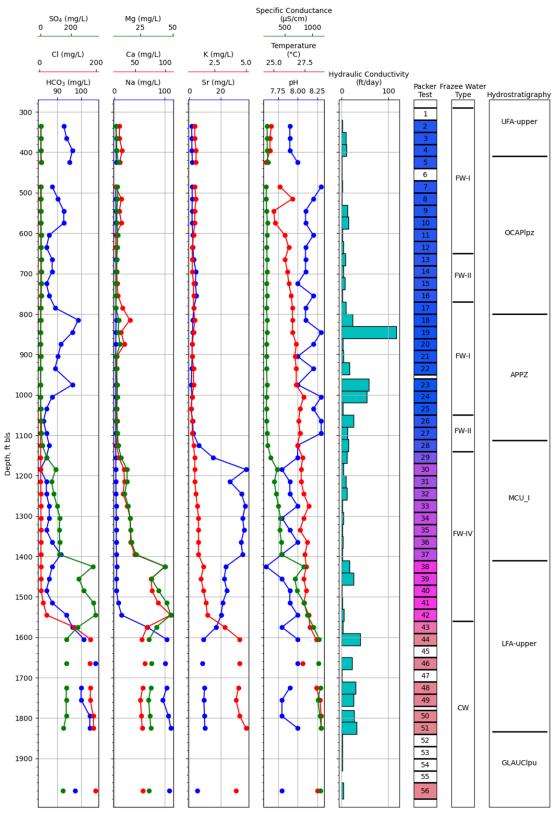


Figure 28. Concentrations of ionic species, pH, temperature, specific conductance, and hydraulic conductivity from packer tests, Frazee water types, and hydrostratigraphic units at the Sumica site.

- Above a depth of 1,110 ft bls (which is close to the top of the MCU\_I), groundwater at the site was of the calcium-bicarbonate water type and is dominated by those two ions. The concentrations of chloride and sulfate were near their respective minimum detection limits in this portion of the borehole.
- From 1,110 to 1,530 ft bls (within the MCU\_I and uppermost permeable zone of the LFA), there was an overall increase in mineral content and a shift to calcium-sulfate water type. There was no reduction in bicarbonate concentration below this depth, but a major increase in sulfate drove the change in classification. Calcium, magnesium, and strontium also increased significantly in this interval.
- Below 1,530 ft bls, the groundwater was sodium-chloride water-type.

A wide range of ions and elements can become dissolved in groundwater because of interactions with the atmosphere, soil, and rock. Waters with similar chemical compositions are assumed to have a similar history. Differences in hydrochemical facies between samples collected from a single location from different depths can be an indication of differences in source water and hydraulic separation between those depths. The packer test groundwater samples were evaluated using the geochemical water types developed for the FAS by Frazee (1982). Frazee's geochemical water types relate the ionic compositions of a groundwater sample to recharge sources, residence time, and saltwater intrusion. The Frazee water types are defined in **Table 8**. **Figure 29** is a Piper diagram for the packer test groundwater samples with Frazee's water types overlain on the diagram.

Table 8. Frazee (1982) water types.

Abbreviation	Description	Characteristics
FW-I	Fresh Recharge Water Type I	Rapid infiltration through sands, high calcium bicarbonate (CaHCO <sub>3</sub> ).
FW-II	Fresh Recharge Water Type II	Infiltration through sands and clay lenses, CaHCO <sub>3</sub> with sodium (Na), sulfate (SO <sub>4</sub> ), and chloride (Cl). Marginal type II waters are beginning to transition toward FW-IV.
FW-III	Fresh Recharge Water Type III	Infiltration through clay-silt estuarine depositional environment, high sodium bicarbonate (NaHCO <sub>3</sub> ).
FW-IV	Fresh Formation Water Type IV	Fresh water, low calcium (Ca), magnesium (Mg), SO <sub>4</sub> , and Cl. Vertical infiltration insignificant. Older form of FW-II or FW-III.
TW-I	Transitional Water Type I	Seawater begins to dominate source water; Cl begins to dominate bicarbonate (HCO <sub>3</sub> ) with increasing sodium chloride (NaCl) percentage.
TW-II	Transitional Water Type II	Transitional water with source water still dominant, HCO <sub>3</sub> – SO <sub>4</sub> mixing zone with increasing Cl.
TCW	Transitional Connate Water	Connate water dominates source water, SO <sub>4</sub> begins to dominate HCO <sub>3</sub> with increasing Cl.
TRSW	Transitional Seawater	Transitional water with seawater dominating source water.
CW	Connate Water	Highly mineralized fresh water with high TDS and calcium sulfate (CaSO <sub>4</sub> ) dominance. Presence of highly soluble minerals; hydrogen sulfide (H <sub>2</sub> S) gas prevalent.
RSW*	Relict Seawater	Unflushed seawater with NaCl.

<sup>\*</sup> Strongly NaCl-dominant waters may plot in this category even if the overall salinity is substantially less than seawater.

A groundwater sample's position on the Piper diagram (**Figure 29**) is also represented by the colored background of the Piper diagram. Using a continuous/gradational color scheme on the Piper diagram allows for easy visualization of gradual changes in groundwater chemical composition with depth. This gradation is missed with the uncolored Piper diagram with the overlain Frazee water types, especially for Frazee water types that cover a large area on the central diamond of the Piper diagram. Conversely, Frazee water types are useful for grouping samples that came from common source waters and underwent similar histories. The color gradient Piper plot was developed using the diagrams and Python code of Peeters (2014) and Yang et al. (2022). The Piper diagram in this report has a different color scheme due to most of the Sumica site samples plotting in the CaCO<sub>3</sub> (left) and CaSO<sub>4</sub> (top) regions of the central diamond. The previous color scheme resulted in samples grading from red to pink, which made it difficult to discern changes in chemistry. The modified colors are a gradient from blue to pink in these regions and provide better visualization for samples that plot in these portions of the central diamond.

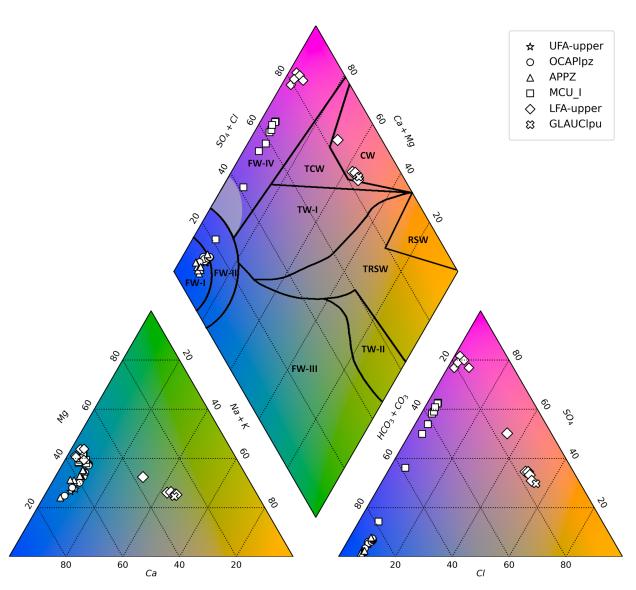


Figure 29. Piper diagram for Sumica site packer test groundwater samples with Frazee water type classifications.

All the packer test samples collected above the MCU\_I were categorized as fresh recharge water using Frazee's classification (**Figure 29**). The subtypes (I or II) are indicative of the relative rate of infiltration, with type I indicative of rapid infiltration rates. The FW-IV subtype is groundwater that is still fresh according to the Frazee water types classification, but vertical infiltration is no longer significant, and the primary driver for chemical composition is mineral dissolution.

As shown in the Piper diagram (**Figure 29**) and the plot of ionic species with depth (**Figure 28**), groundwater in the UFA-upper, OCAPlpz, and APPZ can be classified as fresh recharge water that infiltrated through sand and clay lenses (FW-I and FW-II). Most of the samples collected from the MCU\_I and all the samples collected from the LFA-upper above 1,560 ft bls fall in the Fresh Formation Water Type IV (FW-IV) category, which is characterized by insignificant vertical infiltration, and described as an older form of FW-II or FW-III (**Table 8**). Within the lower portion of LFA-upper (below 1,560 ft bls) and through the entirety of the GLAUClpu, all the groundwater samples were categorized as the connate water (CW) subtype. Connate water is highly mineralized fresh water (per the definition for connate water by Frazee 1982) containing hydrogen sulfide gas, indicating extended storage and the presence of highly soluble minerals.

Sulfate in carbonate systems forms either from the dissolution of evaporite minerals, predominantly anhydrite (CaSO<sub>4</sub>) or gypsum (CaSO<sub>4</sub>·H<sub>2</sub>O), or by carbonate neutralization of acidic waters (Hounslow 1995). Given that assumption, Hounslow (1995) offered the following rule-of-thumb indicators for source rocks for sulfate in groundwater:

 $Ca^{2+} = SO_4^{2-}$  source rock likely evaporite minerals

 $Ca^{2+} > SO_4^{2-}$   $\Rightarrow$  calcium input from some source other than evaporites (e.g., limestone or dolostone)

 $Ca^{2+} < SO_4^{2-}$   $\Rightarrow$  pyrite oxidation or calcium removal by precipitation

It has been noted in several recent exploratory wells in the region that the evaporite celestine (SrSO<sub>4</sub>) is a more common component in the FAS than previously thought. If the only evaporites are gypsum and anhydrite, then only calcium and sulfate need to be considered. Revising the Hounslow (1995) rule-of-thumb to include the consideration of strontium, the comparison of  $(Ca^{2+} + Sr^{2+})$  versus  $SO_4^{2-}$  yields a more accurate result (**Figure 30**). Using this comparison, evaporite mineral dissolution was the primary sulfate source rock for the sulfate in the groundwater samples collected during the packer tests completed below a depth of 1,170 ft bls.

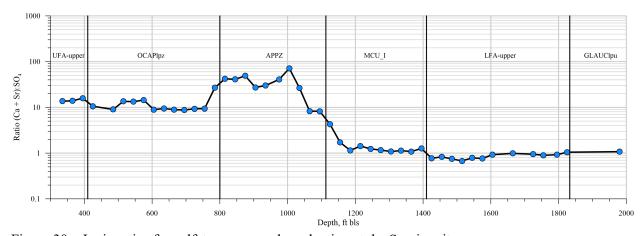


Figure 30. Ionic ratios for sulfate source rock evaluation at the Sumica site.

The saturation indices for the carbonate minerals calcite, aragonite, dolomite, and strontianite and the evaporite minerals anhydrite, gypsum, and celestite were calculated using PHREEQC, Version 3 (Parkhurst and Appelo 2013). The saturation index (SI) is the log of the ratio of ion activity product (IAP) and the solubility product constant ( $K_{sp}$ ):

$$SI = \log\left(\frac{IAP}{K_{SD}}\right)$$
 Equation (10)

Where:

SI = saturation index (unitless)

IAP = ion activity product (unitless)

 $K_{sp}$  = solubility product constant (unitless)

IAP is calculated using the ionic concentrations of groundwater samples corrected for field temperature and the ionic strength of the solution (Parkhurst and Appelo 1999). K<sub>sp</sub> is a constant based on thermodynamics for the dissolved mineral at equilibrium from reported laboratory measurements. Reported K<sub>sp</sub> assumes a temperature of 25°C, so a correction was later applied to account for the field-measured groundwater temperatures. A more detailed description of the SI calculation methodology can be found in Coonts (2021, Appendix D). The SI is a quantitative measure of the degree of saturation with respect to a specific mineral:

 $SI < 0 \rightarrow Undersaturated$  (more mineral can be dissolved into solution)

SI = 0  $\rightarrow$  Sample is at *Equilibrium* with the mineral

 $SI > 0 \rightarrow Supersaturated$  (mineral has potential to precipitate out of solution)

**Figure 31** shows the saturation indices for dolomite, strontianite, calcite, aragonite, celestine, gypsum, and anhydrite for groundwater samples collected during each packer test, listed from least soluble (on the left side of the diagram) to most soluble (on the right side of the diagram), relative to the hydrostratigraphic units at the site. Blue bars represent packer test groundwater samples that are undersaturated for a particular mineral, and red bars represent packer test groundwater samples that are supersaturated. The SI temperature corrections were calculated using both surface sample temperatures and estimated formation temperatures based on the local geothermal gradient presented above. The results differed, but not sufficiently to change the SI classifications.

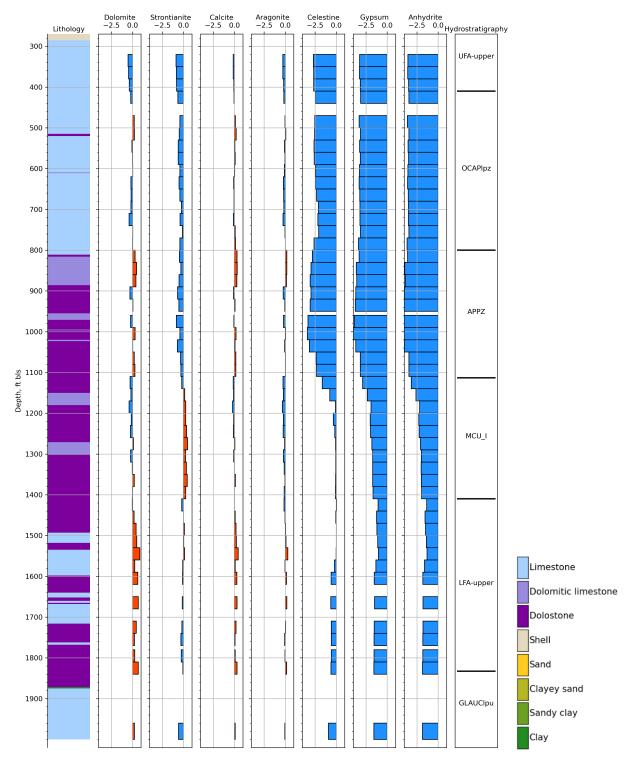


Figure 31. Lithology and calculated saturation indices for primary carbonate and sulfate minerals in the FAS at the Sumica site.

Calcite and its polymorph, aragonite, were close to chemical equilibrium (within +/- 0.5 SI) across the entire explored depth. Dolomite exhibited a similar pattern but was slightly more saturated within the LFA-upper. Strontianite was slightly more undersaturated than the other carbonate minerals above the MCU\_I, and more saturated within it. A 1.5-inch-wide layer of strontianite was described in the core at a depth of 1,380 ft bls. Evaporite minerals gypsum and anhydrite were undersaturated across the entire explored depth. Celestine was undersaturated in all samples but became very close to equilibrium within the MCU\_I and the upper part of the LFA. Subhedral crystals of celestine were identified in the recovered core between depths of 1,330 and 1,475 ft bls.

### STABLE ISOTOPES

Isotopes are atoms of the same element that have the same numbers of protons and electrons but different numbers of neutrons. The difference in the number of neutrons between the various isotopes of an element means that the various isotopes have similar charges but different masses. The stable isotopic compositions of low-mass (light) elements such as oxygen, hydrogen, carbon, nitrogen, and sulfur are normally reported as "delta" ( $\delta$ ) values in parts per thousand (denoted as ‰) enrichments or depletions relative to a standard of known composition. The symbol ‰ is spelled out in several different ways: permil, per mill, per mill, or per mille. The term "per mill" is the International Organization for Standardization term but is not yet widely used (Kendall and Caldwell 1998).

 $\delta$  values (in ‰) are calculated by

$$\delta = (R_{\text{sample}}/R_{\text{standard}} - 1)1,000$$
 Equation (11)

where "R" is the ratio of the heavy to light isotope in the sample or standard. A positive  $\delta$  value means that the sample contains more of the heavy isotope than the standard; a negative  $\delta$  value means that the sample contains less of the heavy isotope than the standard (Kendall and Caldwell 1998). Various isotope standards are used for reporting isotopic compositions; the compositions of each of the standards have been defined as 0%. Stable oxygen and hydrogen isotopic ratios are normally reported relative to the SMOW standard, "Standard Mean Ocean Water," (Craig 1961) or the virtually equivalent VSMOW (Vienna-SMOW) standard (Kendall and Caldwell 1998). There are several commonly used ways for making comparisons between  $\delta$  values. According to Kendall and Caldwell (1998), the three ways shown below are preferred:

- higher versus lower values
- heavier versus lighter (the "heavier" material is the one with the higher value)
- more/less positive versus more/less negative (e.g., -10% is more positive than -20%)

Two stable isotopes of hydrogen (<sup>1</sup>H and <sup>2</sup>H) and three stable isotopes of oxygen (<sup>16</sup>O, <sup>17</sup>O, and <sup>18</sup>O) are naturally occurring in water. Of these five stable isotopes, <sup>1</sup>H, <sup>2</sup>H, <sup>16</sup>O, and <sup>18</sup>O are abundant in nature and can be easily measured in a laboratory using mass spectrometry.

During phase changes, the ratio of heavy to light isotopes in the molecules in the two phases changes. During evaporation, the heavier isotopes (<sup>18</sup>O and <sup>2</sup>H) are preferentially left behind, and the lighter isotopes are concentrated in the water vapor. As water vapor condenses, the heavier water isotopes (<sup>18</sup>O and <sup>2</sup>H) become enriched in the liquid phase, while the lighter isotopes (<sup>16</sup>O and <sup>1</sup>H) concentrate in the vapor phase (Kendall and Caldwell 1998). This is because the atomic bonds between the heavier isotopes (such as <sup>18</sup>O) are stronger than the atomic bonds between lighter isotopes (such as <sup>16</sup>O), allowing the lighter isotopes to be preferentially evaporated over the heavier isotopes due to the lower amount of energy required to break those atomic bonds.

Stable isotope data from precipitation samples fall on a line referred to as a meteoric water line. This line is usually plotted with data from local, regional, or global precipitation samples, but can also include surface and groundwater samples (Diamond 2022). When the isotopic compositions of precipitation samples from all over the world are plotted relative to each other on  $\delta$  <sup>18</sup>O versus  $\delta$  <sup>2</sup>H plots, the data form a linear band that can be described by the equation (Craig 1961):

$$^{2}H = 8^{18}O + 10$$
 Equation (12)

When relatively more of the heavy isotope (e.g.,  $^{18}$ O) is present in the sample than the SMOW or VSMOW standard, then the  $\delta$  value will be greater than zero, whereas samples relatively depleted in the heavy isotope will have negative  $\delta$  values (Diamond 2022). The  $\delta$   $^{18}$ O and  $\delta$   $^{2}$ H values of the standard are equal to 0.

For this project, groundwater samples collected during each packer test were submitted to the University of Arizona's Environmental Isotope Laboratory in Tucson, Arizona for analyses of stable isotopes of oxygen and hydrogen (<sup>18</sup>O and <sup>2</sup>H). The results of these analyses (**Appendix J**) can be used to characterize the evaporative history of and possible mixing relationships between the source waters comprising the various FAS hydrostratigraphic units encountered during the POF-31/32 exploratory drilling.

All the Sumica site packer test groundwater samples were depleted relative to VSMOW and all the samples plotted below the global meteoric water line (**Figure 32**). Overall, the groundwater samples from the younger hydrostratigraphic units (OCAPlpz and UFA-upper) were the most depleted relative to VSMOW, and the groundwater samples from the oldest hydrostratigraphic units (GLAUClpu and the LFA-upper) were the least depleted relative to VSMOW, with the remaining samples falling in between these two end member groups.

The ranges of stable water isotope ratios in the groundwater samples from the Sumica are as follows:  $\delta^{18}$ O ranged from -2.5 to -1.6 ‰, and  $\delta^{2}$ H ranged from -12.8 to -5.6 ‰. The stable water isotope results mostly cluster by hydrogeologic unit, indicating that the climatic conditions during recharge to each hydrostratigraphic unit were not identical. **Figure 32** shows that  $\delta^{18}$ O and  $\delta^{2}$ H become increasingly positive in the GLAUClpu and the majority of the LFA-upper samples, and are more enriched than the OCAPlpz, UFA-upper, MCU\_I, and APPZ samples, possibly indicating that the LFA-upper and GLAUClpu source waters underwent more evaporation than the water in the OCAPlpz, UFA-upper, MCU\_I, and APPZ.

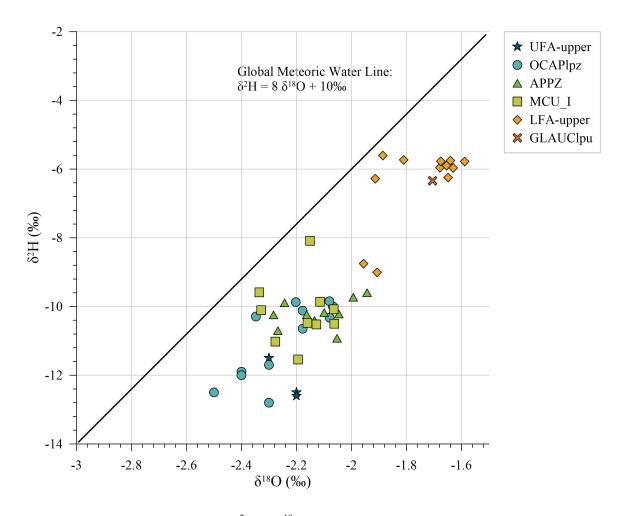


Figure 32. Stable isotopic ratios of <sup>2</sup>H and <sup>18</sup>O at the Sumica site.

### GEOPHYSICAL AND OPTICAL BOREHOLE IMAGING LOGGING

Geophysical logging was completed by RMBaker, LLC to provide a continuous record of the geophysical properties of the borehole. These data were used for casing seat depth selection, identification of potential production and confining zones, and identification and characterization of hydrostratigraphic units.

OBI logging was completed by the USGS at POF-31 and POF-32, providing a visual record that clearly shows the structural characteristics of the rock exposed along the borehole walls. The OBI logs provided additional information on the rock's porosity, flow zones, confining zones, and structure that may not be as evident in the recovered core.

**Table 9** summarizes the geophysical and OBI logs completed during this investigation. All the geophysical and OBI logs are provided in **Appendices D** and **E**. Brief descriptions of key information from the logging program are in the following sections.

Table 9. Geophysical log inventory for the Sumica site investigation.

	POF-31		POF-32					
Date	Mar 24, 2020	Sep 10, 2020	Oct 30, 2020	Nov 3, 2020	Jan 28, 2021	Feb 16, 2021	Apr 9, 2021	
Logging Company	RMBaker	RMBaker	USGS	RMBaker	RMBaker	USGS	RMBaker	
Corehole Diameter, inches	6	10	10	10	4	6	6	
Logged Interval, ft bls	0–285	270–900	270–1,409	0-1,409	1,410–2,000	1,410–1,840	1,410–1,840	
Caliper	✓	✓		✓	✓		✓	
Natural Gamma	✓	✓		✓	✓		✓	
Single-Point Resistivity	✓	✓		✓	✓		✓	
Normal Resistivity	✓	✓		✓	✓		✓	
Dual Induction/ Spontaneous Potential	✓	<b>✓</b>		<b>✓</b>	✓			
Sonic Porosity	✓	✓		✓			✓	
Flow Meter		✓		✓			✓	
Temperature		✓		✓	✓		✓	
Fluid Resistivity		✓		✓	✓		✓	
Downhole Video		✓		✓			✓	
Optical Borehole Imaging			✓			✓		
	✓		der flowing conditions	✓	Logged ur condi			

ft bls = feet below land surface; USGS = United States Geological Survey.

**Figure 33** is a composite of the key geophysical logs collected from the POF-31/32 corehole. Phosphate in the Hawthorn Group was the most likely source for the large spikes on the natural gamma log from approximately 72 to 247 ft bls. Gamma ray counts in this interval averaged 207 counts per second, with spikes up to 828 counts per second. Below 247 ft bls, there was an abrupt decrease in the gamma ray counts, indicative of the base of the Hawthorn Group. The sonic porosity log indicates relatively high porosity at the base of the ICU/Hawthorn Group and through the UFA, with an overall decrease in sonic porosity through the underlying OCAPlpz.

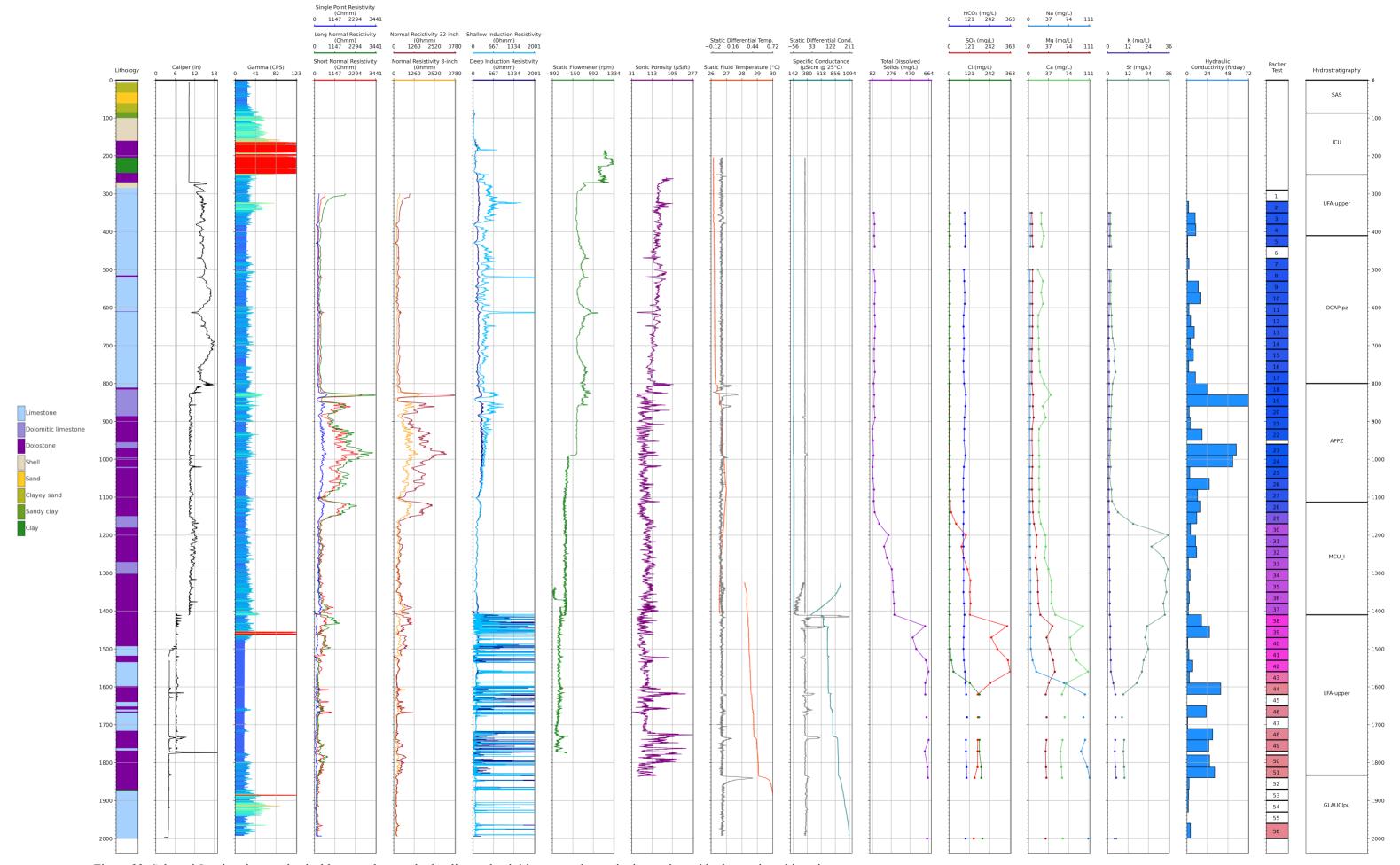


Figure 33. Selected Sumica site geophysical logs, packer test hydraulic conductivities, groundwater ionic trends, and hydrostratigraphic units.

Above the top of the APPZ, from 300 ft bls to approximately 800 ft bls, most of the geophysical logs show consistent, relatively low readings (**Figure 33**). The caliper log shows enlarged zones within softer and/or fractured intervals. The sonic porosity log shows some variability through this zone, and an overall decrease in porosity to 800 ft bls, and fluid temperature remained consistent. Fluid conductivity remained relatively constant at approximately 140 µS/cm to a depth of approximately 885 ft bls. Long-normal resistivity increases from a fairly constant resistivity of approximately 340 ohm-m until it reaches its maximum value recorded at the Sumica site, which was approximately 3,400 ohm-m at a depth of approximately 830 ft bls. From 830 to 1,175 ft bls, within the APPZ, the long-normal resistivity and resistivity logs remain elevated with a few decreased resistivity intervals at 837 ft bls, 885 ft bls, and 1,100 ft bls. Below a depth of approximately 1,175 ft bls, the resistivity and long-normal resistivity logs both decrease and become more consistent, with long-normal resistivities remaining close to approximately 400 ohm-m with only minor fluctuations.

From 800 ft bls to approximately 1,120 ft bls, the sonic log shows an increase in variability with rapid cycling between high and low readings as compared to the readings from shallower depths (**Figure 33**). Spikey caliper deviations increased in magnitude and frequency through this interval, indicating fractured, well indurated rock. These changes are caused by a change in lithology from mudstone to hard, brittle dolostone of the APPZ. From approximately 850 to 1,150 ft bls, the dual induction log also shows an increase in resistivity. From 987 to 1,100 ft bls, fluid conductivity increased from approximately 765 to 1,170  $\mu$ S/cm, before decreasing to approximately 920  $\mu$ S/cm at 1,400 ft bls. The fluid temperature also increased from 26.28 °C at 800 ft bls, then increased to a maximum of 27 °C at 1,077 ft bls, followed by a decrease to 26.88 °C at 1,113 ft bls. The bottom 38 ft of this interval, from 1,112 to 1,150 ft bls, provides vertical confinement due to its very low porosity and lack of significant fracturing.

From 1,150 to 1,400 ft bls, sonic porosity is more consistent and slightly higher than in the APPZ, and the gamma log is consistent (**Figure 33**). The variability in caliper deviation increases in this interval, indicative of varying degrees of induration. The rock in this interval was well indurated to poorly indurated dolomitic limestone, limestone, and dolostone. Starting at approximately 1,415 ft bls, the fluid conductivity steadily increased from a low of 472  $\mu$ S/cm in a stair-stepped pattern to the bottom of the corehole, where it reached a maximum of approximately 1,206  $\mu$ S/cm.

In the upper portion of the LFA-upper, more changes were recorded on the geophysical logs. Between 1,425 and 1,535 ft bls, the shallow and deep dual induction logs rapidly cycled between very high resistivity readings and low to moderate resistivities, as opposed to the curves recorded above and below this interval which recorded less rapid cycling in the resistivity measurements (Figure 33). This overall zone of rapid cycling between low and very high dual induction resistivities is grouped into three intervals when the entire interval is looked at as a whole. The shallow dual induction profiles in this interval reflect the invaded zone of the rock, whereas the deep dual induction curves should represent the "true" resistivity for the uninvaded rock. These three intervals of rapid cycling in the dual induction logs extend from 1,405 to 1,535 ft bls, 1,598 to 1,673 ft bls, and 1,715 to 1,802 ft bls and roughly coincide with the three flow zones identified in the LFA-upper (1,410 to 1,463 ft bls, 1,603 to 1,669 ft bls, and 1,722 to 1,833 ft bls). In addition, the bottom two intervals of elevated dual induction resistivities (1,598 to 1,673 ft bls, and 1,715 to 1,802 ft bls) correspond with zones of relatively high sonic porosity and were (mostly) described as dolostone, both of which could cause elevated resistivity responses, depending on how fresh the groundwater is that is contained in the rock's pore spaces. The sonic porosity shows longer, higher travel times that correlate with the elevated deep dual induction log traces for the deepest two LFA-upper flow zones (1,603 to 1,669 ft bls, and 1,722 to 1,833 ft bls), indicating fluid-filled porosity in these two productive intervals. These described changes in the dual induction, resistivity, and sonic porosity logs also correlate with the changes in packer test hydraulic conductivities through this interval (Figure 33).

The long-normal resistivity log also recorded relatively higher resistivities and variable readings between approximately 1,410 and 1,437 ft bls, where it reached a maximum of 1,432 ohm-m, and between 1,442 to 1,450 ft bls, and 1,470 to 1,500 ft bls (**Figure 33**). These elevated resistivity zones were followed by a significant decrease in resistivity to 9 ohm-m at 1,519 ft bls. Below this depth, the long-normal resistivity increased and remained fairly constant at approximately 190 to 200 ohm-m, with slightly elevated long-normal resistivity zones from 1,657 to 1,662 ft bls, 1,740 to 1,755 ft bls, and 1,780 to 1,832 ft bls. All these elevated long-normal resistivity intervals are found within the rapid cycling, elevated deep dual induction resistivity zones. The sonic porosity through this interval (1,405 to 1,715 ft bls) was slightly lower than in the zones above and below, with slightly more variability and rapid cycling in the porosity measurements.

From 1,454 to 1,465 ft bls, there are two closely spaced spikes in the gamma log (**Figure 33**). These spikes are associated with a significant increase in dark, black organic layers observed in the recovered core (**Figure 34**).

From 1,475 to 1,778 ft bls, there is a significant reduction in gamma ray counts coupled with increased sonic porosity readings and variability (**Figure 33**). The caliper log is nearly gauge (indicative of hard, well indurated rock), with major deviations at 1,615, 1,733 and 1,773 ft bls where the rock is fractured or where there is dissolution along bedding planes. The highest porosity is associated with these dissolution features. Below a depth of 1,905 ft bls, only the shallow induction resistivity displays the rapid cycling and high resistivities. The deep induction logs do not record elevated resistivities as they did in the LFA, possibly indicating that the shallow induction resistivity recorded fluid infiltration into the rock, whereas the deep induction is recording values closer to the "true" resistivity for the uninvaded portion of the limestone below 1,900 ft bls. The diameter of the sonic porosity tool limited data collection to the final reamed borehole, so sonic porosity was not able to be collected below 1,836 ft bls.

The characteristic gamma log signature of the glauconitic marker unit (Duncan 1994) was recorded between depths of 1,778 and 2,000 ft bls (**Figure 33**). At the Sumica site, the glauconitic marker horizon correlation point on the gamma log (after Reese and Richardson 2008) was identified at a depth of 1,883 ft bls. Two spikes in the dual induction log were recorded in the GLAUClpu at approximately 1,850 and 1,880 ft bls. Fluid temperature showed a steady increase with depth between the base of the MCU\_I until near the top of the GLAUClpu, where the fluid temperature increased from about 26.64 °C to 26.97 °C at a depth of 1,843 ft bls. From that depth to the bottom of the corehole, the fluid temperature increased steadily to 27.35 °C. The long-normal resistivity decreased at 1,835 ft bls and remained relatively low at around 120 ohm-m through the remainder of the GLAUClpu.



Figure 34. Soft, black organic layers between 1,460 and 1,470 ft bls at POF-31.

The November 3, 2020 geophysical logs were collected under artesian conditions. A natural discharge rate of approximately 860 gpm was calculated for the well based on the vertical height of the water jet above the top of the 10-inch-diameter casing (Driscoll 1986, App. 16.F). **Figure 35** shows the flow produced from the base of the casing (270 ft bls) to a depth of approximately 1,080 ft bls. The caliper adjusted down dynamic flowmeter logs show several intervals of flow. The flows are given as gpm and as a percentage of the artesian flow observed at the surface. Upward flow as recorded by a downward descending flowmeter is shown as a reduction in the flowmeter's spinner rate, so the intervals that show a decrease in flow are the intervals that are contributing to the artesian flow. When adding up the percentage of flow for these zones contributing flow, it is 122% of the artesian flow seen at the surface. From 388 to 461 ft bls, the flowmeter recorded an increase in the tool's spinner rate, indicating that the extra 22% of the recorded flow goes back into the formation at this depth.

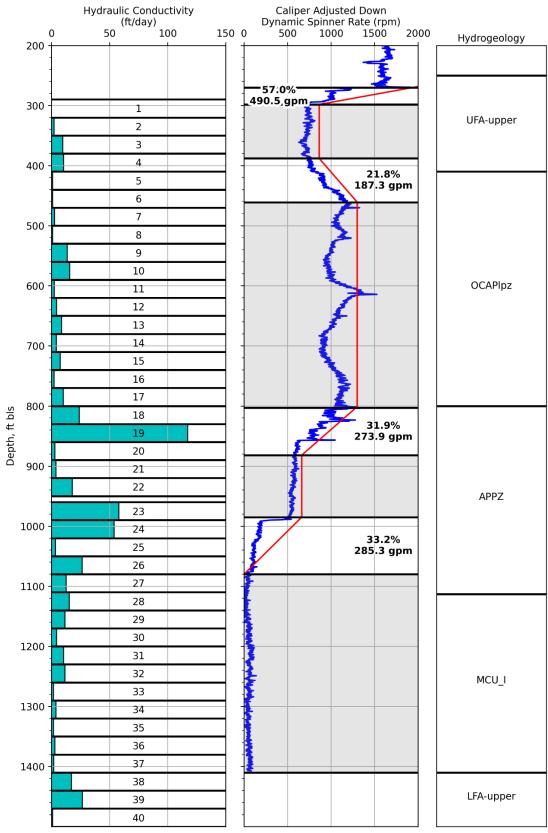


Figure 35. Relative artesian flow contributions versus the distribution of packer test hydraulic conductivities at the Sumica site.

### **CORE ANALYSES**

Seven core samples from lower-permeability sections of the POF-31 and POF-32 coreholes were analyzed by Core Labs in Houston, Texas for horizontal and vertical permeability, porosity, and grain density (**Table 10**). Core Labs analyzed five additional samples for mineralogic composition using X-ray diffraction (XRD) as shown in **Table 11**. Photographs of each sample are presented in **Appendix K**.

Table 10. Summary of Sumica site core analyses and comparison with sonic log porosity.

Sample		Grain	F	Percent Porosity	Hydraulic Conductivity		
Depth, ft bls	Lithology	Density, g/cm <sup>3</sup>	Horizontal	Vertical	Sonic Log	Horizontal, ft/d	Vertical, ft/d
642.5	Limestone - Wackestone	2.692	40.14	40.12	41	0.12	0.15
705.0ª	Limestone - Wackestone	2.701	42.20	48.70	36	1.66	N/A
1,277.8 <sup>b</sup>	Dolostone	2.836	37.29	34.46	40	0.29	0.11
1291.3 <sup>b</sup>	Dolomitic - Limestone	2.837	29.64	36.30	27	0.21	0.74
1,310.9	Dolomitic - Limestone	2.846	28.81	N/A	29	0.01	N/A
1,891.9	Limestone - Wackestone	2.696	27.74	28.93	N/A	0.02	0.02
1,984.3	Clayey Limestone - Wackestone	2.701	26.33	23.17	N/A	0.09	0.01

d = day; ft = feet; ft bls = feet below land surface;  $g/cm^3 = grams per cubic centimeter$ .

Omitting the questionable vertical porosity from 705 ft bls due to the sample being too short for accurate testing, porosity ranged from 23% to 43%. Those values are typical for the FAS, which generally falls on the high end of the porosity spectrum for carbonate rocks. The generally high porosity was comparable to that derived from the sonic porosity log (available above 1,840 ft bls) using the Hunt-Raymer correction for limestone or dolostone. Except for the 705 ft bls sample, permeabilities were less than 1 ft/d. The laboratory core analyses results represent matrix permeability for each sample, in contrast to the packer test results, which represent the bulk permeability of the matrix and secondary dissolution features. The horizontal permeabilities from these seven laboratory analyses are 84% lower on average than was calculated for the packer test intervals they represent. While dramatic, this is not entirely unexpected, as the packer test intervals span 30-foot-long sections of rock, whereas the tested core samples are less than 1 foot long, which could cause the laboratory results to be significantly higher (or lower) than the "bulk" hydraulic conductivities obtained from analyses of packer test data.

**Table 11** summarizes the XRD whole rock and clay mineralogy results. The 1,278.2 ft bls sample (transmissivity of 49 ft²/day) was from one of the lower-permeability packer test intervals within the MCU\_I. It was expected from regional mapping that the lithologically distinct evaporitic facies of the MCU (MCU\_II) would be found at the Sumica site close this depth. However, significant amounts of evaporites were not identified in the Sumica site cores, and tested hydraulic conductivities were generally higher than observed in MCU\_II samples. Because it was possible that evaporites might be present within the rock's pores and not visible to the naked eye, a sample collected from 1,278.2 ft bls was analyzed using XRD. The XRD results did not indicate that evaporitic material was present; rather, the sample was composed almost entirely of pure dolomite with no evaporitic components.

<sup>&</sup>lt;sup>a</sup> Vertical sample was too short: porosity less reliable.

b Vuggy sample.

Table 11. Whole rock and clay mineralogy XRD results for the Sumica site samples.

Hydrogeologic Sample depth,		Whole Rock Mineralogy							Clay Mineralogy	
		( \( \sigma \)							(Weight %)	
Unit	ft bls	Quartz	Strontianite	K- Feldspar	Calcite	Dolomite (Mg-Fe)	Pyrite	Total Clay	Illite and Mica	Chlorite
MCU_I	1,278.2	0.6	0.0	0.0	0.0	99.4	0.0	0.0		
MCU_I	1,380.0	0.9	93.7	0.0	0.0	5.4	0.0	0.0		
	1,907.8 (bulk)	2.2	0.0	1.0	96.2	0.0	0.5	0.0		
GLAUClpu	1,907.8 (white mineral only)	60.9	0.0	3.2	0.0	35.9	0.0	0.0		
GLAUClpu	1,911.4	0.6	0.0	0.0	30.7	67.6	0.0	1.1	1.1	0.0

Fe = iron; ft bls = feet below land surface; GLAUClpu = low-permeability glauconitic marker unit; K= potassium; MCU I = middle confining unit I; Mg = magnesium.

Two mineral samples collected from vugs at depths of 1,380 and 1,907 ft bls (**Figure 36**) were analyzed using XRD to identify the crystals within the vugs at those depths. Calcite, anhydrite, and gypsum are the most frequently identified minerals within the FAS, but less common minerals may also be present. XRD analysis identified the mineral in the 1,380 ft bls sample as strontianite (SrCO<sub>3</sub>). The mineral occurred as a nodule (~1" in diameter) within microcrystalline dolostone. The mineral had a vitreous luster and fluoresced yellow under ultraviolet light. Groundwater samples collected from this portion of the corehole were supersaturated with respect to strontianite as discussed earlier. Field tests for hardness led to a preliminary identification of the vug-filling white mineral in the 1,907.8 ft bls sample as quartz. XRD analysis confirmed that the mineral was quartz. Zydek (2020) reported crystalline quartz as an accessory mineral within the Avon Park and Oldsmar Formations in a Sumter County corehole and noted that the quartz appeared to occupy vugs previously infilled with gypsum.

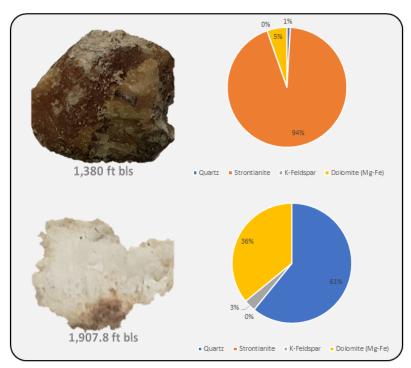


Figure 36. Composition of Sumica site crystal samples.

### **WATER LEVELS**

At the end of each packer test, the depth to water in the drill pipe was measured using a water level meter once the water levels had stabilized. These recovery water levels reflect the static water levels within each tested interval. Changes in recovery water levels can indicate changes in confinement and vertical gradients. Groundwater elevations calculated from recovery depth-to-water measurements collected at the end of each packer test are represented by the black-colored time series in **Figure 37**. To compare these recovery water levels with local water levels in the FAS, the recovery water levels were converted to elevations (ft NGVD29) and compared to the groundwater elevations from the closest cluster of FAS monitoring wells. The closest FAS well cluster POF-27U, POF-27L, and POF-29 (refer to Richardson et al. 2013) is located at Camp Mack Road site (Site B), approximately 8 miles north of the Sumica site (**Figure 38**). Wells POF-27U, POF-27L, and POF-29 monitor the UFA-upper, APPZ, and LFA-upper, respectively. The groundwater elevations that were recorded in these monitor wells at the same time as the packer test recovery water levels collected at the Sumica site are plotted at the midpoint depth of each packer test in **Figure 37**.

The hydrostratigraphic units at the Sumica site are shown as vertical shaded bars in **Figure 37**, with the UFA-upper shaded blue to match the blue-colored time series for UFA-upper monitor well POF-27U. Similarly, the Sumica APPZ interval and the APPZ monitor well POF-27U are shown in green, and the Sumica LFA-upper interval and the LFA-upper monitor well time series are shown in red.

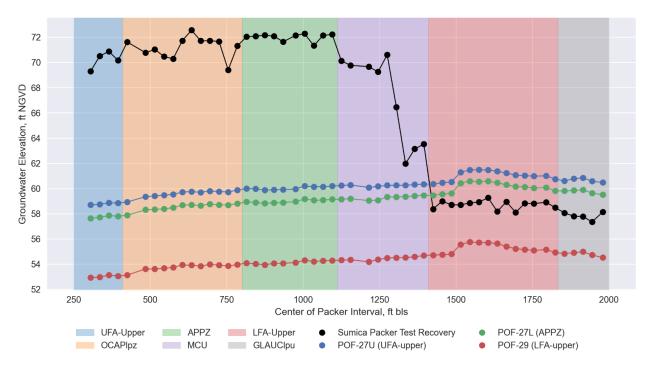


Figure 37. POF-31/32 packer test recovery groundwater elevations compared to POF-27 and POF-29 groundwater elevations collected during the same time period.

Through the UFA-upper and the upper half of the OCAPlpz (test 1 through test 10, from 290 to 590 ft bls), the packer test recovery groundwater elevations at POF-31/32 (**Figure 37**) showed consistent elevations that varied between approximately 70 and 71 ft NGVD29. The variations in recovery groundwater elevations within the OCAPlpz likely reflect the relatively heterogenous lithologic and hydraulic characteristics of this unit, with some portions of this unit acting more strongly as confining units than other portions of the OCAPlpz.

From 590 ft bls through the remainder of the OCAPlpz and APPZ (through the ending depth of 1,110 ft bls in test 27), the recovery groundwater elevations rose slightly and remained relatively constant at an elevation of approximately 72 ft NGVD29, except for the recovery groundwater elevation of 69.41 ft NGVD29 recorded at the end of test 16 (740 to 770 ft bls). This groundwater elevation was lower than the other recovery groundwater elevations measured through the lower part of the OCAPlpz and into the APPZ. This is likely due to the relatively lower transmissivity of that interval (64 ft²/day) as compared to the surrounding intervals, which ranged from 84 to 3,589 ft²/day.

The first recovery groundwater elevation measured within MCU\_I (test 28) was approximately 2 ft higher than the elevation recorded in the last packer test within the overlying APPZ (test 27). The recovery groundwater elevations measured within MCU\_I showed a pattern of decreasing, stepped recovery groundwater elevations through the entire unit. A downward hydraulic gradient was present through MCU\_I, with recovery groundwater elevations decreasing by a maximum of 8.16 ft between packer test 28 (at the top of MCU\_I) and packer test 35 (1,320 to 1,350 ft bls) near the bottom of MCU\_I. The recovery groundwater elevations for the last two packer tests completed to the base of MCU\_I (between 1,350 and 1,410 ft bls) rose 1.55 ft as compared to the other MCU\_I recovery groundwater elevations. This stepping groundwater elevations pattern roughly followed the changes in the calculated transmissivities of each packer test, with relatively higher transmissivity tests corresponding with relatively higher recovery groundwater elevations, and lower transmissivity tests corresponding with relatively lower recovery groundwater elevations.

Within the LFA-upper, the recovery water levels once again stabilized at an average elevation of 58.74 ft NGVD29, only varying by 1.16 ft.

Within the GLAUClpu, the recovery groundwater elevations declined slightly, averaging 57.94 ft NGVD29 with only 1.13 ft of variation in recovery groundwater elevations during the final six packer tests.



Figure 38. Locations of FAS wells at the Sumica site and nearby FAS wells POF-27U, POF-27L, and POF-29 at the Camp Mack Road site.

After construction, pressure transducers were installed in all three of the new monitoring zones, programmed to collect groundwater elevations at 15-minute intervals, and wired into the District's SCADA system. **Figure 39** is a groundwater elevation time-series plot for Sumica site wells POF-31U, POF-31L, and POF-32 combined with groundwater elevations from nearby FAS wells at the Camp Mack Road site (wells POF-27U, POF-27L, and POF-29, **Figure 38**). **Figure 39** shows seasonal variations in groundwater elevations, with the highest groundwater elevations being recorded during the wet season of each year (September 2021 and October 2022 in **Figure 39**), followed by declining groundwater elevations during the dry season. CFWI groundwater potentiometric surface maps for the UFA produced by the SFWMD for the CFWI region show that groundwater elevations decrease to the east-northeast in the vicinity of the Sumica and Camp Mack Road sites, which is why the Sumica site UFA groundwater elevations are higher than the Camp Mack Road site UFA groundwater elevations.

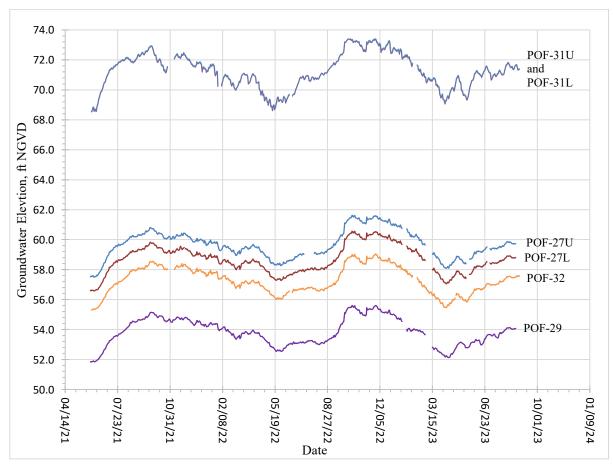


Figure 39. Hydrograph of FAS wells POF-31U, POF-31L, and POF-32 at the Sumica site and nearby FAS wells POF-27U, POF-27L, and POF-29 at the Camp Mack Road site. Elevations shown here are daily mean groundwater elevations. See **Figure 38** for well locations.

As shown in **Figure 39**, the groundwater elevations of POF-31U and POF-31L were nearly identical, with a maximum groundwater elevation difference of 0.11 ft for the period of record shown. These nearly identical groundwater elevations are indicative of the poor hydraulic confinement provided by the OCAPlpz at the Sumica site. The average difference between the groundwater elevations in POF-31L (APPZ) and POF-32 (LFA-upper and GLAUClpu) was 13.95 ft, with POF-32 having the lower groundwater elevation, indicative of good confinement provided by MCU\_I. This plot also shows that at the Camp Mack Road site, the confinement between the UFA-upper (POF-27U) and the APPZ (POF-27L) is better than at Sumica, with the average difference in groundwater elevations between POF-27U and POF-27L

being 1 foot, with a maximum difference of 1.17 ft. POF-29 is an LFA-upper well and shows the lowest groundwater elevations of all the wells shown in **Figure 39**. All these wells show nearly identical groundwater elevation time series traces and trends both seasonally/long term and often even daily despite the two well sites being about 8 miles apart.

### CONCLUSIONS

This investigation was focused on the FAS, in particular the UFA, APPZ, and LFA-upper, to assist with characterizing the hydrostratigraphy, groundwater quality, and productivity of these units. The Sumica site was selected for a number of reasons. First, it filled a data gap in the northwest part of the SFWMD in Polk County where FAS data are sparse. Second, the Sumica site is located at the site of two existing SAS wells, which meant that a more complete picture of the interactions between the SAS, UFA, APPZ, and LFA could be developed with reduced cost. Third, the site was publicly accessible, so no time-consuming access agreements or land acquisitions were required.

Hydrostratigraphic unit boundaries were established for the SAS, ICU, the UFA-upper, OCAPlpz, APPZ, MCU\_I, LFA-upper, and the top of the GLAUClpu at the Sumica Site. These boundaries are based on data obtained from continuous wireline coring and packer testing through the FAS, geophysical and OBI logs, and groundwater chemistry data obtained from every successfully completed packer test.

Geologic units encountered during this investigation included undifferentiated Holocene, Pleistocene, and Pliocene sediments, the Peace River and Arcadia formations of the Hawthorn Group, the Ocala Limestone, the Avon Park Formation, and the Oldsmar Formation. The Suwannee Limestone was not encountered. The base of the Oldsmar Formation was not encountered to the total depth drilled (2,000 ft bls) at POF-32.

The exploratory corehole for POF-31 was drilled first and was completed to 1,500 ft bls. This corehole was converted into a dual-zone UFA-upper/OCAPlpz and APPZ monitoring well. The UFA-upper/OCAPlpz monitoring well was named POF-31U and was completed with an annular monitoring zone from 275 to 594 ft bls. The APPZ monitoring well, named POF-31L, was completed with an open-hole interval from 800 to 900 ft bls.

Two significant production zones were identified within the APPZ (named Aphpz-1 and Aphpz-2) between depths of 800 and 857 ft bls and between 958 and 1,023 ft bls, respectively. These two intervals are relatively more fractured and have relatively higher packer test transmissivities than other portions of the APPZ where fractures and deformation features are less prevalent, and productivity is primarily controlled by bedding plane dissolution features and some vuggy porosity.

MCU\_I was the only middle confining unit present at the site and was characterized by relatively lower packer test transmissivities as compared to the overlying APPZ and underlying LFA-upper.

Within the LFA-upper, three relatively higher-transmissivity flow zones were identified from 1,410 to 1,463 ft bls, 1,603 to 1,669 ft bls, and 1,722 to 1,833 ft bls. These zones were named LF1, LF2, and LF3, respectively, for discussion purposes in this report.

The geophysical marker for the top of the GLAUClpu was encountered at a depth of 1,833 ft bls in the POF-32 corehole. The GLAUClpu was characterized by relatively low transmissivities and elevated gamma responses. The bottom of this unit was not encountered during this investigation.

The exploratory corehole for POF-32 was cored to 2,000 ft bls following completion of drilling and well installation activities at POF-31. This corehole was converted into an LFA-upper monitoring well, named

POF-32, with an open hole interval from 1,407 to 1,840 ft bls. POF-32's open interval extends approximately 7 ft into the GLAUClpu.

POF-31 and POF-32 were telemetered into the District's SCADA system and are collecting groundwater elevations from each open interval at 15-minute intervals. Groundwater elevation and water quality data can be accessed in DBHYDRO (<a href="https://www.sfwmd.gov/science-data/dbhydro">https://www.sfwmd.gov/science-data/dbhydro</a>), the District's corporate environmental database.

The groundwater elevations recorded at POF-31U and POF-31L were nearly identical for the time period shown in **Figure 39**, with a maximum groundwater elevation difference of 0.12 ft measured between the two wells, indicating that the OCAPlpz is a poor confining unit at the Sumica site. The average difference in groundwater elevations between the LFA-upper (POF-32) and the UFA-OCAPlpz (POF-31U) and APPZ (POF-31L) was about 13.9 ft for the same time period.

All the packer test groundwater samples collected above the MCU were categorized as fresh recharge water using Frazee's classification. From the base of the APPZ to a depth of approximately 1,560 ft bls (within the LFA-upper) at the Sumica site, the groundwater was still fresh according to the Frazee water types classification. However, vertical infiltration was no longer significant, and the primary driver for chemical composition was mineral dissolution. Below 1,560 ft bls, the groundwater samples were categorized as connate water. This connate water is highly mineralized and suggests extended storage and the presence of highly soluble minerals.

Specific conductance measured during packer testing gradually increased to 1,190 µS/cm at the total corehole depth of 2,000 ft bls. It was unexpected to find fresh water at a depth of 2,000 ft bls. Twelve of the groundwater samples collected below a depth of 1,410 ft bls exceeded the USEPA SMCL of 500 mg/L established for TDS (**Appendix J**), and five groundwater samples exceeded the SMCL of 250 mg/L for sulfate (**Table 7**). All the sulfate SMCL exceedances were from groundwater samples collected between depths of 1,410 and 1,610 ft bls (**Table 7**).

The hydraulic conductivities of the FAS, as calculated from the Sumica site packer testing hydraulic data, varied by two orders of magnitude, ranging from 0.83 ft/day in the OCAPlpz (test 8) to 344 ft/day in the APPZ (test 19). The calculated transmissivities in those same zones ranged from 25 ft²/day (test 8) to 3,589 ft²/day (test 19). These transmissivities represent order-of-magnitude estimates that are intended for comparison of the relative productivity of each tested interval and are not meant to represent the transmissivity of entire units. As discussed, aquifer performance tests are needed to adequately stress each aquifer and arrive at the most accurate, representative transmissivity for each unit. The calculated ranges in hydraulic conductivities from the packer tests completed in each hydrostratigraphic unit are as follows:

UFA-upper: 2 to 10 ft/dayOCAPlpz: 1 to 16 ft/dayAPPZ: 3 to 117 ft/day

• MCU\_I: 2 to 15 ft/day

• LFA-upper: 1 to 40 ft/day

• GLAUClpu: All packer tests pumped dry in this low productivity interval.

### RECOMMENDATIONS

Aquifer performance tests are recommended to characterize the productivity and aquifer properties of the UFA-upper, OCAPlpz, APPZ, and LFA-upper at the Sumica site. Although the packer testing and data analyses performed for this project were rigorous, these data were collected from 20- to 30-foot-long depth intervals and provide only relative comparisons of the productivity and transmissivity between tested intervals.

An accurate characterization of the hydraulic properties of the entirety of each productive zone identified during this investigation is recommended. This could be achieved by performing constant-rate aquifer performance tests and concurrent groundwater sampling or single-well specific capacity tests. Each aquifer performance test should be conducted at the highest sustainable pumping rates to adequately stress each aquifer so that accurate aquifer parameters can be calculated.

Now that FAS monitor wells POF-31 and POF-32 have been installed in a previously identified FAS data gap, the collected data from these new wells should be integrated into a regional synthesis and correlation with existing FAS wells. Additional FAS drilling, well installation, and testing within the CFWI region could help further resolve differing hydrostratigraphic interpretations between neighboring water management districts and help refine the regional hydrostratigraphic framework and available groundwater resources.

Because the flow zones within the APPZ are highly productive, their regional extent, productivity, thickness, and depths are important for water supply planning and groundwater modeling. There is debate over whether the contiguous single fracture zone prevalent in the northern and western portions of the expanded model area is hydraulically connected to the thinner, bifurcated fracture zones that are more predominant in the south-central and southeast portions of the expanded model area. This uncertainty can only be addressed using data obtained from additional drilling and testing. In addition, discrete groundwater head and water quality data are not available within large portions of the ECFTX model area, further limiting the assessment of the hydraulic continuity of these fracture zones. Consequently, some hydrogeologists lump the fracture zones into a single unit, while others view the deeper fractured zone as part of the LFA. Additional drilling and testing through the APPZ and into the LFA at other CFWI sites would help further characterize the regional extent, thickness, and productivity of fractured intervals within the APPZ (such as APhpz-1 and APhpz-2 at the Sumica site).

The CTD probe used during the POF-31 and POF-32 packer testing was installed within the turbulent zone immediately below the packer assembly intake. This turbulence likely results in a pressure drop where the CTD probe was installed. If the CTD probe (or other pressure transducer) were installed further from the packer assembly intake, then the pressure measurements collected by the probe or transducer would be less impacted by the turbulent flow and more accurate drawdown estimates could be obtained. This hypothesis should be tested during future packer testing programs by replacing the 1-foot-long intake screen/pipe used during this investigation with a 5-foot-long pipe which is only screened across the uppermost foot of the pipe adjacent to the packer testing assembly inlet. Two pressure transducers would then be installed within the 5-foot-long inlet pipe. One pressure transducer would be installed inside the pipe immediately adjacent to the bottom of the screened interval as was done during this investigation. A second pressure transducer would also be installed inside and close to the bottom of the 5-foot-long pipe to isolate the lower transducer from the turbulent flow that occurs at the top of the 5-foot-long pipe and packer assembly inlet. Differences in the pressures measured by these two transducers are expected due to the turbulence induced near the packer assembly inlet and the lack of turbulence farther away from the inlet. It is anticipated that the lower transducer would provide more accurate pressure measurements than the upper pressure transducer. If this is the case, future packer testing programs will utilize this new configuration.

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### **APPENDICES**

### APPENDIX A: SFWMD SURVEYOR'S REPORT CFWI DMIT WETLANDS WELL – SUMICAN



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

# SURVEYOR'S REPORT

## **CFWI DMIT Wetlands Well - SUMICAN**

Report Prepared by: Elvie Ebanks Date: 5/24/2021

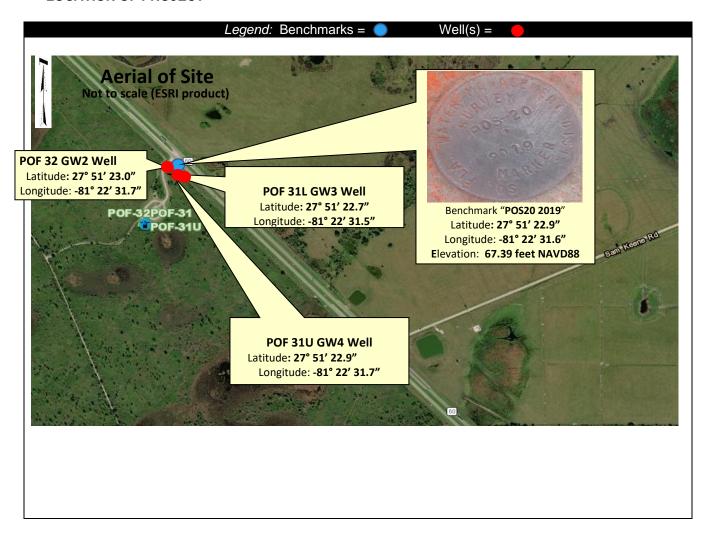
Party Chief: Elvie Ebanks Field Work Date: 5/20/2021 SCADA – Field Operations

### **OVERVIEW OF THE PROJECT**

### **PURPOSE**

The purpose of this Survey is to establish Reference Elevations for monitoring wells by establishing NGS Third order elevations referring to both the North American Vertical Datum of 1988 (NAVD-88) and the National Geodetic Vertical Datum of 1929 (NGVD-29) at the site.

### **LOCATION OF PROJECT**



### **VERTICAL DATUM FOR THE PROJECT**

The vertical datum for the project is the North American Vertical Datum of 1988. For correlation with older data sets, the elevations of the benchmarks are also shown in the National Geodetic Vertical Datum (NGVD) of 1929. The NGVD 29 elevations were derived using data from published NGS superseded values when applicable, otherwise values provided by the South Florida Water Management District in a file named

"NGVD29.txt" were used. The linear unit for all elevations is the U.S. survey feet unless otherwise stated.

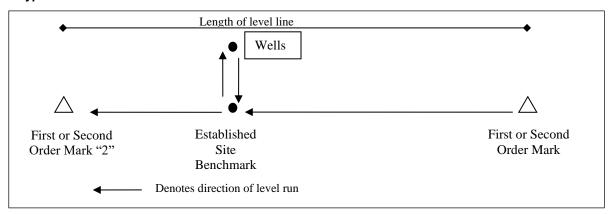
### **LEVELING METHODS**

### **CONFIGURATION OF LEVEL RUNS**

The leveling for the project was performed in accordance with the Federal Geodetic Control Subcommittee standard for Second-Order, Class II geodetic leveling. A brief description of the procedures used is as follows. The run was started at one of the First or Second Order marks and continued through the existing reference point established at the well and closed on the original First or Second Order vertical mark. (see Figure 1. below).

For each well site, a closed loop was run from an established Third Order vertical mark (Site Benchmark).

Figure 1 Typical Level Run Pattern



The FGCS maximum allowable misclosure for this type of run is 0.03' multiplied by the square root of the length of the line in miles.

### **ESTABLISHING REFERENCE ELEVATION FOR WELL**

For Ground Water Well Site (Water Quality/USGS):

- Verify site benchmark elevation using second benchmark
- Set-up level
- Obtain back site for site benchmark
- Obtain elevation for mark set on well head denoted as "reference point"
- Obtain elevation for verification port(s)
- Obtain elevations for corners of concrete well pad, if applicable
- Obtain elevations for natural ground on four (4) sides of well
- Break set-up (with level)

- Obtain back site elevation for mark set on well head denoted as "reference point(s)"
- Close level run on site benchmark

### **EQUIPMENT USED**

All leveling was performed with a conventional level and 25-foot rod.

### **HORIZONTAL LOCATIONS**

### INTRODUCTION

The following instrument was used for the GPS observations:

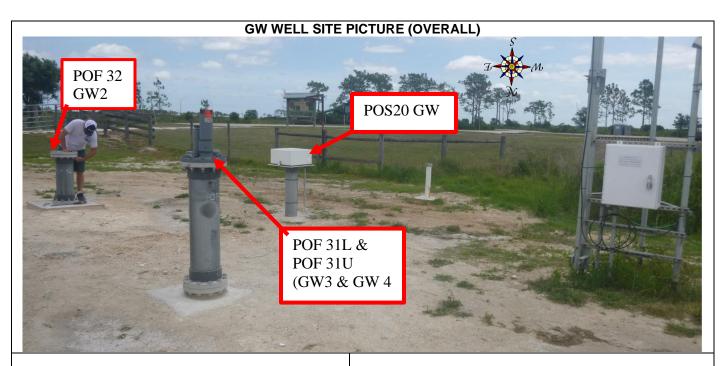
(1) Garmin GPSMAP78 hand-held unit

Description	X, (Easting)	Y, (Northing)	Latitude	Longitude
Description	Coordinates	Coordinates	(DD MM SS.SS)	(DD MM SS.SS)
Site BM POS20 2019	N/A	N/A	27° 51' 22.9"	-81° 22' 31.6"
POF 32 GW2 Well	N/A	N/A	27° 51' 23.0"	-81° 22' 31.7"
POF 31L GW3 Well	N/A	N/A	27° 51' 22.7"	-81° 22' 31.5"
POF 31U GW4 Well	N/A	N/A	27° 51' 22.9"	-81° 22' 31.7"

### **PROJECT RESULTS**

The following tables list the elevations established for each existing or new mark, the level run misclosure, "to-reach" description for each mark and a photo of the mark. All elevations and coordinates are in US Survey Feet.

Description	Reference Elevation (NAVD88)				
Monitoring Well "POF 32" GW2:	70.57 feet				
Monitoring Well "POF 32L" GW3;	73.20 feet				
Monitoring Well "POF 32U" GW4:	72.74 feet				
Site Benchmark "POS20 2019"	67.39 feet (*) Mark Settled.				
North Ground Elevation:	67.5 feet				
South Ground Elevation:	67.5 feet				
NE Concrete Pad Elevation: POF32	67.55 feet				
SW Concrete Pad Elevation: POF32	67.55 feet				
NE Concrete Pad Elevation: POF 31	67.50 feet				
SW Concrete Pad Elevation: POF 31	67.50 feet				
Average Ground Elevation:	67.5 feet				
Average Concrete Pad Elevation:	67.52 feet				
Site Offset (NAVD88 to NGVD29): + 1.18 feet					



POF 32 GW2 REFERENCE POINT PICTURE (Close-up)



### **GW WELL TAG PICTURE**

















### **POS20 GW WELL**

Note: POS20 GW- Not being Reported on in this Report.







### SITE BENCHMARK "POS20 2019" DATA

### **BENCHMARK PICTURE** (Up-close)



**TO REACH:** FROM THE INTERSECTION SAM KEAN RD AND SR60. GO WEST ON SR60 FOR 0.6MILE TO SUMICA PARK ON LEFT. ENTER GATE TO SUMICA PARK AND STATION IS ON WELL PAD FOR (POS20 GW) AT WELL CLUSTER INSIDE GATE ON LEFT.

# 

## **SUMICAN WELLS - FIELD NOTES**

4CADA FB#14	5.20-21 11
her 24 twp 30 R to Entablish REF FIEL Walls - POF 32 (GNZ), F	ge 29 Latham Latham OF 31-L (Gal 3) POF 31-W/GUL)
1) 12 + + + + + + + 1. BM POZ LO . 5.4 73.96 2019	- Elev Remarts (7.42 Fact) (67.39) (5/20/21)
POF. 32 (CN2)	3,360 70.60 (10.57)
FOF 31 L (6W3) POF 31 U	0.73 73.23 (13.20) 1.19 72.77 (72.74)
CAR 90520 Well.	n.16 70.80 (10.77)
POF 31 U 2.95 73.75 POF 31 U	0.98 72.77
POF 32 BM P0520	137 67.42 (67.42)
2019	
* Banch Mark Gettlest 6.	03) From. 2019 E. 5/20/21

		South Florida V	Nater Management L	District Benchmark Datasi	neet		
Designation	: POS-20	Project Name:	CFWI-SUMICA PARK	Type:	v	State Plane Zone: FL	East
Stamping		Field Book Name:		Field Book Page:		_	
	PICKETT & ASSOCIATES	Recovered By:		Recovery Date:			
	John M. Clyatt	Established Date:		Status:			
·			GEOGRAPHIC POSITION				
Section	: 24	Township:		30 SOUTH	Range:	29 EA	ST
County			LK. Weohyakapka SE	Quad Index:	_	NGS Source BM(s):	
NAD83 Adj. Year		Vertical Datum:		Horizontal Datum:	NAD1983	NGS PID(s):	
NAVD88 Elevation (feet):		NGVD29 Elevation (feet):		2022 Elevation:		NGS NAVD88 Elev (ft):	
NAVD88 Class		NGVD29 Class:		Other Elevation:		NGS NAVD88 Elev (m):	
NAVD88 Order	3	NGVD29 Order:		Other Elevation Type:		NGS 2022 Elev (ft):	
				nter Topographic Engineering Center Alexandria, Vi	sinia Windows-based program to o		datum's uninervednos
vertcon05.05 files supplied by the U.S. Ar	rmy Corps of Engineers South Atlantic Divisio	n, Jacksonville Fl.)					
rtical Datum Offset: +	1.18		IGS Elevation or ngvd29.txt		OPUS Ortho Height:		
Northing (Y) (feet):	1,280,665.51	Easting (X) (feet):	534,858.70	Source of L	atitude & Longitude:		
Latitude:		51	22.86	Longitude:	81	22	31.54
	DD*	MM'	SS"		DD*	MM'	SS*
itude (Decimal Degrees):	27.85635			Longitude (Decimal Degrees):	-81.37542778		
			RECOVERY D				
scription/Notes:							
otable Landmarks: ther Source Benchmarks:			<u>PICTURE</u> Aerial View of O				
			PICTURE Site Sketo				

Page 1 of 1

Elevations are shown in NAVD88 datum unless noted otherwise

Party Chief: ELVIE EBANKS

Field Book: SCADA Field Book #14 Page(s): 11

Site Benchmark: "POS20 2019" Elevation = 67.39 feet (NAVD88)

Date of Survey: MAY 20, 2021

Offset: = +1.18 feet add this value to NAVD88 to obtain NGVD29 values

#### SURVEYOR'S CERTIFICATION

I hereby certify that as a duly registered Florida Professional Surveyor and Mapper, I have prepared this Report for the South Florida Water Management District with the information as outlined. This report is not complete without the referenced information being available during an examination of said Report. I further certify that the precision achieved and the care taken in collecting the data to formulate this Report are adequate for the purpose of the assignment and that the standards set forth in Chapter 5J-17.050 through 5J-17.052 of the Florida Administrative Code have been met.

Date of Survey May 20, 20201

Elvie D. Ebanks PSM
Professional Surveyor and Mapper
State of Florida
Certificate No. 5765

# APPENDIX B: SUMMARY OF DRILLING, TESTING, AND WELL CONSTRUCTION ACTIVITIES

Table B-1. Summary of drilling, testing, and well construction activities.

Start Date	End Date	Activity	Site Geologist
3-10-2020	3-11-2020	Mobilized Failing rig to site. Installed make-up water well SUMICAN-PW. Collected SPT samples from 7 to 87 ft bls.	K. Smith
3-16-2020	3-20-2020	Mobilized Versadrill for POF-31 installation. Drilled 22-inch-diameter mud-rotary borehole. Installed 16-inch-diameter steel surface casing and grouted to land surface. District field trailer mobilized to site. Drilled 6-inch-diameter mud-rotary pilot hole from 81 to 157 ft bls.	L. Lindstrom
3-23-2020	3-27-2020	Drilled 6-inch-diameter mud-rotary pilot-hole from 157 to 285 ft bls. Geophysical logging of pilot hole by RMBaker. Reamed 15-inch borehole from 81 to 275 ft bls in preparation for casing installation.	S. Coonts
3-30-2020	4-3-2020	Installed 10-inch PVC conductor casing and grout to land surface. Cleared cement plug to depth of 290 ft bls. Installed temporary 5-inch-diameter and 4-inch casings to 290 ft bls. Secured the well and demobilized from the site.	E. Richardson
4-4-2020	5-31-2020	Work hiatus due to Coronavirus.	
6-1-2020	6-5-2020	Huss mobilized to site with Failing rig (Versadrill being repaired) and set up over POF-31. Cored from 290 to 440 ft bls and completed packer tests 1 through 5.	K. Smith
6-8-2020	6-12-2020	Cored from 440 to 590 ft bls and completed packer tests 6 through 10.	E. Richardson
6-15-2020	6-19-2020	Cored from 590 to 790 ft bls and completed packer tests 11 through 16. Experienced problems with unconsolidated materials sloughing down-hole. Extra airlifting required to clear corehole.	H. Saini
6-22-2020	6-26-2020	Cored from 790 to 910 ft bls and completed packer tests 17 through 20. Progress slowed by falling unconsolidated materials requiring airlifting after every core run.	S. Coonts
6-29-2020	7-2-2020	Cored from 910 to 964 ft bls and completed packer tests 21 through 22. Falling materials stopped work at 964 ft bls until the Versadrill could be remobilized and additional temporary casing could be installed.	H. Saini
7-6-2020	7-14-2020	Flooded site conditions prevented remobilization of Versadrill. District authorized unplanned time and materials to raise the site and allow work to continue. Four dump truck loads of shell and gravel road base material, and 6 dump truck loads of ballast stone delivered and spread over the site. Versadrill remobilized to site and setup over POF-31. Additional 50 ft of 5-inch-diameter temporary casing installed. Corehole reamed to 5-inches in diameter.	
7-15-2020	7-17-2020	Temporary 4-inch-diameter casing installed to 960 ft bls. Cored from 964 to 1,000 ft bls and completed packer test 23. Annular zone was flowing under mild artesian conditions.	E. Richardson
7-20-2020	7-24-2020	Cored from 1,000 to 1,130 ft bls and completed packer tests 24 through 27.	S. Coonts
7-27-2020	7-31-2020	Cored from 1,130 to 1,290 ft bls and completed packer tests 28 through 33.	H. Saini
8-3-2020	8-7-2020	Cored from 1,290 to 1,380 ft bls and completed packer tests 34 through 36.	K. Smith
8-10-2020	8-14-2020	Cored from 1,380 to 1,500 ft bls and completed packer tests 37 through 40. Placed gravel from 1,407 to 1,500 ft bls and capped with bentonite grout (50 gallons).	E. Richardson

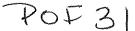
Table B-1. Continued.

Start Date	End Date	Activity	Site Geologist
8-17-2020	8-21-2020	Pulled core casing and installed tremie pipe for grout backfill of MCU_I. On 8/18/20 pumped grout, hard tagged at 1,176 ft bls, added 6 sacks of grout. On 8/19/20 hard tagged grout at 1,128 ft bls. Pulled tremie and temporary casing. Reamed to 10-inch diameter from base of casing (275 to 416 ft bls).	
8-24-2020	8-28-2020	Reamed to 10-inch diameter from 416 to 900 ft bls. Removed temporary casings and prepared borehole for geophysical logging.	
8-31-2020	8-31-2020	RMBaker began initial camera survey and found the borehole blocked at 380 ft bls. Huss ran pipe and bit back in to push the rock down. Huss went to 420 ft bls without issue, but downhole camera showed the borehole blocked at 428 ft bls. Logging was postponed until borehole could be cleared.	S. Krupa
9-1-2020	9-9-2020	Cleared and redeveloped the borehole. Waited on availability of geophysical logger.	
9-10-2020	9-11-2020	Geophysical logging. Installed 4-inch-diameter Certa-Lok blank casing to 816 ft bls and grouted in place using cement baskets.  Placed 18 cubic ft of gravel from 816 to 800 ft bls to capture top of APPZ flow zone in the monitored interval; added grout on top of gravel.	H. Saini
9-14-2020	9-16-2020	Tagged grout at 787 ft bls. Grouted annular zone from 787 to 594 ft bls using cement-bentonite grout.	H. Saini
9-17-2020	9-18-2020	Developed the completed monitoring zones for 5 hours using airlifting and pumping methods. Installed final wellhead.	
9-21-2020	9-30-2020	Moved drill rig to previously staked position of POF-32 and drilled mud rotary borehole. Installed surface and conductor casings to the depths identified in POF-31 pilot hole (84 and 270 ft, respectively).	
10-1-2020	10-29-2020	Drilled 10-inch-diameter reverse-air borehole to target depth for final steel casing to top of LFA (1,405 ft bls).	
10-30-2020	11-6-2020	Geophysical logging completed by RMBaker. USGS conducted OBI logging. Installed 1,033 ft of steel casing.	E. Richardson
11-9-2020	11-9-2020	Work cancelled due to poor weather from Tropical Storm Eta.	
11-10-2020	11-13-2020	Installed remaining steel casing and started cementing process.	S. Coonts
11-16-2020	11-20-2020	Cementing.	K. Smith
11-23-2020	11-25-2020	Drilled out cement stuck in steel casing. Removed stuck tremie pipe.	
11-26-2020	11-27-2020	Thanksgiving Break.	
11-30-2020	12-7-2020	Drilled to 1,500 ft at POF-32, where packer testing in POF-31 stopped. At 1,440 ft bls, the tricone bit that was being used to ream lost a cone. After failing to drill through the lost cone, Huss attempted to retrieve the cone with a magnet. Magnet was unsuccessful, so the cone had to be cored out. The hole was then drilled to 6 inches in diameter using reverse air to the previously cored depth, and 1,500 ft of 4-inch-diameter temporary steel casing was installed.	
12-8-2020	12-11-2020	Cored and completed packer test from 1,500 to 1,570 ft bls	H. Saini
12-14-2020	12-18-2020	Cored and completed packer test from 1,570 to 1,680 ft bls	E. Richardson
1-4-2021	1-8-2021	Cored and completed packer test from 1,680 to 1,840 ft bls	E. Richardson
1-11-2021	1-15-2021	Cored and completed packer test from 1,840 to 1,960 ft bls	S. Coonts
1-18-2021	1-22-2021	Cored and completed packer test from 1,960 to 2,000 ft bls	K. Smith

# APPENDIX C: WELL COMPLETION REPORTS

No. 3449 P. 2/5

	4
STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT,	4400640B124
REPAIR MODIFY, OR ABANDONA WELL	Permit No. Floritha Unique ID
A Southwest PLEASE FILL OUY ALL APPLICABLE FIELDS ("Denotes Required Fields Where Applic	1
SL Johns River  Bouth Florida  Sswannee River  Thewaterwell contractors responsible for completing this form and forwarding the permit application to the appropriate delegoned authority where applicable.	B2-524 Quad No
DEP	CUPM/UP Application No
Delegated Authority (if Applicable)	AROVETHIS LIVE FOIL OWNER LUSE ONLY
ISEUMO TO BOX 24680 West tolo	o Beh Pl 334110
owier, Legis Name if Gorporation Address Cake Wales	State Zib Telephone Number
Well Location - Address, Road Name or Number, City	N.DI435D
3. Parcel ID No. (PIN) or Alternata Key	Lot Block Unit Check If 62-524; Yes No
Spotlen or Land Grant Township Range County	Subdivision Stephane and scaling Cops
5. Stemanie StallSM 14h 934 353-5167-1 Water Well Contractor License Number Tajaphasa Num	
6. 35920 State Road 52 Made (14 Water Well Contractors Address	<u> </u>
7. "Type of Work: Gonstruction Repeir Modification Abandonment	2 .
8 *Number of Proposed Wells  9. *Specify Intended Use(s) of Well(s):	Research for Regard, Modification, of Abstraction In Data Blamp
Domestic Diandecape Infigation Deprecial infigation	□ Site investigations  Monitoring
☐ Public Water Supply (Limited Use/DOH) ☐ Nursery Imigation	☐ Test
filter and commence of the forest control of the co	☐ Earth-Coupled Geothermal ☐ HVAC Supply
Class V Injection: D Recharge D Commercial/Industrial Disposal Aquifer Storag	HVAC Return e and Recovery Cordinage
Remediation: LiRecovery LiAir Spange LiOther (Describs)	Olifoles Usa Only
Dither (Gearlie)  10.*Distance from Septic System if ≤ 200 ft. 11. Facility Description	12, Estimated Start Date 3000
13. Estimated Well Depth 200ft. Estimated Casing Depth 200ft. Primary Casing Di	lameter 4. In. Open Hole: From 20276 1341.
14. Estimated Screen Interval: From To fl.  18.*Primary Cooling Malerial: Black Steel Blac	alnicas Staet
Not Cased Other	The LD in
18. Secondary Casing: Detectors Casing Diluteter 17. Secondary Casing Material; Distances Distances Distances 18. Secondary Casing Material; Distances Dista	<u> </u>
18.*Method of Construction, Repair, or Abandonment: Auger Acable Tool Jettod	Rotary D Sonic
Combination (10% or More Methods) Aland Driven (Well Point, Sand Point)  Horizontal Dilling Piugged by Approved Method Hother (00%)	Hydrautic Point (Direct Push)
19. Proposed Grouting Interval for the Primary, Secondary, and Additional Ceeling: From	
From To Seal Material ( Bentonite ( Neat Cement Other From To Seal Material ( Bentonite ( Neat Cement Other	
From To Seal Material ( Bentonite Neat Cement Other, 20. Indicate total number of existing wells on site List number of existing	
21. Is this well or any existing well or water withdrawel on the owner's configuous property co	vered under a Consumptive/Water Use Permit (CUP/WUP)
or CUPMUP Application? Yes No Kyes, complete the following: CUPM  22. Latitude Longitude	Digital Afeit in Mo.
23 Deta Objetiged From: PIGBS TIMEN TISurvey Datum:	NAD 27 NAD 88 WGS 84
i megery want an interpretation of the control of t	even or of the property. Mult perfect when provided the protection and final and assess of the control of the property and the protection of the property and the protection of the protection o
the city early that tell among to the time of the Art Tracka Artificial Man Coan, and the Lyrale to the coan and the Lyrale to the second trackable to the coan and the Lyrale to the Coan and t	The viewer supplies his times Teston, or supplies and authorized by may it woods
9342	Owner or Agent
	-77g-1-
Approved Granted By Afficiant Sando Date of it 5 gro	Expiration Date Y J J J Hydrologist Approval while
Fee Received \$ Received No.  THIS PERMIT IS NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESE	ENTATIVE OF THE WMD OR DELEGATED AUTHORITY. THE
PERMIT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL CONSTRUCTION, REPAIR, MODIFIC DEP Form: 62-532 600(1) Incomerated in 62-532 400(1), P.A.C. Effective Date: October 7, 2010	ATION, OR ABANDONMENT ACTIVITIES. Page 1 of 2



# STATE OF FLORIDA WELL COMPLETION REPORT

ALLAPPLICABLE FIELDS ired Fields Where Applicable)

☐Southwest	PLEASE FILL OUT
□ Northwest	PLEASE, FILL OUT (*Denotes Requi
□St_Johns River	,
South Florida	

Date Stamp

☐ Suwannee River ☐ DEP ☐ Delegated Authority (If Applicable)	Official Use Only
1. Permit Number 496 P 2041598 SUP MUP Number	*DID Number 62_524 Delineation No.
· · · · · · · · · · · · · · · · · · ·	*Number of permitted wells not constructed, repaired, or abandoned
STIMO	
II	4.*Completion Date 912100 5. Florida Unique ID
6. Well Lopation - Address, Road Name or Number, City, ZIP	Wales, Pl. 33898
	ant*Township_30 *Range_34
8. Latitude Longitude .	
9. Data Obtained From: GPS Map Survey	Datum:NAD 27NAD 83WGS 84
10.*Type of Work: Construction Repair Modification  11.*Specify Intended Use(s) of Well(s):	Agricultural Irrigation  Livestock  Monitoring  Nursery Irrigation  Commercial/Industrial  Earth-Coupled Geothermal
Public Water Supply (Community or Non-Community/DEP)  Class 1 Injection	Golf Course Irrigation HVAC Supply HVAC Return
Class V Injection: Recharge Commercial/Industrial Disposal	
Remediation: Recovery Air Sparge Other (Describe)	
Other (Describs)	
12.*Drill Method;AugerCable Tool Rofary	Combination (Two or More Methods)JettedSonic
15.*Casing Material:Black SteelGalvanizedPVC _	r Levelft. AfterHours atGPMftAboveBelow Land Surface *Flowing:YesNoStainless SteelNot CasedOther
16,*Total Well Depth $900$ ft. Cased Depth $810$ ft. *Open Hole; From	m8/16_To_900ft. *Screen: FromToft. Slot Size
17.*Abandonment: Other (Explain)  From ft. To ft. No. of Bags Seal Material (Che From ft. To ft. No. of Bags Seal Mater	eck One): Neat Cement Bentonite Other
18.*Surface Casing Diameter and Depth; Dia / Le in. From Depth; Dia / L	al Material (Check One): Neat Cement Bentonite Other al Material (Check One): Neat Cement Bentonite Other
Dia in From ft. To ft. No. of Bags Sel	al Material (Check One): Neat Cement Bentonite Other
Dia in From ft To ft No. of Bags Se Dia in From ft To ft No. of Bags Se	al Material (Check One); Neat Cement Bentonite Other al Material (Check One); Neat Cement Bentonite Other al Material (Check One); Neat Cement Bentonite Other
Dia in. From ft, To ft. No. of Bags Se Dia in. From ft. To ft. No. of Bags Se	al Material (Check One); Neat Cement Bentonite Other al Material (Check One); Neat Cement Bentonite Other al Material (Check One); Neat Cement Bentonite Other
22, Pump Type (if Known):CentrifugalJetSubmersibleTurbine	23. Chemical Analysis (When Required):
Horsepower Pump Capacity (GPM) Pump Depth ft. Intake Depth ft.	Ironppm Sulfateppm Chlorideppm
24. Water Well Contractor: *Contractor Name Stepho Live Stall Must N*License Number	9342 E-mail Address Stephanie a hussarilling. com
*Contractor's Signature	*Driller's Name (Print or Type) Nev. n heffuse

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT 2379 BROAD STREET, BROOKSVILLE, FL 34604-6899 PHONE: (352) 796-7211 or (800) 423-1476 WWW.SWFWMD.STATE.FL.US

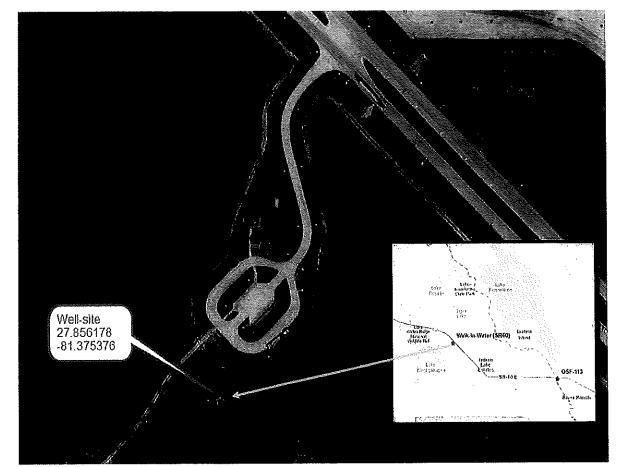
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT 4049 REID STREET, PALATKA, FL 32178-1429 PHONE: (386) 329-4500 WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT 152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712 (U.S. Highway 90, 10 miles west of Tallahassee) PHONE: (850) 539-5999 WWW.NWFWMD.STATE.FL.US SOUTH FLORIDA WATER MANAGEMENT DISTRICT P.O. BOX 24680 3301 GUN CLUB ROAD WEST PALM BEACH, FL 33416-4680 PHONE: (561) 686-8800 WWW.SFWMD.GOV

**SUWANNEE RIVER WATER MANAGEMENT DISTRICT** 9225 CR 49 LIVE OAK, FL 32060 PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)

PHONE: (386) 362-1001 or (800) 226-1066 (Florida Only WWW.MYSUWANNEERIVER.COM

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From	' <u>f</u>	10	ii.	Color	Contro			aterial ^		
From From From	it-	Th.		Color	Grain S	nze (r, w, o	·)	<del></del>		
Etom	ft,	To	Th.	Color	Grain S	ize (F, M, C	/ <u> </u>	aterial \		
From				Color	——————————————————————————————————————	∤ze (F, M, C		aterial	· · · · · · · · · · · · · · · · · · ·	
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From	ff.	To	ft.	Golor /		AE (EW. C	M M	aterial		
From	ft.	To	ft.	1 Aplor++	Grain	lke (FW, C	?	aterial/_		
From	ft.	To	ft.	<b>Color</b> ✓	Grain Grain	te KIKC	<u>)</u>	eterial		
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From	ft.	To	ft.	Color	Grain 8	iize (F, M, C		aterial		
From	ft,	To	ft.	Color	Grain 8	Size (F, M, C		aterial		
From	fL	10	TL	Color	Grain 9	Size (F, M, C		aterial		
From	11.	10	IL.	Color	Grain 9	lize (F, M, C		laterial		
From		To	ft.	Color	Grain S	Size (F, M, C	) M	aterial		
From			ft.	Color	Grain 5	Size (F. M. C	<li>M:</li>	aterial		
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From	ft.	To	ft.	Color	Grain 9	3īze (F, M, C	) M	aterial		
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From	ft.	To	ft.	Color	Grain 8	Size (F, M, C	:) M	aterial	· · · · · · · · · · · · · · · · · · ·	
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From_										



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Figure 5. SUMICA Drill-Site Location

C.

		Description/Comments
85.0		GRAY DOLOSTONE, 20% GRAY SANDY CLAY; GRAY (N5)
90.0	100.0	GRAY DOLOMITE, 10% GRAY SANDY CLAY, 40% VERY PALE ORANGE SHELL FRAGMENTS; GRAY (N5)
100.0	115.0	VERY PALE ORANGE SHELL FRAGMENTS, 5% DARK GREY CLAY, AND 30% GREENISH-GREY DOLOSTONE
115.0		VERY PALE ORANGE SHELL FRAGMENTS AND 30% GREENISH-GREY DOLOSTONE
125.0		VERY PALE ORANGE SHELL FRAGMENTS, 5% DARK GREY CLAY, AND 30% GREY DOLOSTONE
140.0	145.0	LIGHT BROWNISH GRAY SHELL FRAGMENTS, 40% GREY DOLOSTONE, 3% PHOSPHATE, 1% QUARTZ SAND LIGHT BROWNISH GRAY SHELL FRAGMENTS, 40% GREY DOLOSTONE, 3% DARK GREY CLAY, 1% PHOSPHATE,
145,0	155.0	1% QUARTZ SAND
155.0		GRAY DOLOSTONE, 10% LIGHT BROWISH GRAY SHELL FRAGMENTS, 3% DARK GREY CLAY, 1% PHOSPHATE GRAY DOLOSTONE, 10% LIGHT BROWISH GRAY SHELL FRAGMENTS, 7% DARK GREY CLAY, 5% PHOSPHATE, 30% SALT AND PEPPER PHOSPHATIC DOLOSTONE
160.0		GRAY PHOSPHATIC DOLOSTONE, 15% DARK GREY CLAY, 10% LIGHT BROWNISH GRAY SHELL FRAGMENTS, 5%
175.0		PHOSPHATE GRAINS
185.0		GRAY PHOSPHATIC DOLOSTONE, 5% GREY CLAY, 20% SHELL FRAGMENTS, 7 PERCENT PHOSPHATE GRAINS GRAY PHOSPHATIC DOLOSTONE, 30% GREY CLAY, 10 PERCENT SHELL FRAGMENTS, 5 PERCENT PHOSPHATE GRAINS
200.0		DARK GREY CLAY, LIGHT GRAY DOLOSTONE, 10 PERCENT SHELL FRAGMENTS, 10 PERCENT PHOSPHATE
205.0		GRAINS DARK GREY CLAY, LIGHT GRAY DOLOSTONE, 10 PERCENT SHELL FRAGMENTS, 10 PERCENT PHOSPHATE
225.0	230.0	GRAINS, SHARK'S TOOTH DARK GREY CLAY, LIGHT GRAY DOLOSTONE, 10 PERCENT SHELL FRAGMENTS, 20 PERCENT PHOSPHATE
230.0	245.0	GRAINS LIGHT GRAY DOLOSTONE, LIGHT GREEN CLAY, 10 PERCENT SHELL FRAGMENTS, 20 PERCENT PHOSPHATE
245.0	250.0	GRAINS LIGHT GRAY DOLOSTONE, LIGHT GREEN CLAY, 30 PERCENT SHELL FRAGMENTS, 5 PERCENT PHOSPHATE
250.0	260.0	GRAINS
260.0		LIGHT GRAY DOLOSTONE, 40 PERCENT SHELL FRAGMENTS, 1 PERCENT PHOSPHATE GRAINS, Dark Grey clay
265.0		LIGHT GRAY DOLOSTONE, 50 PERCENT SHELL FRAGMENTS, 1 PERCENT PHOSPHATE GRAINS, Dark Grey clay
280.0		LIGHT GRAY DOLOSTONE, LIGHT ORANGE LIMESTONE, SHELL FRAGMENTS, FORAMINIFERA - LEPIDOCYCLINA
285.0 290.0		LIGHT ORANGE LIMESTONE, SHELL FRAGMENTS, FORAMINIFERA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR INDURATION; LEPIDOCYCLINA
		NO RECOVERY
292.0		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR INDURATION; MILIOLID
302.0		NO RECOVERY
304.0		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
314.0		INDURATION; LEPIDOCYCLINA LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; POOR
315.3		INDURATION; LEPIDOCYCLINA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
317.0		INDURATION; LEPIDOCYCLINA
319.6	320.0	NO RECOVERY LIMESTONE' (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
320.0	320.6	POOR INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
320.6	321.2	MODERATE INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
321.2	322,4	POOR INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
322.4	323,1	MODERATE INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
323.1	323.7	POOR INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
323.7	324.0	POROSITY; GOOD INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS
324.0	i	NO RECOVERY LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE
330.0	330.6	INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
330.6	333.3	INDURATION

1		LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY;
333.3		POOR INDURATION; BIVALVES LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY;
334.0	334.6	POOR INDURATION; BIVALVES LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY;
334.6	336.5	POOR INDURATION; BIVALVÉS, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
336.5	336.7	POROSITY; POOR INDURATION; BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
336.7		POROSITY; MODERATE INDURATION; BIVALVES, GASTROPODS
338.5	340.0	NO RECOVERY LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
340.0	340.5	POROSITY; POOR INDURATION; BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
340.5	341.1	POROSITY; MODERATE INDÚRATION; BIVALVES, GÀSTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
341.1	341.3	MODERATE INDURATION; BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
341.3		POOR INDURATION; BIVALVES, GASTROPODS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
343.0	344.0	POOR INDURATION; BIVALVES, GASTROPODS, LEPIDOCYCLINA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGHT INTERGRANULAR AND MOLDIC POROSITY;
344.0	346.0	POOR INDURATION; BIVALVES, GASTROPODS, LEPIDOCYCLINA, PELLETS
346.0	348.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS, PELLETS
348.0	350.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS
350.0	354.9	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES
354.9	356.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, ECHINOIDS, FORAMINIFERA
356.0	356.7	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; POOR INDURATION; ECHINOIDS, FORAMINIFERA
356.7		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR INDURATION; ECHINOIDS, FORAMINIFERA, AND BIVALVES
		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
357.5 358.0		INDURATION; ECHINOIDS, FORAMINIFERA NO RECOVERY
		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS
360.0		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR
361.1		POROSITY; POOR INDURATION; MOLLUSKS LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE MOLDIC AND INTERGRANULAR
362.7	363.0	POROSITY; POOR INDURATION; MOLLUSKS LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR, MOLDIC AND
363.0		INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR
367.6		POROSITY; POOR INDURATION; MOLLUSKS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR
368.0	368.5	POROSITY; POOR INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
368.5		INDURATION
369.0		NO RECOVERY LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR
370.0	372.0	POROSITY; POOR INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); POOR MOLDIC AND INTERGRANULAR POROSITY;
372.0	373.6	POOR INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;
373.6	378.0	LAMINATIONS
378.0	380.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
380.0	381.1	INDURATION; LAMINATIONS, FORAMINIFERA, GASTROPODS, BIVALVES LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
381.1	386.2	INDURATION; FORAMINIFERA, GASTROPODS, BIVALVES
386.2	389.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
389.0	390.0	INDURATION; FORAMINIFERA, GASTROPODS, BIVALVES

390.0		LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, MOLDIC, AND
391.5		INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, GASTROPODS, BIVALVES LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR
394.3		POROSITY; POOR INDURATION; GASTROPODS, BIVALVES LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); POOR INTERGRANULAR AND VUGGY POROSITY; POOR
400.0		INDURATION; ECHINOIDS
401.3 403.7		LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION
104.4	405.1	LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
105.1		ECHINOIDS, SOME LAMINATIONS
06.9	407.3	LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; MODERATE
107.3	408.2	INDURATION; ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;
108.2		ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
108.7		ECHINOIDS LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY POROSITY; POOR
410.0	410.9	INDURATION; FRACTURED LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY POROSITY; POOR
410.9	413.3	INDURATION LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY POROSITY; POOR
413.3	413.9	INDURATION LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); MODERATE INTERGRANULAR, MOLDIC, AND VUGGY
413.9	415.2	POROSITY; POOR INDURATION; ECHINOIDS; TURITELLA MOLDS LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY POROSITY; POOR
115.2	416.0	INDURATION; ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY POROSITY; POOR
416.0	417.0	INDURATION; ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY POROSITY; POOR
417.0	419.5	INDURATION; ECHINOIDS
419.5		LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
420.0		ECHINOIDS LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION,
422.9		ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;
423.9		ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
424.3	426.5	SOME FRACTURES, ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;
126.5 127.3		ECHINOIDS LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION
427.9		LIMESTONE (PACKSTONE); YELLOWISH GREY (5Y 8/1); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION; SOME LAMINATIONS
428.5	429.0	LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION; LAMINATIONS
429.0	429.6	CLAY; LIGHT GREENISH GRAY (5GY 8/1); NO OBSERVABLE POROSITY; POOR INDURATION; LAMINATIONS
429.6	430.0	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); MODERATE INTERGRANULAR POROSITY; POOR INDURATION LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
430.0	431.0	FORAMINIFERA  LIMESTONE (PACKSTONE); PALE BROWN (51 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;  LIMESTONE (WACKESTONE); PALE BROWN (52 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
431.0	432.7	SOME LAMINATIONS LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
132.7		FORAMINIFERA
434.0		NO RECOVERY LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
440.0		FORAMINIFERA, ECHINOIDS LIMESTONE (WACKESTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
441.1	441.8	FORAMINIFERA

		LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
441.8	442.8	FORAMINIFERA
442.8		LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); MODERATE INTERGRANULAR POROSITY; MODERATE
444.2		INDURATION; FORAMINIFERA, ECHINOIDS, ORGANICS LIMESTONE (WACKESTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
445.8		FORAMINIFERA LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
446.5		FORAMINIFERA LIMESTONE (MUDSTONE); WHITE (N9); NO OBSERVABLE POROSITY; MODERATE INDURATION
447.7	448.0	LIMESTONE (MODSTONE), WHITE (N9), NO OBSERVABLE POROSITY, MODERATE INVOITATION  LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION
448.0	448.3	LIMESTONE (MUDSTONE); WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; FRACTURED
448.3 449.0		NO RECOVERY
450.0	450 S	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION
450.5	451.3	LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION
451.3		LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; MODERATE INDURATION LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; LOW INDURATION;
451.9	,	ECHINOIDS LIMESTONE (WACKESTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR AND MOLDIC POROSITY; LOW
452.8		INDURATION; ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); MODERATE INTERGRANULAR POROSITY; POOR
454.2		INDURATION; LAMINATIONS LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
454.9		LEPIDOCYCLINA LIMESTONE (PACKSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
455.8		LEPIDOCYCLINA, INDURATIONS, SOME FRACTURES LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
456.5		FRACTURES
457.4		CLAY; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION;
457.7		NO RECOVERY LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION; ECHINOIDS (WEISBORDELLA CUBAE)
460.0 461.6		LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION; ECHINOIDS (WEISBORDELLA CUBAE), SOME LAMINATIONS
463.7		LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION
464.2	467.0	CLAY; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION;
467.0		NO RECOVERY
470.0 471.2		LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION LIMESTONE (PACKSTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; POOR INDURATION
471.9	475.5	LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); NO OBSERVABLE POROSITY; POOR INDURATION
475.5	476.0	LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION
476.0	477.9	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION
477.9		LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION
478.6	479.4	LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION
479.4	480.0	NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION;
480.0	481.5	ORGANICS LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY, POOR INDURATION, LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION;
481.5	485.8	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANDLAR POROSITY, POOR INDURATION,     ORGANICS, LAMINATIONS
485.8		CLAY; YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;
487.0	490.0	NO RECOVERY
490.0	491.0	CLAY; YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;
491.0		LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION
492.4	493.0	LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION CARBONATE GRAVELLY SAND; YELLOWISH GRAY (5Y 8/1); HIGH INTERGRANULAR POROSITY;
493.0	493.7	UNCONSOLIDATED

LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR AND MOLDIC POLY 493.7 496.5 INDURATION 500.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR AND MOLDIC 500.0 501.9 POOR INDURATION; SOME LAMINATIONS LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDUF 501.9 503.6 FRACTURES LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDUR 503.6 505.0 SOME LAMINATIONS LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR IND 505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; INDURATION; LAMINATIONS, CROSS BEDDING	C POROSITY; RATION; INDURATION;
LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR AND MOLDIC 501.9 POOR INDURATION; SOME LAMINATIONS LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDUF 501.9 503.6 FRACTURES LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURSTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURSTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR INDURATION 505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; LIMESTONE (WACKESTONE); PA	RATION; INDURATION;
501.9 POOR INDURATION; SOME LAMINATIONS LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDUF 501.9 503.6 FRACTURES LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR I 503.6 505.0 SOME LAMINATIONS LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR IND 505.0 505.9 FRACTURED LIMESTONE (WACKESTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION 505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; I	RATION; INDURATION;
501.9 503.6 FRACTURES LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR I 503.6 505.0 SOME LAMINATIONS LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR IND 505.0 505.9 FRACTURED LIMESTONE (WACKESTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION 505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; I	INDURATION;
503.6 505.0 SOME LAMINATIONS LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR IND 505.0 505.9 FRACTURED LIMESTONE (WACKESTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION 505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; I	1
505.0 505.9 FRACTURED LIMESTONE (WACKESTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION 505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; I	
505.9 506.8 FORAMINIFERA 506.8 510.0 NO RECOVERY LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY; I	
LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY;	"
510.0 511.0 INDURATION; LAMINATIONS, CROSS BEDDING	POOR
LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); MODERATE INTERGRANULAR POROSIT	
511.0 512.3 INDURATION; LAMINATIONS, FORAMINIFERA	
512.3 515.2 LIMESTONE (MUDSTONE); WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; FRACT	URED
515.2 516.5 DOLOMITE; GRAYISH ORANGE (10YR 7/4); MODERATE MOLDIC AND VUGGY POROSITY; GOOD IN	
516.5 519.2 DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); HIGH MOLDIC AND VUGGY POROSITY; GOOD I	INDURATION
519.2 520.0 NO RECOVERY LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POO	OR INDURATION;
520.0 524.1 ECHINOIDS, SOME FRACTURES, THIN CLAY LAMINATIONS LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POO	OR INDURATION;
524.1 525.5 FRACTURED, CLAYEY	
525.5 526.5 CLAY; YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION; 526.5 530.0 NO RECOVERY	
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGE 530.0 532.0 POROSITY; MODERATE INDURATION; GASTROPODS, FORAMINIFERA	RANULAR
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY 532.0   INDURATION	/; MODERATE
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGE 534.0 535.1 POROSITY; MODERATE INDURATION; ORGANICS	RANULAR
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY 535.1 535.7 INDURATION	/; MODERATE
535.7 539.0 LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR I	INDURATION
539.0 540.0 NO RECOVERY	
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY 540.0 541.6 INDURATION	
LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; Postular 541.6 542.3 INDURATION	OOR
542.3 543.6 LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDUI	RATION ROSITY:
543.6 545.0 MODERATE INDURATION; ECHINOIDS, FORAMINIFERA	,
545.0 LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR I	INDURATION
546.0 547.7 CLAY; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION; 547.7 550.0 NO RECOVERY	
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY 550.0 550.7 INDURATION	Y; MODERATE
LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; P. 550.7 551.6 INDURATION	OOR
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POF	ROSITY;
551.6 553.2 MODERATE INDURATION; ECHINOIDS 553.2 554.0 CLAY; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;	
LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; P. 554.0 556.0 INDURATION; ECHINOIDS	'OOR
556.0 557.0 LIMESTONE (MUDSTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION; E	ECHINOIDS
LIMESTONE (MUDSTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION; E 557.0 558.0 CLAYEY	
LIMESTONE (WACKESTONE); WHITE (N9); HIGH INTERGRANULAR POROSITY; MODERATE INDUR 558.0 560.0 ECHINOIDS, GASTROPODS	
LIMESTONE(WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POR 560.0 561.6 INDURATION; ECHINOIDS	KUSITY; POOR

1		LIMESTONE(MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
561.6		INDURATION; ECHINOIDS LIMESTONE(WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
562.0		INDURATION; ECHINOIDS
569.2		NO RECOVERY LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW MOLDIC AND INTERGRANULAR POROSITY;
570.0	571.0	POOR INDURATION; ECHINOIDS LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;
571.0	571.9	LAMINATIONS
571.9	577.2	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; FRACTURED
577.2	577.6	CLAY; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
577.6	578.5	INDURATION; FRACTURED LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
578.5	580.3	INDURATION; FORAMINIFERA, FALLOTELLA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;
580.3	581.1	ORGANICS, FORAMINIFERA
581.1		LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, ORGANICS, FRACTURED
582.3	582.8	CLAY; PALE YELLOWISH BROWN (10YR 6/2); NO OBSERVABLE POROSITY; POOR INDURATION; ORGANICS
#aa a	5040	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FRACTURED
582.8		LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
584.0	585.0	INDURATION; FORAMINIFERA, FALLOTELLA, ORGANICS, FRACTURED LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
585.0	586.1	INDURATION; FORAMINIFERA, FALLOTELLA, FRACTURED LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
586.1		INDURATION; FRACTURED
587.3	590.0	NO RECOVERY LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
590.0	591.3	INDURATION; ECHINOIDS, FORAMINIFERA, FALLOTELLA LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
591.3	591.6	INDURATION: FORAMINIFERA, FALLOTELLA, FRACTURED
591.6	592.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, FALLOTELLA
592.6	593.0	LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, FALLOTELLA
593.0	594.4	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, FALLOTELLA, FRACTURED
		LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED
594.4		LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;
595.9		FRACTURED, CLAYEY CLAY: VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION
596.2	****	LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; POOR
596.8		INDURATION; FORAMINIFERA LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;
598.1	599.2	LAMINATIONS LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
599.2	599.5	INDURATION; FORAMINIFERA
599.5	600.0	NO RECOVERY LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
600.0	601.1	INDURATION; LAMINATIONS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;
601.1	601.5	LAMINATIONS
601.5	603.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; LAMINATIONS, FORAMINIFERA
603.0	604.1	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION; LAMINATIONS
604.1	605.4	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA
605.4		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, ECHINOIDS
		LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, FALLOTELLA, ECHINOIDS
606.2		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
607.4	609.5	INDURATION; FORAMINIFERA, FALLOTELLA, ECHINOIDS

1	1	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE VUGGY POROSITY;
609.5	610.0	MODERATE INDURATION; LAMINATIONS DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE MOLDIC AND PINPOINT POROSITY;
610.0		GOOD INDURATION; BIVALVES, ECHINOIDS
611.3		LIMESTONE (MUDSTONE); WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
612.5	617.2	MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FALLOTELLA LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, MOLDIC AND VUGGY
617.2	618.5	POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
618.5	621.2	POROSITY; MODERATE INDURATION; LAMINATIONS LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC POROSITY;
621.2	626.7	MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FALLOTELLA LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
626.7	632.5	POROSITY; MODERATE INDURATION; FORAMINIFERA  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
632.5	634.5	POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, VUGGY, AND MOLDIC
634.5	638.0	POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY;
638.0	638.8	MODERATE INDURATION; FORAMINIFERA
638.8	640.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS
640.0	641.7	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS
641.7	646.8	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA, LEPIDOCYCLINA
646.8	648.5	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; MODERATE INDURATION
648.5	650.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE INDURATION; FRACTURED, FORAMINIFERA
650.0		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA
		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION
654.0		LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
654.6		MODERATE INDURATION; FORAMINIFERA, ECHINOIDS LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY;
657.0		MODERATE INDURATION; FORAMINIFERA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE
657.7	,	INDURATION; FORAMINIFERA LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY;
658.4		MODERATE INDURATION; FORAMINIFERA, ECHINOIDS LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR, VUGGY, AND MOLDIC
660.0	661.7	POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, BIVALVES, FALLOTELLA
661.7	662.5	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED, BIVALVES, GASTROPODS
662.5		LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FALLOTELLA, FRACTURED
002.5	0,000,0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, VUGGY, AMD MOLDIC POROSITY: MODERATE INDURATION; FRACTURED, FORAMINIFERA, BIVALVES, GASTROPODS,
665.8	668.5	ECHINOIDS
668.5		NO RECOVERY
670.0	670.7	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND VUGGY POROSITY; MODERATE INDURATION; FORAMINIFERA LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY;
670.7	671.6	MODERATE INDURATION; FORAMINIFERA, FALLOTELLA, BIVALVE, FRACTURED
671.6	672.5	LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, BIVALVES
672.5	675.3	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, BIVALVES
675.3		NO RECOVERY
680.0	684.5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, SOME FRACTURES
684.5	687 5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA
687.5		NO RECOVERY
220	-0010	ı

I		LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC POROSITY;
690.0	690.1	MODERATE INDURATION; FORAMINIFERA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, VUGGY, AND
690.1	694.0	MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE
694.0		INDURATION; FORAMINIFERA [LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC
695.0	696.3	POROSITY; MODERATE INDURATION; FORAMINIFERA
696.3		CLAY; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION
697.8		NO RECOVERY LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY;
700.0		MODERATE INDURATION; FORAMINIFERA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE
703.6		INDURATION; FORAMINIFERA LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY;
706.4		MODERATE INDURATION; FORAMINIFERA, SOME FRACTURES
709.5		NO RECOVERY LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE
710.0	711.3	INDURATION; FRACTURED LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE
711.3		INDURATION; FRACTURED
712.3	716.0	NO RECOVERY
716.0	716.5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION
716.5	720.0	NO RECOVERY LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY; MODERATE
720.0	. —	INDURATION LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR POROSITY; MODERATE
721.0		INDURATION LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE
722.5	726.0	INDURATION LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR POROSITY;
726.0		MODERATE INDURATION
728.0	730.0	NO RECOVERY
730.0	731.0	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, GATROPOD, FRACTURED
731.0	734.3	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION
734.3	736.4	LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC POROSITY; GOOD INDURATION; FORAMINIFERA, GASTROPODS
736.4	744.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; SOME FRACTURES, GASTROPODS
744.6	750.0	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); POOR INTERGRANULAR POROSITY; MODERATE INDURATION
750.0	761.0	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION; CHERT, CALCITE, SOME FRACTURES
701.0	700.0	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION; CHERT, FRACTURED
761.0		
763.6	770.0	NO RECOVERY LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY; MODERATE
770.0	772.0	INDURATION; LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE
772.0	773.0	INDURATION; FRACTURED LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY;
773.0	776.0	MODERATE INDURATION; SOME FRACTURES LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
776.0	777.0	INDURATION; FRACTURED
777.0		NO RECOVERY
,,,,,		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE
780.0		INDURATION; FRACTURED LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR
783.3		INDURATION; FRACTURED
785.0	790.0	NO RECOVERY LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE
790.0	791.0	INDURATION LIMESTONE (WACKESTONE), VERY PALE ORANGE (101R 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE LIMESTONE (WUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE
791.0	792 0	INDURATION
792.0		NO RECOVERY
. 02.0	500.0	1

- 1		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY;
800.0		MODERATE INDURATION; FRACTURED LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
801.7	804.4	INDURATION
804.4	810.0	NO RECOVERY
810.0	811.3	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION
811.3		CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO OBSERVABLE POROSITY; GOOD INDURATION; CHERT
		LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR
815.5		INDURATION NO RECOVERY
816.0		DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND
820.0		VUGGY POROSITY; GOOD INDURATION; CHERT, SOME FRACTURES DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT AND
825.3		VUGGY POROSITY; GOOD INDURATION DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD
830.0		INDURATION DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT POROSITY;
833.3	838.2	GOOD INDURATION; SOME FRACTURES DOLOMITIC-LIMESTONE; YELLOWISH GREY (5Y 7/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY
838.2	840.0	POROSITY; MODERATE INDURATION; ORGANICS DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT AND
840.0	845.0	VUGGY POROSITY; MODERATE INDURATION; ORGANICS DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; HIGH PINPOINT AND MOLDIC
845.0	847.6	POROSITY; GOOD INDURATION DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT AND
847.6	849.5	MOLDIC POROSITY; GOOD INDURATION
849.5		NO RECOVERY
040.0	000.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY;
850.0	854.8	GOOD INDURATION; FRACTURES DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY;
850.0	854.8	GOOD INDURATION; FRACTURES  DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY
845.8	855.7	POROSITY; GOOD INDURATION; INTRACLASTS
043.0	055.7	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD
855.7	857.3	INDURATION; LAMINATIONS, ORGANICS
		DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; NO OBSERVABLE POROSITY; GOOD INDURATION;
857.3	858.4	LAMINATIONS, ORGANICS
858.4	859.4	DOLOMITE; DARK YELLOWISH ORANGE (10YR 6/6); SUCROSIC; MODERATE PINPOINT POROSITY; MODERATE INDURATION DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD
859.4	861.1	. INDURATION; ORGANICS
		DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION;
861.1	865.€	LAMINATIONS, SOME FRACTURES, ORGANICS
		DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; MODERATE
865.6	868.2	! INDURATION; SOME FRACTURES DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;
868.2	870	) MODERATE INDURATION; LAMINATIONS, ORGANICS
000.2	0,0	DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY;
870	871.€	MODERATE INDURATION DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE
871.6	974 3	B INDURATION; SOME FRACTURES, ORGANICS, CARBONATE MUD INFILLING PORES
071.0	0/4,2	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; MODERATE
874.3	876.3	B INDURATION; SOME FRACTURES, DOLOSTONE INFILLING OF PORES
		DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; MODERATE
876.3	878.2	2 INDURATION
		DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; MODERATE
878.2	880	) INDURATION; DOLOSTONE INFILLING OF PORES
		DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE
880	881.8	3 INDURATION
		DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; MODERATE
881.8	883.7	7 INDURATION; FRACTURED, ORGANICS
naa =		DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT, MOLDIC, AND
883.7	886	5 VUGGY POROSITY; MODERATE INDURATION; SOME FRACTURES, ORGANICS

	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY;
886	890 MODERATE INDURATION; ORGANICS, VUGS INFILLED WITH DOLOSTONE AND ORGANICS
	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; GOOD
890	892.5 INDURATION
	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE
892.5	894.1 INDURATION; ORGANICS
	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD INDURATION;
894,1	897.1 SOME FRACTURES, SOME VUGS INFILLED WITH DOLOSTONE
	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY;
897.1	898.4 GOOD INDURATION; LAMINATIONS, ORGANICS
	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; MODERATE PINPOINT AND INTERGRANULAR POROSITY;
898.4	898.9 GOOD INDURATION; LAMINATIONS, ORGANICS
898.9	900 NO RECOVERY

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Feb. 24. 2020 10:52AM

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		STATE OF FLORIDA PERM REPAIR, MODIFY, OR AB	MT APPLICATION TO CONS	TRUCT,	Permii No.	20211605
)		Southwest Northwest Substituting Street	PLEASE FILL OUT ALL APPLICAT (*Denotes Required Fleids V	SLEFIBLOS Vhere Applicable)	Parmit Suputations Required (Se	e Attached)
. 1	2	Suwannee River	The waterwell contrastor is responsible this form and forwarding the permit up appropriate delegated authority where	լի∦ակիքոր <del>էր եհ է</del>	62-524 Quad No Dela CUPANUP Application No	neation No.
		Delegated Authority (If a	Applicable)		ABOVETHIS DOE YOU OT	HEPAL DECLETORY
	3. Parcel ID No. 4. Section or Land Gr. 5. Section or Land Gr. 6. Section or Land Gr. 7. "Type of Work: 8. "Number of Propos 9. "Specify intended to Domestic Bottled Water Sup Public Water Sup Public Water Sup Public Water Sup Cress I Injection: Remediation: Recommodition Class V Injection: Remediation: Recommodition Class V Injection: Remediation: Recommodition Class V Injection: Recommodition Class V Injection: Remediation: Recommodition Classing: Recommodition Classing Matter Casing M	dress, Road Name or Number of Numbe	County  County  County  County  County  County  Counterclat  Countercl	Irrigation Significant Standard Standar	Stephens One State  Research of Repair, Modification of the pair, Modification of the Investigations on the Investigation of the	2-524: Yes No Address  ZIP  Abardownent Date Stemp  Official Use Only  art Date 3 3 3 4  From 472 To 600 tt.
	21.1's this well or any of CUP/WUP Apple 22 Leiltide	Longi	No it yes, complete the folio		under a Consumptive/Water Lio District  District  DAD 88  (Pages of the list before the Water level of the list before the list befor	NATED RA
	Approved Granted By	leffe Smith	Receipt No.		ation Date 8 25 20 Hydrolo Check No.	FO-P
	THIS PERMIT IS NOT VA	LID UNTIL PROPERLY SIGNE LABLE AT THE WELL SITE DU	o by an authorized officer Ring all construction, ref	OR REPRESENTA PAÍR, MODIFIDATIO	TIVE OF THE WIND OR DELEGAT N, OR ABANDONMENT ACTIVITY	FED AUTHORITY, THE IEB.

DEP Form: 62-592,600(1) Incorporated in 62-592,400(1), F.A.C. Effective Date: October 7, 2010

## STATE OF FLORIDA WELL COMPLETION REPORT



□Southwest □Northwest

PLEASE, FILL OUT ALL APPLICABLE FIELDS (\*Denotes Required Fields Where Applicable) ☐St. Johns River ☐South Florida

☐ Suwannee River □DEP Delegated Authority (If Applicable) OSCEDIA Date Stamp

Official Use Only

1.*Permit Number 49WP 2041605cup/WUP Number *DID Number 62-524 Delineation No	antigent h
2.*Number of permitted wells constructed, repaired, or abandoned *Number of permitted wells not constructed, repaired, or abandoned	8
3.*Owner's Name SFWMD 4.*Completion Date 2/112 5. Florida Unique ID	
3.*Owner's Name SFWMD 4.*Completion Date 2/112, 5. Florida Unique ID  6. 14020 Huy 40 E Jake Walts, Rl. 33898  *Well Location - Address, Road Name or Number, City, ZIP	_
7. *County OSCO (a *Section 29 Land Grant *Township 30 *Range 24	_
8. Latitude Longitude	
9. Data Obtained From:GPSMapSurvey Datum:NAD 27NAD 83WGS 84	in making the
10.*Type of Work: Construction Repair Modification Abandonment  11.*Specify Intended Use(s) of Well(s):  Domestic Landscape Irrigation Area Irrigation Livestock Monitoring  Bottled Water Supply (Limited Use/DOH)  Agricultural Irrigation Site Investigation Livestock Monitoring  Nursery Irrigation Test Commercial/Industrial Earth-Coupled Geothermal	
Public Water Supply (Community or Non-Community/DEP)Golf Course IrrigationHVAC SupplyHVAC Return	
Class V Injection:RechargeCommercial/Industrial DisposalAquifer Storage and RecoveryDrainage	
Remediation:RecoveryAir SpargeOther (Describe)	
Other (Describe)	11/15/16
Other (Describe)	
13.*Measured Static Water Levelft. Measured Pumping Water Levelft. AfterHours atGPM 14.*Measuring Point (Describe) Which isft. AboveBelow Land Surface *Flowing:Yesft.* 15.*Casing Material: Black Steel Galvanized PVC Stainless Steel Not Cased Other	- -
16.*Total Well Depth \_\_\_\text{\$\frac{1}{840}}\text{ft.} Cased Depth \_\text{\$\frac{140}{16}}\text{ft.} *Open Hole: From \_\text{\$\frac{160}{160}}\text{\$\frac{160}{160}}\text{ft.} *Screen: From \_\text{\$\frac{1}{160}}	
17.*Abandonment: Other (Explain)   Fromft. Toft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other Fromft. Toft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other Fromft. Toft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other Fromft. Toft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other Fromft. Toft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other	
19. Primary Casing Diameter and Depth; Dia in. From oft. To 110 ft. No. of Bags 5.24 Seal Material (Check One); Neat Cement Bentonite Other Dia in. From oft. To 118 ft. No. of Bags 9.24 Seal Material (Check One); Neat Cement Bentonite Other Dia in. From oft. To ft. No. of Bags 9.24 Seal Material (Check One); Neat Cement Bentonite Other Dia in. From oft. To ft. No. of Bags Seal Material (Check One); Neat Cement Bentonite Other Dia in. From oft. To ft. No. of Bags Seal Material (Check One); Neat Cement Bentonite Other Dia in. From oft. To ft. No. of Bags Seal Material (Check One); Neat Cement Bentonite Other Dia in. From oft. To ft. No. of Bags Seal Material (Check One); Neat Cement Bentonite Other	<u>_</u>
20.*Liner Casing Diameter and Depth: Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite Other	_
21.*Telescope Casing Diameter and Depth:  Diain. Fromft. Toft. No. of BagsSeal Material (Check One): Neat Cement Bentonite Other  Diain. Fromft. Toft. No. of BagsSeal Material (Check One): Neat Cement Bentonite Other  Diain. Fromft. Toft. No. of BagsSeal Material (Check One): Neat Cement Bentonite Other	
22, Pump Type (If Known):  Centrifugal Jet Submersible Turbine trap page Sulfate page Chloride page	
Horsepower Pump Capacity (GPM)	
Pump Depthft. Intake DepthftLaboratory TestField Test Kit 24. Water Well Contractor:	- 1
*Contractor Name Stepha Live Stroll Church License Number 9342 E-mail Address Strollande along Contractor Name Stephanie along	ŗ'n
*Contractor's Signature **Driller's Name (Print or Type)	

### SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

2379 BROAD STREET, BROOKSVILLE, FL 34604-6899

PHONE: (352) 796-7211 or (800) 423-1476 WWW.SWFWMD.STATE.FL.US

#### ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

4049 REID STREET, PALATKA, FL 32178-1429

PHONE: (386) 329-4500 WWW.SJRWMD.COM

#### NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712

(U.S. Highway 90, 10 miles west of Tallahassee)

PHONE: (850) 539-5999

WWW.NWFWMD.STATE.FL.US

### SOUTH FLORIDA WATER MANAGEMENT DISTRICT

P.O. BOX 24680

3301 GUN CLUB ROAD

WEST PALM BEACH, FL 33416-4680

PHONE: (561) 686-8800

WWW.SFWMD.GOV

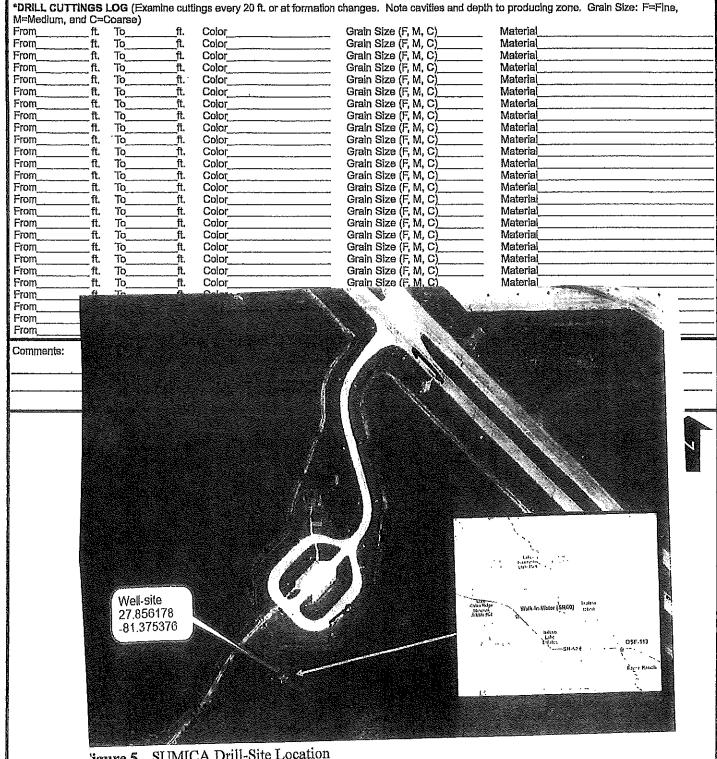
#### SUWANNEE RIVER WATER MANAGEMENT DISTRICT

9225 CR 49

LIVE OAK, FL 32060

PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)

WWW.MYSUWANNEERIVER.COM



Give distigure 5. SUMICA Drill-Site Location

Wet	Dreih Vi	Deeth R.	Ossorializationments	Rock Yere The military forms	Perceite	Peresite Tune 1	induration Arro-166	Other Festure Any sollow ill balling that about not fill in	Forellipse Perfections	Coluri Restroted to at select	Access Hig Is Accessory	Access Kin Part		PodYier
Deutrip tion	ira minimus midepth of the	dipin of the tra	Ossophellan Communits Description of internationally additional comments (2000 characters) maximum	instoje sanyle Restried input seleci šumput domi mbru	portify, reported in	refect from pull down meru	induration teverable in interest	Put does not fis in the other categories	taled tempor document	Restroted Eput, select from put down meru		nade up of the accessory	yarkur protestes kir oktabing	
	tacking tacking	sample, recorded as units			percent, not se a decimal		Restricted input selections				Restricted input, select input glown mend	mharaf "	porouty medicrements Restricted	
	at chits of hell below	of feet below			1/20.00 12/12/0 0/20/1 (7/20 2/20/1		pul down mens				mend		ingut select transpulldown merv	
L	1:100:00 1:100:00 1:100:00	1.7500	TRACE OF HEAVY DESTREES	SAND (CLIARIZ)	100									
	50 160	100	alstropous foorly wilshed saufle large diell fragments gastropous gastropous trace of MCA finely ground ehell some of	SANDIQUARTES SANDIQUARTES										
	20-0 23-0	230	THE LIMESTONE IS PHOSPINATIO SHALL AMOUNT OF PHOSPINATIC SANDSTONE WITH SPARRY CALCITÉ MATRIX	SAND (CRIARIZ)										
	33-0 43.0	1	ALSTROPCOS SWILL AMOUNT OF SHELLY SANDSTONE WITH SPARRY CALCITE WATRIX MOST OF THE SHELL IS FINELY GROUND, TRACE OF INCA	SAND (QUARTZ) SAND (QUARTZ)								}		
			ALSTROPOLS SOVE LOSSE LARGE SHELL FRAUMENTS AND FAIRLY GROUND SHELL FRAGWENTS, SMALL AMOUNT OF MOLDIC SHELLY SANDSTONE WITH SPARRY CALCITE WATRIX.	SAND (OVARYZ)										
	53.0	56.0		Serio (construct)										
			eryozoa gastropods sove of the Livestone has phosphate watrix mois sugoti midromoded mani shells are prosphated sand see fradberts sove shelly hosphatic sandstone with spaary caldite cenent alooks lare									[		
	660	830	SANDSTONEWITH SPIARY CALCITE COVERT GLOOS LIKE COVERTIONS WITH VERY FILE GRANDED SAND MOD PHOSPHATE ASCALL DAS COVERTIONS AND MOD PHOSPHATE ASCALL DAS COVERTIONS COVERTIONS OF A VERY FILE GRANDED PHOSPHATIC MATERIAL (POORTY YARRED) 15% VERY FILE GRANDED PHOSPHATIC	874/Q (DATES)										
Example Date	£30	70 (	CASTROPODS, CRUSTACEA LIVESTONS IS RECRISTALLIZED.	SHELL EED								İ		
	730		GASTROPODS  424 SUNDY COOLULA WITH SPARKY CALCUTE CENSULT  GASTROPODS  424 SUNDY COOLULA WITH SPARKY CALCUTE CENSULT	EAND COULD IN										
	86 €		GASTROPODS 12% SAVIDY COODINANTH SPARRY CALCITE COMENT WITH GOOD SIDURATION WAY SHELLS ARE THOSPHARIZED SAVID ENCREASES TOWARD GOTTOM TO ASCALT 45%.	SHELL BED										
	95 8	100 0	WAY FURRIFIELD A POOLEONS, BUTT SHELL FRAGMENTS ARE PROSPRATIZED NEPROSPHATE INCLUDES SUID AND GRAVEL SIZE WAYN TURRIFIELDA MAN'N SHELL FRAGMENTS ARE PROSPHATIZED.	SHELL EED		İ								
			TRACE OF SANDY COCAMA WITH SPANRY CALCITE CEVERS. COOD ENDURATION: SPRINGSPHATE INCLINES SAND AND GRAVEL SIZE TANDRING AT 11 ET SCHOOL SAND FREGUENIS AND SAND											
	1090	1250	LARGEBARNACIES CALCATICALL CHARGE FROM ASOVE PITERVAL TO THE TREEVAL THE SHELLY SANDSTONEWITH CALCAUTIE	SHELL EED										
	1260	1360	DATRIX  QASTROPODS TRACE OF INCA AND HEAVY MINERALS IN OF SAUFLE	GRAVELLY SAVIDS										
	1380	1500	IS A POORLY BRUTANTO-CALCAREOUS SUIDSTONE AND STOREASES WITH DEPTH TO 6%. SKELL DECREASES TO ASOUT 5%. CALCAREOUS POORLY WASHED SUIVER FORWARD SOME POORLY	(STRAUD) GIVA										
FQF-32	150 0 1590 0		NO RECOVERY  NO RE	SAND (DUARTZ)	1					GRAYISH GRANGE		l		
F0F-32	1500 5	1593 (	PRIERGRANALA: MODERATE REMARATION EVALVES UNESTONES PACKSTONE, VRNY PR. E GRANGE: 1078 M2. MODERATE PITERGRANALA POROSTY, MODERATE DURATION ENALVES.	EMESTONE PACKSTONE	1	RATERGRAPANA		EVALVES, SOME	İ	1G/R 7A VERY PALE ORANGE				
FCF-32	1503.0	15044	SOUE PRACTURES	LIVESTONE-PACKSTONE	20	ANNAPARATIN	INCOERATE	EVALVES, SOVE		104R 802			]	
			LIVESTONE PACKSTONE MOCERATE YELLOWSH BROWN: 161R 64 MCCERATE MITERGRAVANAA AND PURDON POROSITY, GCCO EXCURATION BY ALVES SOVE FRACTURES, CALCITE GROWNS ON					CALCITE GROWING ON FRACTURE		MODERATE YELLOWSHEROWN				
POF-32	1504.6	1504 (	PRACTURE SURFACE LIVESTON: PACKATOR: VERY PALE DRANGE: HIVE & LOW PRIERGRANILAR PORCISITY, MODERATE MURITION EVALVES	UVESTONE PACKSTONE		PITERGRANULA PITERGRANULA	L .	SURFACE		: IOIR \$4 VERY PALE GRANGE : IOYR BZ	CALCIE	}		
POF-42	13346	13.0	i	Cocononia - Azione	"	1101011110		GALCITE GROWNGON FRACILIRE						į
POF-32	1506 1	1507	UVESTONE-PACKSTONE GRAMEN ORANGE: 1918 74, LOW VITERGRAMEAR AND VUSGY POROSTY, MODERATE MEURATION CALCITE GROWNO ON FRACTURE SURFACE AND IN VVGS	UVESTONE-PACKSTONE	14	OTTERGRANUA	NOTERANI	SURFACE AND IN		GRAYISH ORANGE 1019 7/4	CALCITE			
			LIMESTONE-PACKSTONE GRANGH GRANGE: 1078 TH MODERATE					SVALVES, CALCITE GROWING ON FRACTURE						i
POF-32	1507.5	1508	NITERGRANMAN MOLDIC, AND WIGHT FORDSTY, MODERATE SIDURATION, EVALVES, CALOTE GROWNING ON FRACTURE SURFACE AND IN WIGS.	UVESTONE-PACKSTONE	2	O OTERGRANAL	MODERATE	SURFACE AND DI		GRAYISH ORANGE 1D/R 7/4	CAFCLLE			
POF-32	1508 1	1510	CALCAREOUS DOLOWITE. GRAYGH DRAYAE: 18YR 7/4 WGROCRYSTALLINE, LOWFENPONT AND WOLD'C POROSITY. MODERATE INDURATION, BYALVES, ECHYNODS	DOLONITE	11	FNFONT-VU	MODERATE	ENALVES	ECHNO03	CRAYISH ORANGE 101R TA VERY PALE ORANGE				
POF-32	15104	1513	DODERATE BILARATOXI. EVALVES. ECHYRODS LINESTONE-PACKSTONE WERY PALE CRAVICE: 1078 82, LOW EXTERGRANALAR POROSITY, MODERATE RIDURATION, ECHYRODS	LIVERTONE PACKSTONE	,	PATERGRAPH	MODERATE		ECHNODE	: 10VR 5/2				
POF-32	15137	1515	CALCAREOUS DOCOMTE. MODERATE VELLOWS HESDAM: URR SAL MODERATE PARTIES, MODERATE RESPORT, MODERATE AND VIGORY POROSTY, DODO NO MERTAN E EVALVES CALCATE EL MUSO LIVESTOCKE PARCISTO, ENCANDE MONE: 10 RT RL LOY ENTERGONAL AN	DOLOVITE	,	PRI PONT - VUI	CO00	EVALVES CAUCIO	l	YELLOWSH EROWN	CALCITÉ			
F0F-32	1515 6	1518		UVESTONE PACKSTONE	١,	INTERGRANUL	VODERATE	EVALVES SOME INTRACLASTS		GRAYISH ORANGÉ : IDIR 74				
POF-32	15183		NO RECOVERY CALCAREOUS DOLOWIE MODERATE YELLOWISH ERGYNY: 10YH \$4, MCROCRYSTALLIKE, MODERATE PS/POZIT AND MODIC POROSITY,		١.			FRACTURED		UOCERATE YELLOWSH EROYN : 1078 CM				ĺ
POF-32	1529 0	f	GOOD INCURATION: FRACTURED BOLDWITE MODERATE YELLOW'SH EROWN: 161R 54. MCROCRYSTALLIVE MODERATE FINYOW! AND MOLDIC POROSITY.	DOLOVITE		Par PONT - VUI	1	FRACTURED		POOERATE YELLOWISH EROVIN : 1078 64				
POF-32 POF-32	1521 5 1523 5	1526	GOOD ELDURATION FRACTURED NO RECOVERY CALCARTOUS DOLDWITE, MODERATE YELLOWSH EROWN; 1818 54.	DOLOVITE	1	PN POSIT - VIX	3000	PROC I VNED		HOCKELTE				
PQF-32 PQF-32	1824 C 1525 T	1525 1525	INCROCRYSTALLINE, MODERATE PURONT POROSITY, GOOD NORECOVERY	DOLOWITE	2	D. P.N. PONT - VUX	GOOD	FRACTURED		YELLOWSH EROWN 10/R 54				
POF-32	1526 0	1527	CALCAREOUS COLOUTIE, MOCERATE YELLOWES FROM N. 1818 SU. MICROCRYSTALLINE MOCERATE FAIRONT FORDSITY, MOCERATE BIOURIATION FRACTURED	DOLOVITE	2	PRIPORT-W	HODERATI	FRACTURED		YELLOWSH BROWN				
FOF-32	1527.5	1525	CALCAREOUS DOLOWITE, MOGERATE YELLOWISH EROWIN : 16YR 64 MCROCRYSTALLINE, HIGH PUROUIT ROROSTY, MODERATE 8 REMERATION	DOLOWITE	3	a PHFONT-VU	NODERATI	Ę		WODERATE YELLOWISH BROWN : 10/R 5/4 BIODERATE				
POF-32	1528.6	1530	DOLOMIE, MODERATE YELLOWSH EROVNI: 10YR 54, MCROCRYSTALLME, HIGH PAPONIT POROSITY, POOR INDURATION, FRAGRIRED, EVALVES	BOLOANTE	3	a PAFOAT-VU	FOOR	FRACTURED EVALVES	1	WODERATE YELLOWISH BROWN 107R 54				
POF-32	1530.0	1531	DOLOMATE DURA YELLOWISH BROWN - 10 M 4/2.  MICROCRYSTALLING HIGH PUPOUR AND VINGGY POROSITY GOOD  MICRORATION EVALVES	COLOMITÉ	,	PAI FOST - VIX	5000	EVALVES	1	DARKYELLOWSH BROASI: 10/R 4/2 NODERATE				
POF-12	1531	1532	DOLOWITE, INCREMATE YELLOWSH BROWN, 1078 64. DICROCRYSTALLINE, HIGH PERFONS AND WOOD FOROSTY, GOOD INDURATION EVALVES	COLOUTÉ	١,	S PN FONT - VU	6000	EVALVES		YELOWSHEROWS : 1078 54 MODERATE				
FCF-32	1532	1	CALCAREOUS DOLOWITE, MODERATE VELLOWSH ERGYNI: 1078 CH. MCROCRYSTALLINE HIGH FXPOWN AND VACGY POROSITY, GOOD 6 INDURATION	DOLOVITE	,	O F21 PONT - VU	6000			YELLOWSH BROWN	1			
POF-32	15324	1533	CALCAREOUS DOLOUTE, MODERATE YELLOWISH BROWN: 10/18 6/4  MCROCRYSTALISTE, LOW FOADSIT FORCASTY, GOOD MIDURATION CALCAREOUS DOLOUTE, MODERATE YELLOWSH EROWS: 10/18 6/4	DOLOWITE	,	O PRIFORM VU	6000			UCCERATE 1ELLOWER EROWN : 1078 54				
POF-32	15331		CALCAREOUS DOLOMITE, MODERATE YELLOWSH EROVAY: 1018 54, M.CROCRYSTALLINE, LOW PAPONT POROBITY, MODERATE S.COURATION	DOLOWITE		0 Faifoht-Vu	ļ	Ę		VODERATE YELLOWSH BROWN 10YR 5/4				
POF-32	15341	1	CALCARROUS OCCONTE PALE YELLOWISH BROWN: 10/R 6/2, 11 WCROCKYSTALLOR COMPANIONT FOR DISTY, FOOR SEMERATION LIVESTONE-VA-CHESTONE, PALE YELLOWISH BROWN: 10/R 6/2 LOV	DOLOVITE	Ι.	0 FNFONT-W	POOR			PALEYELLOWIDA 890WN: 10YR 62				ĺ
P0F-32	1535	1	PITERGRANALAR POROSITY, POOR KIDURATION, CALCITÉ VERNAT 0 1534 6	LWESTONE-WACKESTON	<del></del> 1	O INTERGRANUL	POOR	CALCITÉ VEN AT		PALEYELO/ASH ESCAN: IOTRE?				
F0F-32	15401		LIVESTOKE-PACKSTONE, VERY PALE DRANGE: 10YR MZ, LOW I RITERGRANGAR POROSITY, MODERATE LEUVRATION CLAYET LIVESTONE-PACKSTONE VERY PALE ORANGE: 16YR MZ 2 LOWNITERGRANGAR POROSITY, POOR MOURATION	UVESTONE PACKSTONE	1	O UNTERGRANUL	PODERAT	<b>5</b>		VERYPALE ORANGE LIGHT BZ VERYPALE ORANGE	1			
POF-32	1541		2 LOWETERGRANULAS POROSITY, POOR MOURATION CLATEY LIVESTONE PACKSTONE GRANISH ORANGE: 1018 741, LOW 0 MTERGRANULAS POROSITY, VIDERATE PROVIDATION	LIVESTONE-PACKSTONE  LIVESTONE-PACKSTONE	- 1	D INTERGRANAL D INTERGRAPAL	1	I E		: 10YR 6/2 GRAYISH ORANGE: 10YR 7/4	CLAY			
POF-32	1550		CLAYEY LIVESTONE-PACKSTONE DARK YELLOWISH ORANGE: 10/R 6 65 LOVIDITERGRUNDLAR POROSTY: NODERATE INDURATION	UMESTONE PACKSTONE		O PETENGRAPAL		E		DARK YELLOWSH ORANGE: 10YR 66	CLAY			
10002		.354	THE RESERVE AND ADDRESS OF THE PARTY OF THE			1		CRYSTALS. SVALVE SHELL		VERY PALE ORANGE				
POF-32	1554	0 1556	CONTROL OF THE STATE OF THE STA	LIVESTONE-PACKSTONE	1	DETERGRAVAN.		E FRAGNERTS BVALVE SHELL		101R 8/2 VERY PALE ORANGE	CLAY			
POF-32	1556		O INDURATION SYALVE SHELL FRAGMENTS	LIVESTONE PACKSTONE	1	ANYARDRETME OF	AÉ MOOBRAT	FRAGVENTS BVALVE AND GASTROPOD		10VR 8/2	CLAY			
FQF-12	1557	D 1557	CLAYEY LIVESTONE PACKSTONE, VERY PALE OR ANCE: 197R B2. LOW BITERORANALAR POROSITY, MODERATE BROURATION, BYALVE 2 AND GASTROPOD SHELL FRAGMENTS	UNESTONE PACKSTONE		O PITERGRANUL	MODERAT	SHELL E FRAGUSHTS SYALVE AND		VERY PALE ORANGE : 10YR 842	CLAY			
POF-32	1354	2 1580	CLAYEY LIVESTONE PACKSTONE, VERY PALE CRAYICE, 10/R M2, WODERATE INTERSPANALAR AND VUSGY POROSITY, WODERATE INTERATION BY MALE AND CASTROPOD SHELL FRAMENTS	LIVESTONE-PACKSTONE	,	N PITERGRANUL	AWODERAT	SHELL SPECIAL SEFRAGINESTS		VERY PALE ORANGE : 107H B/Z	CLAY			
			CLAYEY LIVESTONE-PACKSTONE VERY PALE DRANGE; 10/R MZ,	LIVESTONE-PACKSTONE		D PITERGRAVA	1	FRAGUEITS. UNIONTÉ		VERY PALE CRAYKS	}			
POF-32	1560		CLANEY LIVESTONE PACKSTONE VERY PALE ORANGE: 107R MZ	UMESTONE-PACKSTONE		O PITERSKANI		SVALVE SHELL FRAGUEITS LIVORITÉ		VERY PALE OR WASH	1			
POF-32	1562		CLAYEY UNESTONE-WACKESTONE, VERY PALE ORANGE; 10YR 62.	LIVESTONE-PACKSTON		IO BITERGRAFUL		EVALVE SHELL		VERY PALE ORANGE	1			
P0f-32	1563		CLAYEY LIVESTONE PACKSTONE, VEHY PALE GRANGE: 161R 6/2			O PITERGRANUL		EVALVE SHELL FRAGNETIS. UNOGITE		VERY PALE OR ANGE				
POF-32	1564	1	4) SHELL FRACUSHTS, LUDONITE CLAYEY DIVESTONE PACKSTONE, VEHY PALE ORANGE: 11YR M2 NO OBSERVASIE POROSITY, POOR INDURATION EVALVE SHELL	F-ACSIONE-NEWSTONE				UNORITE BYALVE SHELL FRAGIVEITS,		VERY PALE ORANGE 100'R 82				
POF-32	1566	1	CLAYEY LINESTONE WACKESTONE VERY FALE ORANGE: 101X 65.	DOESTO/REPACKSTORIE		a NO CONSERVAR		EVALVE SHELL FRAGUENTS		VERY PALE ORANGE I for BZ	1			
FOF-32	1567		ID FRAUEDTIS LUNCATE CLAYEY (INESTONE WACKESTONE, GRANISH ORANGE: 101R 74, LOW-FIERGRANMAN FORODTY, POOR SIDURATION EMALYE	LOGSTONE-WADGESTON		NO OBSERVA	1	ENORSTE ENALVESHELL FRAGUENTS		GRAYISH DRANGE:	CLAY			
POF-32	1570		CLAYEY UNESTONE PACISTONE GRANISH GRANGE: 10YR 7/4, LOW INTERGRANIAAR POROSITY, POOR PADURATION, EVALVE SHELL	UVESTON E4VACKESTON	1	10 INTERGRANIA		EVALVE SHELL FRAGUENTS		GRAYISH DRAYGE:	CLAY			
POF-32	1570	9 1576	S FRAGUEITS UVONTE	UNISTONE-PACKSTONE	1	INTERGRAPAN	A POOR	UNONTE	'	1-41014	, con	•	•	•

				1				EVALVE SKELL	l.		1 1
FGF-32	15753	1578 0	CLAYEY UVESTONE PACKSTONE VERY PALE GRANGE: 101R 87. LONG STERGRANULAR POROSITY, POOR SIDURATION EVALVE SHELL FRAGUENTS, LINOINTE	LIVESTONE-PACKSTONE	10	HTERGRAMATA	POOR	FRAGNEITS	VERY PALE ORA 1978 82	CLAY	
1			CLAYEY LIVESTONE WACKESTONE, VERY PALE ORANGE: 10TR 6/2 LOW WITER GRAZAULARI FOR OSTIY, POOR PROVINATION BY ALVE	EWESTONE-WACKESTONE		INTERGRANULA		SAVORDILE SAVORDILE	VERY PALE ORA	NGE CLAY	ļ
FOF-32	1578.0			FIARALOVE-ANCKERSONE	10	MERGOSIOCA	rook	LIVONITE E-YALVE SHELL FRAGUEITE LIVONITE PYRITE		]	
POF-32	15200	1531 0	CLAIEY LIVESTONIE PACKSTONE, GRANISH ORLANDE: 101R 7A, LOW INTERGRANDLAR FORGRIFY, FOOR BURDLATION, EWALLE SHELL PRADUSMIS LIMONIE PIRITE GUARTE SAN PRADUSMIS LIMONIE PIRITE GUARTE SAN OSSERVALE FORGISTY, FOOR BURDLANDE SYNLYES SHELL OSSERVALE FORGISTY, FOOR BURDLANDE SYNLYES SHELL	LIVESTONE PACKSTONE	10	L'ITERGRANIA.A	POOR	DUADATE PYRITE  CHASTISMAD	GRAY, SHORAN 1018 74	CLAY	
	- 1		CLAYEY LIVESTONE PACKSTONE, GRANSH CRANCE: 101R 7/4 NO OSSERVAELE POROBITY, FOOR INJURATION INVALVE SHELL BEAUTHER A	LIVESTONE-PACKSTONE		JANVARRED ON	ECONE .	ENALVE SHELL FRAGUENTS	GRAYYEH DRAY 10/01 7/4	2≝ ·	
POF-32	1581 6	1523 1	ricaner livestone packstone, granish orange : 10/ir ih. Low Bitergraniaaa porosity, poor Biduration evalve shell	CONTROL OF COLUMN				EVALUE FUEL	GRAYAN DRAY	s€.	
FOF-32	1523 1	1590 0	PRACHEME	UMESTONE PACKSTONE	10	RANKARORBIUS	FOOR	FRACIVEITS ENALVE AND GASTROPOD	1079 74	CLAY	
		ľ	Clayer Uusstone-Wackestone, Graygh Orange, 10r 7/4 Lonntergraniaar and wold o Pordaty, Noderate Brugation Evalve And Gastropod Shell Fraguents					FRAGUERTS	GRAYISH ORAN	SE ·	
POF-92	15000	1531 8	LINCOUTE CONTRACTOR OF THE PARTY OF THE PART	CHARALONE AVECKESTONE	10	AJUHARORETHO	VODERATE	DIMONATE	GRAYSHORAS	CLAY	
FOF-32	10718	1545 7	LEVANTEE GRANIALER AND VOLDS FOROSITY, FOOR INDURATION LEVANTEE	LIVESTONE-WACKESTONE	10	PATERGRAVIVA	POOR	LIBOTATE SOVE SNALVE	10/R 74	CLAY	1
		l	CLAYEY LIMESTOXIE/WACKESTONE, GRANISH GRAYGE: 1078 IM. LOY BYEAGRANDAR AND WOLD C POROSITY, WOCERATE BYOURATION, SOME BYALVE AND GASTROPOO SKELL FRAGWENTS					AND GASTROPOD	GRAY SHORES	O.E.	
POF-32	15957	1593 5	INDURATION, SOME EVALVE AND GASTROPOO SKELL FRAGMENTS CALCAREOUS DOLOWIE, MODERATE YELLOWISH ERGART: 1978 \$4, MCROCRYSTALLER, LOW PAIFONT PORDSTY, GOOD SIDMANION	LIVESTONE-WACKESTONE	10	PITERGRANNIA	I/OGERA1E	FRAGVENTS	IDIR 744 MODERATE YELLOWSHER	CLAY	
FOF-32 FOF-32	1598.5 1993.9	12200	FRACTURED	DOLOVÆE	10	F:HPONT-VUC	G000	FRACTURED	torR E4		
1		- 1	COLOMIE INCOERATE YELLOW/SHENOWITH NOTE:					FRACTURED	MOGERATE VELOWERER FOR EN MOGERATE	DAVE1	
FOF-32	16004	1602.9	MCNOCHISTALLISE COMPROVATI PORTOSI I GAGGI MOMINICI RISCURISTI RISCURISTI RISCURI II GAGGI MOMINICI MOGRAFIE NELLOWISH RISCURI, MIR 64.  RICCOCATISALLINE, MOGRAFIE PAPOTAT AND VAGOT PORTOSITY, COCOR SURRATION PRACTICAGO CALCARGOS DOLOMICE, GARISH ORANGE, 1971 PAR MCCOCATISTALLISE COMPROVIT PORTOSITY, MODERATIE	DOLOVITE	10	F24 FONT - VUC	l	ļ l		ows.	
POF-32	1602.9	1506 3	GOOD INDURATION: FRACTURED CALCAREOUS DOLOWITE, GRAVISH ORANGE, 101R FM.	DOLOWITE	29	PAIFORT-VUC	GCCD	FRACRIKED	GRANDHORAN		
POF-32	1605.3	1606 0	MCROCRYSTALLINE LOW ENFORT FORDSTEY, MODERATE BEGURATION	DOLOVITE	10	F4IPONT-WG	MODERATE	:	1bR 7/4 VODERATE	ue.	
POF-12	1606 D		NEWRATION  DOCUME MODERATE YELLOWSH EROWN: 1918 54.  MCROCRYSTALLINE LOW FARONT FORDSTY, MODERATE  NUMBATION	DOLOVITE	to	P2RFORT - VUC	VODERATI	.	HELLOWSH EA TOTALS	DAN	
	- 1		CALCAREOUS DOLOWITE, PALE YELLOWISH EROWN: 107R 6/2.  PICROCRYSTALLOSE LOW PINFORT POROSITY, MODERATE					.	PALE YELLOW BROWN: 18YR	iel En	
POF-32 FOF-32	1607.2	16:35 16:100	INDORATION  NO RECOVERY  NO RECOVERY	DOLOVITE	10	PAIFONT-VIC	POOSPAN	i	1		
F0F-12	16100	16120	INDIANON NO RECOVERY CALCATEOUS COUNTE, DARKIELLOW SHORANGE: 19/8 65, DECROCATABLISHE, LOW PLANON PORODEY, MODERATE EIDMANDS: LIDWASTE CALCATEOUS COUNTE, DARKIELLOW SHORANGE: 10/8 65 MCROCRESTALLISE, WODERATE PORONT POROSITY, POOR ROCHARION SOCKOME, DARKIELLOW SHORANGE: 10/8 65 MCROCRESTALLISE, WODERATE PORONT POROSITY, POOR ROCHARION	DOLOVITÉ	10	PAIRONT-VUG	NOCERATI	,	DARK VELLOW	24 NACALLE	
1			CALCAREOUS DOLOMATE, DARK YELLOWISH ORANGE: 101R & 6 MCROCRYSTALLINE MODERATE PURPONT PORQUITY, POOR	DOLOWTE		PAIRONT-VUC	erre		DANK YELLOW		
FOF-32	15120	15124	OOLDWITE MODERATE YELLOWSH EROWN: NOR 64, WCROCRYSTALLINE MODERATE PT-FOWN FORDSITY, MODERATE						VELLOWSHER	1	
POF-32	16124	15130	MCROCKYSTALLIE, WODENIE PANONT POROSITY, POOR NOUMAINON DOLDWITE WODENAIE YSLOWIÐ EROVAN: NOTR SA MCROCKYSTALLIE, WODENAIE PAROVAT POROSITY, NOGERATE EDURATON FRACTURED DOLGWITE WODENAIE YSLOWIÐ: EROVAN: NOTR SA MCROCKYSTALLIE, EVOCENIE PAROVAT ÁVIÐ VUGG FOROSITY, COOR MAN BRANDE FRACTURED	DOLOVITE	20	EST PORT - VUC	MOCERATI	FRAGIVAED	: 101R EN MODERATE VELLOASH ER	awa	
POF-32	15130	15141	UKROCRYSTALLNE MOGERATE PAROVIT AND YUNGAY PORDSITY, OCOO MOURATION PRINGTURED	DOLOVITE	20	EN PONT - YUG	6000	FRACTURED	. 10VR SN MOGERATE		
POF-32	1814 1	15149	dolowie moderate vellowisherown for \$4, incrocrystalline Lowenpowi Porodey, 6000 induration	GOLOVITE	10	FAI POSIT - VIX	6000		YELLOW SHEE	Divis	
· 1	ļ		DOMESTIC DESIGNATION OF SECURIT 1018 40			BURNING AND			MARK YELLOW	\$H 4/2	
POF-32	t514.9	15150	MCROCRYSTALLESE LOWENSOM FOROSHY, GOOD MURATION DOLOWITE MODERATE YELLOWSH EROWN ; 10YR 5%, MCROCRYSTALLINE, MODERATE PRIFOSITI AND YUGGY FOROSHY,	COLOVITE	(*)	PSLFO://I-VUC	l		NOCERATE VELOVIŠKES		1 1
PDF-32	15160	16173	DOLOWITE, MODERATE YELLOWISH BROWN: 10YR 5'4.	DOLOWITE	70	PARPOSIT - VUG	G000		10/R 54 MODERATE YELDWATHER		
POF-32	16173		MCROCRYSTALLINE MODERATE PRIPORITAND VUIGGY POROURTY. MOCERATE INDURATION FRACTURED NO REDOMENY	DOLOVJE	20	FAIFORE - VUC	NODERAT	FRACTURED	: t01R 5/4	*****	
POF-32	16196						ļ	<u> </u>	UCCERATE VELLOWCH EA 1078 54	OWN UNOWIE	
PQF-32	1620 0	1622.2	NCROCKYSTALINE MODERATE PINFONT AND YUSGY POROSITY, MODERATE NOURATION, FRACTURED, LIMONITE DOLONGE, MODERATE YELLONGSHERDAN, MITRISH	DOLOWIE	20	FAIRONT - VUC	MODERAT	FRACTURED			
PGF-32	1822.2	16240	W CROCKYSTALLINE, KOMPRIPONT AND WOOST FORGSTY. WOODSRATE MOURATION, FRACTURED LIVONITE AND CHITE MOVERNITE TO AN ON THE BROKEN 1878 54	DOLONTE	30	F:N PONT - VUC	MODERAT	FRACTURED	YELLONGH ES 1018 54 VOCERATE		
POF-32	1824 0	1525 B	W.CROCAYSTALLINE, MODERATE FURDINT AND YUGGY POROSITY, MODERATE AND PRACTURED, UNOVITE	DOLOVITE	20	FN PONT - VIK	WODERAT	FRACTURED	YELLOWSH EF 1078 54 WODERATE		
			DOLOWITE MODERATE YELLOWISH BROWN: 151R 54. MCROCHYSTALLINE LOW PLANDIT MED WIGGSY POROSITY.	COLOVITE	٠,	PERFORM - VAIO	TIVIDERATI	# FRACTURED	TELOWSH OF	ENONIE	1 1
POF-322	1625 6	15263	DOLOWITE MODERATE YELLOWSH BROWN: 1078 54, MCROCRYSTALLES, HIGH PUSONT AND VUGBY FOROSTY.				1		MODERATE YELLOWSH B STATES		
PQF-32	1626 3	1629 0	PODERATE NORRATION LINCORTE DOLOUTE PODERATE YELLOWSH BROWN: 10/R 5H,	DOLONITE	*	FREOM-VIK	A MODERAT	וֹ וֹ			
POF-32	16290	1633 A	CONCINETATION AND A THE DAY OF THE PROPERTY OF	DOLOVITE	100	POIFONT - VIX	WOOERAT	90VE FRACTURES	YELLOWSH BY HORESA MODERATE		
POF-32	1632.8	1635 4	MCROCRYSTALDINE LOW PRIPORT AND LOGGY POROSITY FOOR INCURATION FRACTURED DIVIDITE	DOLOWTE	16	Pai Podit - VIX	FOOR	FRACTURED	YELLOWISH 6* TUTR C4 HODERATE	CONTRACTOR	
FOR-32	1635.4	1637 6	DOLONGE DODERNIE YELLOW SHI DROWN   1074 SA,  WORDCRYSTALLINE LOW ENDOUT POROSSY, GOOD SIGURATION INVOICES	DOLOWIE	10	FIN POINT - VAK	6000		HELLOWISH 64	LIMONATE	
1			DINORTE DOLDINTE, DARK YELLOWISH GROWN: 1978 4/2 WCROCRYSTALDING, 100 POROSITY, GOOD HIBURATION.	DOLDWITE	10	FIN FORT - VAK	2000	SOME FRACTURES.	DARKYELLON PRONN: 10/8	SH LIVONITE	
POF-32	1637.6	16436	VCRDCRYSTALLIFE LOW PAROSIT POROSITY, GOOD INDURATION, SOME PRACTICATES LIMOSITE LIMESTONE-PACKSTONE GRAYGH ORANGE: 10YR TAL LOW CITERORANIAN POROSITY, MODERATE INDURATION, LINOSITÉ	LUESTONE PACKSTONE	10		Ł	. 1	EROAN: 1078 GRANSH DRAI 15YR 7A	KGE . LINONSTE	
FOF-12	1643 6	1650-0	ETEROPORADEA PAROSITY, MODERATE MODERATOR DAVISE SONTE LIVESTONE PACKSTONE, GRAVIEN DRAVISE : 19YR 74, LOW EXTERORANDUAR FOROSITY, MODERATE MODERATION DIMONITE	LIVESTONE-PACKSTONE	١.,		i	1	GRANISH ORAL	D DAYS ATTE	1
POF-32	1650-0	rest t	INVESTIGNATIONAL PROCESSIVE BEOFFRATE YELLOWSHIES DAVING BOTH IN THE STATE OF THE S		1	ł	1		POCERATE TELLOWSHEE	DAN	
POF-32	1651 1	1651 3	LIUESTONE PACKSTOKE, WOODENTE VELLOWISH EROKM : 10/R 64. LOWIGTERGRAMALAR POROSITY, WOODENTE INDURATION LIMORITE DOCKOMTE NOODENTE VELOWISH EROKM : 10/R 64. MCROCRYSTALLINE LOW PAPONT AND VUCGY POROSITY, GOOD	LIVESTONE-PACKSTONE	100	PATERGRANAL	MODERAT	ŧ	HODERATE YELLOWSHIP	UVONTE	
POF-32	1651 a	1654 6		DOLOWITE	10	PARFORM - VUI	6000	FRACTURED			
POF-32	1654 6	1656 \$	DOLOWITE MODERATE VELLOWING BROWN: IOTH 54, MICHOCRYSTALLINE, MODERATE PRIFORM AND VICON POROSITY, GOOD POROSITY, GOOD POROSITY, GOOD PROPERTY.	DOLOVITE	20	F21FONT - YU	6000	FRACTURED	MODERATE YELLOWISH BI 10YR SH	IOVN	
POF-32	1658.5	1659.5	DOLOWITE PROPRATE YELLOWISH BROWN: NYTR 54, WCROCHYSTALINE LOW PURONT AND VUGGY POROSTY, GOOD SYCHRATION	DOLOWIE	10	PAIRONT - VUI	9000		MODERATE VELLOAUSH BU : 107/8 54		
POF-32	1650.5	1600 0	UNESTONE PACKSTONE PALE YELLOWSH EROWS. 16/8 6/2 LO/4 SITERGRANULAS POROSITY, WODERATE NEURATION	UVESIONE-PACKSTONE	10		1	E	PALE YELLOW EROVAL: 1016 GRANSH ORA	5H 6/2	
FOF-32	1660 0	160) 3	NOOPATION  LUMSTONEPACASTONE PALE YELLOMISH ERDAM, MAIR &Z. LOM  ARTEGERARIAA PORCISTI, WOGERATE NOURATION  LUMSTONEMACESTONE, GRAININ ORANGE, 10/67 74, LOM  RETERICANIZAA FORGISTI, KIOCERATE KOURATION LIMOSTIE  LUMSTONE PACISTONE, GRAININ ORANGE, 10/67 74, LOM  RETERICANIZAA FORGISTI, MODERATE ROURATION  RETERICANIZAA FORGISTI, MODERATE ROURATION  RETERICANIZAA FORGISTI, MODERATE ROURATION  RETERICANIZAA FORGISTI, MODERATE ROURATION	LIVESTONE-WACKESTONS	18		1		GRANISH CAL		
POF-32	1661 3	18647	SYLENGRANALAR FOROSSTY, MODERATE PROVINCION COLOMIE DARKYELOMISH BROAM - 10TH 42	LIVESTONE-PACKSTONE	"	MERGRANUL	PODERAT	τ	10008.774		
POF-32	16617	1666 4	OCCOURTE DARK YELLOWISH ENOWN 10/R 42. WICKOCRYSTALLING, LOW PRIPONITIAND VIOLOT FORUSITY, MODERATE INDURATION	DOLOWITE	"	PREPOST - VIII	PODERNI	ξ.	BARKYELO/ EROWN: 1017	42	
POF-32	1666.4		DOLORITE GARKYBLIONISH BROWN: 107R 4Z	POLONITE	١.	FNFONT-VIX	GOOD		DARK YELLOV BROWN - 101F	SH 4/2	
			DOLOWITE, DARK YELLOWSH ERGYN1: 10'R 42. INCROCKYSTALLINE, HIGH PORGOT AND LUGGY PORGSTY, GOOD ENCORATION, LUGGYTE.				1		DARK YELLOV		
POF-32	16670	16680	INDURATION DIAGNIE OCLOUTE, DARK YELLOWSH EROWN: 10YR 4'9, WORDCRYSTALLINE, WODERATE POPONT AND VIGGY FOROSITY.	DOLOUTE	,	FEIFORT-VU			DARKYELLOV	MEN	
POF-32	1663.0	166a 3	GOOD RIGHATION DIVORTE  LIVESTONE-WACKESTONE, GRANGH GRANGE: 1018 TH, BOOERATE	DOLOVITE	2	PPI PORT - VU	d 0000	1	BROWN: 1016	TAS PRODUCE	
POF-32	1668.3	100-5	INTERGRANMENT POROSITY, MODERATE MEURATION, ORGANICS.  LAVINATIONS	UNESTONE-WACKESTONE	2	LANA PERENTAL	MODERA	ORGANIGS, TE LAVMATIONS	GPAYISH ORA 10:R 74	NGE:	
FOF-32	16年3	1870-0	LIVESTONE PACKSTONE, VERY PALE ORANGE; 101R MZ, LOW INTEROPLANTAR POROBITY, MODERATE INDURATION, BYPLYE	1				ENALVE SHELL FRAGNENTS.	VERTPALEO	Wise	
POF-32	1870-0	16713	SHELL FRAGUEATS PYRITE LIMESTONE-VIACHESTONE, VERY PALE GRANGE: 16VR MA, LOW INTERGRANALAR POROSITY, VIOLERATE MOURATION ENVILVE	(INESTONE PACKSTONE	l	O ESTERGRANUL		EVALVE SHELL	101R 8/2 VERY PALE DI	ENGNE	
F0F-32	16713	16720		UVESTONE-WACKESTONE	1	D PRIENCALVIUL	A WOOERA	E FRAGUENTS BYALVE AND	: 10/R 9/Z		
POF-32	1672.0	16784	LIMESTONS PACKSTONE VERY PALE DRAVIGE: 101R &A. LOW INTERGRAVALAR POROSITY, MODERATE VIDURATION, EMPLYE AND ECHTROD SHELL FRAGMENTS	UNESTONEPACKSTONE		O INTERGRANAUL	1	ECHORD SHELL	VERY FALE OF 101R 82	MANGE 1	
			LIVESTONE-WACKESTONE, VERY PALE DRANGE: 161R 8/2 LOW INTERGRANALAR POROSITY, MODERATE INDURATION FRACTURED	LIVESTONE-WACKESTONE	l	O RITERGRANAL		1	VERYPALE OF	ANGE	
POF-32	16784	1680 (		- Chimid-law Epilote	] '		, viena	EVALVE AND FOREKOO SHELL	l ["""		
FOF-32	1650 0	1631 (	UNESTONE PACKSTONE, VERY PALE ORANGE: 10YR 82 MOCEAATE BYTERGRANILAR FOROSITY, MOCEATE RIDURATION, BYALVE AND CONSIGNO SHELL PRACUPING PHYNE CUVESTONE PACKSTONE, VERY PALE ORANGE: 10YR V2. LOW	LIVESTONE-PACKSTONS	2	D PITERGRAVIUS	MESSON	BY ALVE AND	LEAY FALE OF	LLWONATE	
POF-32	1631 1	1634 5		LIVESTONE-PACKSTONE	,	O INTERGRANUL	A WODERA	ECHHOD SHELL TE FRAGUERTS	VERY PALE OF	LUFONITE	
			ECHSOOD SKELL FRAGMENTS LIVESTONE-PACKSTONE VERY PALE ORANGE: 197R V2 LOW REFERENMENT PORCISITY, MODERATE MOURATION SWALVE AND		ì	i	1	BYALVÉ AND	VERY PALE OF	- 1	
POF-32	1684 5	1638.0	LIVESTONE PACKSTONE, VERY PALE ORANGE, 161R 8/2, LOV	LIVESTONE-PACKSTONE	'	O INTERGRANAL O INTERGRANAL		TE FRAGVENTS	VERT PALE O	KANGE	
POF-32 FOF-32	1699.0	1	ENERGYANDER FORGSTY, ROCEANIE I FOR 82 LOW ENERGYANDER PAGETY, ROCEANIE INDURATION ENERGYANDER PAGETY, ROCEANIE INDURATION ENESTONE STACKESTONE VERY PALE ORDRIGE: 101R 82 LOW	UVESTONE PACKSTONE	;				VERY PALE O 1017 82 VERY PALE O	RANGE	
POF-32	1629 6	1672	LINESTONE HACKESTONE, VERY PALE DRAWGE: 10/R && LON WITERGRANDALAR PORGSTY, MODERATE MODIRATION	LIVESTONE-WACKESTONE	١,	1	1		VERY PALE O : 10YR 8/2 VERY PALE O : 10YR 8/2		
POF-32	1632.3	1694 6	NTERGRANALAR POROSITY, MODERATE INDURATION LIMESTONE-PACKSTONE, VERY PALE DRANGE: TOYR RZ. LOVY NTERGRANALAR POROSITY, MODERATE RIDURATION LIMESTONE-WACKESTONE, VERY PALE ORANGE: 1697 RZ. LOV	DUESTONE-PACKSTONE	'	O RITERGRAVAN	ì	TE	VERY PALE O	TANGE	
PCF-32	1634 6	(696	MTERGRAFIAAR POROSITY, POOR BIEDURATION LIVESTONE-MACKESTONE, VERY PALE ORANGE: 10YR 8/2, LOW	LIVESTONE-WACKESTONE	1	O INTERGRANA.		TIP I	: 107R 62 VERY PALE O	WASE	
POF-32	1698 4	17004	LIVESTONE-PACKSTONE, GRAYISH ORANGE: 1618 TH, LOW INTERGALANJAR FOROSITY, WODERATE PIOURATION, BYALVE				1	EVALVE MIELL	GRAYISH DAV	NOE.	
POF-32	1700-0	1702.9	SHOLL FRACMENTS LIMESTONE-PACKSTONE GRANGH ORANGE: UN'R TH, LOW INTERCOMMUNAS PORCESTY, MODERATE MOURATION, BYALME	LEVESTONE-PACKSTONE	1	O ENTERGRANAUL	AFANODERA	TE FRAGUENTS SVALVE SHELL	FOUR 755	NGE -	
POF-32	1702.9	1704		UVESTONE-PACKSTONE	1	ELTERGRAMAN	A VODERA	DE FRAGUENTS	100/R 204		
POF-32	1704 3	1705	QUESTONE PLANSTONE VERY PALE ORUNGE: 18/8 82. LOW RITERORAM AND FOROSITY, MODERATE ROURATION EVALVE SHELL FRACULATES UNESTONE BLANSTONE VERY BALE ORUNGE: 18/8 82. LOW	UNESTONE-PACKSTONE		O STERGRAMAN	L WODERA	BYAIVE SHELL TE FRAGNENTS	VERY PALE O		
POF-32	1706.0	17101	UMESTONE PACKSTONE VERY PALE ORANGE: 10/18 8/2 LOW PRIERCRAWALAR POROSITY, MODERATE VIDURATION EVALVE SHELL FRAGUENTS	UNESTONE PACKSTONE	.	10 INTERGRAVAN	LA WOODERA	ENALVE SHELL TE FRAGNENTS	VERY PALE C	NAVGE UMONTE	
	,		•								

1	- 1	1	LIVESTONE PACASTONE GRANISH CRANGE: 101R 14 LOW		ا. ا	BITERGRAIANA	l	1	1	Granshoravse. for 74	l	1
POF-32	17100	17112	UVESTONE-PACKSTONE, GRAYISH ORANGE: 101R M. LOW BYTERGRANDLAR POROSITY, MODERATE PROURATION, BY MALVE	UNESTONE PACKATONE				EVALVE SHELL		GRANISH ORANGE		
POF-32	17157		ENELL FRAGVENTS LIVESTON: E-PACKSTONE DARK YELLOWSH ORWISE: TOTAL 65, LOW INTERGRAHULAR POROSITY, MODERATE INDURATION E-VALVE	LIVESTONE-PACKSTONE		AMMARORATHI		BOALVE SHELL		DARKYELLOWSH	ĺ	
POF-32	1715 1		SHELL FRADVEHTS DOLOWITE DARK YELLOWSH ORANGE: 1517 65 INCROCRYSTALLINE WODERATE FURONIT FORDSTY, FOOR	LIVESTONE-PACKSYONE	10	AKHARORETHI		FRACIUEITS	ļ	DARKYELLOWSH		
POF-32	\$716.2		ENDURATION DOLOWITE DARK YELLOWYSH ORUNGE, 1017FE6, MACHOCAYSTALLINE, WODERATE PLYPOINT POROSITY, MODERATE ENDURATION FRACTURED LIMONIE	COLOVITE	20	F.N PO NT - VUC	-			DASK YELLOWSH		
POF-32	1718 4	1729 0	eduration fractured unchie Doloute Dark Yellowsh Orange : 101766 U Crocrystalline voderate filtont and vuggy fordsity,	OOLOVITE .	20	P.N PO-NT - VUC		FRACTURED		DASKYELLOWER	LIVONITE	
POF-12	1729 0			EOLOVITE	20	PAIRONT - VUC	GOOO			ORANGE: 101R64		
POF-33	1721 0	1722.0	DOLONIEL DIRKYBLOWSH ORANGE 1978 65, DECROCRISTA DIRKYBLOWSH ORANGE 1978 65, DECROCRISTA DIRKYBLOWSH ORANGE 1978 65, DOLONIEL DIRKYBLOWSH ORANGE 1978 65, DOLONIEL DIRKYBLOWSH ORANGE 1978 65, DOLONIEL DIRKYBLOWSH ORANGE 1978 65, DOLONIEL DIRKYBLOWSH ORANGE 1978 65, DOLONIEL DIRKYBLOWSH ORANGE 1978 65, DOLONIEL DIRKYBLOWSH ORANGE 1978 67, DOLONIEL DIRKYBLOWSH ORANGE 1978 67, DOLONIEL DIRKYBLOWSH ORANGE 1978 67, DOLONIEL DIRKYBLOWSH ORANGE 1978 67, DOLONIEL DIRKYBLOWSH ORANGE 1978 67, DOLONIEL DIRKYBLOWSH ORANGE 1978 67, DOLONIEL DIRKYBLOWSH 1978 67, DOLONIEL DIRKYBROWSH 1978 67, DOLONIEL DIRKYBROWSH 1978 67, DOLONIEL DIRKYBROWSH 1	DOLOVITE	30	ENTRONE - VIX	INCOMERATE:	FRACTURED	1	DARKYELLOWSH	1	
POF-32	1722.0	1722.8	Morocristalier, hostendom red vocat forusitt. Occob Bolowie, bark velomen orange: 10yr eg. Morocrystaling, vocerate papout and vogot porosity.	DOLCUTE	30	EMPONE-VIX	6000	PRACTURED	1	DARKVELLOWSH		
PGP-32	1722.8			DOLOVITE	20	PARECON - VIX	6000			ORANGE: NOR 6/6 MODERATE YELLOWSHEROWN		
FOF-32	1723 5	1726 0	SOCONTE MODERNE NELLOMBHEROWN: 10/18/24. WORDOR STALINE NODERNE PREGNE MID VLOGY POROSTY, GOOD ROUBLING FRACTURED DOCONTE, PILE VELLOWSH PROVIN: 10/18/92, MCROCRYSTALINE, LOW/PAPONT AUDVOCKY POROSTY, GOOD KOURATON	DOLONIE	20	PRIPORT -VUC	9000	FRACTURED		10/R 54		
POF-32	17760			potovité	10	FMFONT-WG	6000	ORGANICS		PALE VELLOWISH EROWN: 101R 6/2	İ	İ
F0F-3Z	1772,4	1725.6	DOCOMER PALE YELLOWSH BROWN: IGHT 62, INCROCRESTALLINE, HIGH PRIPOSIT AND VURBY PORDSITY, GOOD INDURATION, FRACTURED	DOLOVIE	30	P.N PONT-VUC	6000	FRACTURED		PALE YELLOW/SH ERDWY: 10/R 6/2		
FGF-32 PGF-32	1728 6 1730 3		DOLOWITE PALE YELLOWSH BROWN, 16/18 6/2, WORDCRYSTALLINE. LOWYWGGY POROSITY GOOD INDURATION, FRACTURED NO RECOVERY	DOLOWIE	10	SUGULAR	6000	FRACIUSED		PALE YELLOWSH EROWN: 10/18 E/2		
POF-32	1734 5		DOLOWIE, PALE YELLOWSH BROWN: 10YR 6/2 M CROCRYSTALLINE MODERATE PS/POINT AND MOLDIC PORDSITY, POOR INDURATION.	DOLOWITE	20	Patront-VIII	POOR	FRACTURED		PALE YELLOWSH EROMA: 1018 6/2	LIVORATE	
	ļ	11,60	DOLOWIE DARKYELDWISH ORAYCE: 10/6 65. UICROCRYSTALLYIE WODERATEP/IPO/IT AND WOLDIG FOROSITY.	DOLOWIE		FMFONT-WI		FRACTURED		DARKYZŁOWSH DRAWGE: 101R 66		1
F0F-32	17360	17383	FRACTURED LUCKSTE DOLOME DISACLEUT/ASH GEN/GE: 1976 ES. VERGOLTSTALLOE, ENCORATE PLIPOTA AUS POLDO FORDSTT. VERGOLTSTALLOE, ENCORATE PLIPOTA AUS POLDO FORDSTT. VERGOLTSTALLOE, ENCORATE PLIPOTA AUS POLDO FORDSTT. VERGOLTSTALLOE, LUCKSTE PLIPOTA AUS VERGO FORDSTT. VERGOLTSTALLOE, LUCKSTE PLIPOTA AUSTVAGO FORDSTT. VERGOLTSTALLOE, GENANSCORNOSE: 1978 N. LUCKSCR STALLOE. DOLOME, GENANSCORNOSE: 1978 N. LUCKSCR STALLOE. RECORDALE POLOMETA, DO DOLOGO FORDSTT. VERGOLTSTALLOE.		ļ	FNPOST-VIC	l	l I		ÇARK YELLOMISH ORANGE : 10YR & 5	UNONITE	
FGF-32	1733.5	13400	MODERATE INDURATION FRACTURED, LIMONITE DOCOMITE, GRAVISH GRAVISE : 1978 7H, INCROCHYSTALLINE, MODERATE PRISONT AND MOLDIC POROSITY, MODERATE	OCLOWIE	ĺ		l	!		ORAN SHORAUGE:	LINOSITE	
POF-32 POF-32	17420	1742.0	NDURATION LIMONTE DOCUME, GRAMMICRANCE, 1978 7H. MICROCRYSTALLAS, LOH PENSOLIT, AND MULTO PORQUITY GOOD INTURATION DOCUME, PALE YELLOWISH BROWN: 1078 62, MICROCRYSTALLINE,	DOLOVITE	20 to	PANFORT - VIX PRIPORT - VIX	1			15:R 7/4 Granish Oranis 10:R 7/4	Luxuic	
FOF-32	1743.2	1744 5	DOLONTE, PALEYBLOMESH BROWN! HOW 62 WARROCKTSTALLITE, LOW PURPOSH MO WOLD C POROSITY, GOOD INDURATION, FRACTURED	DOLOVITE	10	Fai Poatt - VX	600D	FRACTURED		PALEYELOWSH EROWN: 10/R 6/2		
POF-32	1744.5	1745 0	DOLONTE, PALE PRILONSH ERGANT TON BOW DE MUCHUNTA IALUNE. (DWI) PROPORTI DU MOLED O POSOTTI, CODO MUCHATONI, FRACTURED  DOLONTE, NODERAIE YELGA/SH ERGANT, 1978 SH. MUCROCRE STALLINE, HIGH PROPORTI ACTUROSY POROETY, MOGERATE KOURATION, FRACTURED  DOLONTE, PALE TELLONISH ERGANT, 1978 SL. MURROCR (STALLINE).	DOLOVITE	,,	EN PONT-VAK	VOOEFIATE	FRACTURED		PODERATE YELLOWEH BROWN 101R 54		
POF-32	1745.0	1745 9	DOLOWITE PALE YELLOWISH GROWN: 10 YR 62, MCROCRISTALLINE, HOSH PURCHT AND VAIGHT FORDSITY, MODERATE EXCURATION FRACTURED DOLOWITE MODERATE YELLOWISH GROWN, 16/78 64.	DOLOVITE	100	EN POST AVAIL	PODESVIE	PRACTURED		PALE YELLOWER EROVAL: 10:8 6/2		1
	ŀ	17453	POLOWITE MODERATE YELLOWICH EROWN. 16/R 64, U/CRDCRYSTALLINE, KICH FIXIFONTI NIO VUSGY FOROSITY, 6000 INDURATION FRACTURED	DOLOVITE		Pat POTAT - VAK		FRACTURED		MODERATE YELLOWSH ERDÁN 'NYR \$4		
PGF-32	1745.9				-	Fai POSE - VIX		PRACTURED		HOCERATE YELLOWISH BEDAM		1
POF-32	17453	1	MCROCRYSTALINE, MODERATE ENFORT AND VIGGY POROSITY, GOOD WOMATION FRACTURED OOLOWITE MODERATE FOLLOWING ROWN: 1948 S4, MCROCRYSTALINE, MODERATE POROSIT AND VIGGY POROSITY.	DOLOVITE		1		Procession 1		IGIR 64 BOCERATE YELLOWSH BROWN IGIR 64	Livorate	
POF-32	17500	1752.2	MCROCRISTALINE MODERATE PARONT AND WOOD PORDSITY. GOOD BEQURATION LUCKSTE OOLOWITE MODERATE YELLOWISH EROVIN; IDIR E4. UCROCRISTALINE, MONEY/PONT AND WIGGY PORDSITY.	DOLOVITE		PRIPORT - VIX		'		HODERATE YELLOWSHEROWN	UNOSTE	İ
FOF-32	17522	1754 1	UCACCATE MODERNE TELLIFORNICA NO. 1, 1001-15, 1004-15, 10	DOLOWIE		PARONT - VIX				: 10xR59 MODERATE YELLOM: 51 EROWN : 10xR54		
FCE-32	1754 1	1756 3	PRIVATION UNCORTE  DOLOWITE, MODERATE VELLOWICH BROWN: 10TR EM.  W CRICKYSTALL SET MODERATE PURCHIT, VUSQY, AND MOLDIC	DOLONAE	l	FAPONT-VU	1			: DYR 54 MODERATE VELLOWISH BROWN 191R 54	ENONTE	
F0F-32	1756 3	1757 6	W.CROCKYSTALLISE MODERATE PURPORIT, WOOT, AND WOLLD OP PORGETTY, GOOD INDURATION LIVEWITHE DO DOLONTE, PALE YELLOWSHIP BROWN! 1678 69, W.CROCRYSTALLISE, HCH FELPORIT, WOOT, AND MOLDC POROSITY, MODERATE	BOLOWIE	20	EN PONT-WI	6000	' [		PALEYELLOWSH	TONOSTE	
FOF-J2	1757 6	11590	POLICIA DALCANE	DOLOWIE	×	PAI PORT - VUI	MODERATI			EROWN: IOTA 62 PALE YELLOWSH EROWN: IOTA 62	DVONTE	
POF-32	1759 0	17630	MICH PERPONE AND WIGGE POROSETY, POCH EXCRAETION, LIMOINTE DOLONSEE, PALE YELLOWISH EROWN: 10/18/62 MICROCRYSTALLINE MODERATE PRIFORE AND MICROIC POROSETY, GOOD BULLWATION.	DOLDWITÉ	×	PAPONT-VU	POOR			eroan: Karez Paleyellowsh	LIVONITE	
POF-32	17800	1762.1	PROGRAMED DOCKINE	DOFOnit€	x	FINFORT-VU	9000	FRAGTURED		EROWN: NOR 6/2 VERY PALE ORANGE	UVONTE	
POF-32	1752 \$	1763 0	LMESTONE-WACKESTONE VERY PALE ORANGE: 19/R 82. LGW INTERGRAVILLAR AND WIGGY PORDSITY. MODERATE INDIRATION LAVESTONE-PALCKSTONE VERY PALE GRAVEL: 10/R 82. LGW INTERGRAVIULAR MID WIGGY POROSITY, MODERATE INDIRATION	LIVESTONE-WACKESTONE	i	MTERGRAHIUU	1	1 1		YERY PALE ORANGE	LIVONITE	
POF-32	17ವ0		SOVE ORGANICS	LIVESTONEPHONSTONS	10	hitergrafivu	MODERAT	SOVEORGANICS		16YR 8/2 VERY PALE ORANGE		
POF-32 POF-32	1755.2 1763.4	1768 4 1770 0	LIVESTONE-WACKESTONE, VERY PALE ORANGE; 10/R M2. LOW REFERRANDEAR AND VUCGY PORDISTY, NODERATE BENERATION NO RECOVERY	UVESTONE-WACKESTONE	11	PHERGRAPAUL	MOCERAN			191R 82		
FO#-32	1770 0	1772.1	DOLONTE MOCERATE YELLOWSH ERIONN: 1018 54. MICROCRYSTALLINE HIGH FILEONIT AND VUGGY POROSITY, GOOD INDURATION FRACTURED, GLANCONITE LIMONITE	DOLONITE	24	FN PONT - W	0000	FRACTURED. GLAUCONITÉ		VELLOWISH EROVAN	UVORATE	
PGF-32	1772.1	1776.0	DOCOME MODERATE VILLOVISH ERROWS: 10/18 P.4 MERCENTRISHLING HEAD PROVIDED THAN DURSTON PROGRATI, GOOD SPOURATION PRACTIMED GLANCOWITE LIPOSITE COCOMITE MODERATE VILLOVISH BROWNS: 10/18 P.4 MCROCKYSTALLINE: MODERATE PLAFONT POROSITY, GOOD BROWNATION FRACTURED NO RECOVERY	BOLOWIE	2	PAI PONT - W	9000	FRACTURED		MODERATE VELLOAVSH EROMIN I DVR SN		
POF-32	1776 Q	1789 Q	NO RECOVERY  DOLOWITE, INCORPATE YELLOWSH EROWN : 10/R \$4.							MODERATE 18LOWER BROWN		
FOF-32	17800	17810	DOUBLE MODIFIE BLOWSH BROWN, 16th 54 MORGANITHMEN WOODENER WOOD HE SON	OCHOMITÉ	25	FX FORT - VV	9000	FRACTURED: GLAUCONITE		10YR 54 HODERATE	LIVONITE	1
POF-32	17810	1784.3	DEROCRYSTALLINE, HIGH FINPONT AND WOODY POROSITY, GOOD INDURATION FRACTURED, LINCONIE TON BOX, MERCAYSTALLINE, TON BOX, MERCAYSTALLINE,	COLOMITÉ	ж	PRIFORT-VU	0000	FRACTURED		YELLOWASH BROWN : 10VR 54	LIVOYATE	
POF-32	17843	1723 1	Troubled English	DOLOVITÉ	3:	Patront - VU	6000	FRACTURED		PALE VELLOWISH BROWN: 104R 6/2	LINCAITE	
F0F-12	1788 1	1767 5	DOLOUTE PALE VELLOWISH BROWN: 10YA BZ MICROCRYSTALLINE WODERATE PHYPOYA PAYD WAY PORGISTY, GOOD & DURATION COKONTE, WOODRAIC YELLOWISH BROWN, 10YA SA, WICROCRYSTALLINE, MODERATE PHYPOYAI PORGISTY, GOOD	DOLOVITE	21	EMFORT - YU	6000			PALE YELLOWISH EROWN: 10YR 6/2 WODERATE		
POF-32	1729 5	17700	ECCOCRYSTALISE DOCEMATE PROPRIED FOR COTY, GOOD SHOURATION, FRACTURED STATES OF THE CONTROL OF T	DOLOVITE	2	PEN POINT - YU	0000	FRACTURED		. IOVA SA		
POF-32	1730-0	1779 6	MOURATION FRACTURED DOCUMPE DATA YELLOWISH BROWN: 16 FR 4/2 DOCROCKISTALINE WOORRATE PRIFORM AND WUGGY PORODITY, GOOD BROWNATION FRACTURED PRIFORM 1878 5/4	DOLOWITE	2	PALEONII - VV	6000	FRACTURED		BARK YELLOWSH SROWN: 10YR 4/2 WOODERATE	PYRITE	
POF-32	1730 a	1773.2	DOLOWIE MCDEATE YELLOWSH BROWN INTO SK, MCROCRYSTALINE MODERATE PRIFORM AND VUGGY POROSTY, GCOOD MODURATION, FRACTURED	COLOWITE	,	FEI POITT - WI	6000	FRACTURED		VELLOWSHEROAN 1078 54 MODERATE		
POF-32	1793.2	17947	DOLOWITE MODERATE YELLOYISH BROWN: 10TR SQ. MICROCRYSTALLOS, RICH PAPORT, MOLDIC, AND VICKOY POROSTY, GOOD BEULRATION	DOLOVITE	3	FAROUT - VI	cccco			VELLOWSH BROWN	]	
POF-32	17947	1795 7	DOLOMITE BARKYBLOWSH BROWN 1078 42 MCROCRYSTALLINE, MODERATE PYIPONT FOROSITY, GOOD INDURATION	DOLOVITE	2	F21F02fT - VU	6000			DARKYELLOWISH EROWN: 101R 4/2		
F0F-32	17957	1797 9	COLOMITE, PALE YELLOWSH EROWN: 1017-62, VICROCRYSTALLINE, MODERATE POPOSIT AND VALGOY POROSITY, GOOD RICHRATION	DOLOWITE	,	PN PORT - Vu	6000			PALE YELLOWSH 590WH : 1018 6/2		
POF-32	1797.9	1799 1	DOLONTE: PALE YELLOMEN BROWN: 10YR 6/2, W.CROCRYSTALUNE HEGH PRIPORT AND LUGGY POROSITY, GOOD RIGHRATION, PYRIFE	DOLOVITE	,	PN PONT - VU	GOOD			PALE YELLOW-SH EROWN: 10YR 6/2	PIRGÉ	
POF-32	1799 1	1500 0	NO RECOVERY  OXIONTE: NODERATE YELLOWISH BROWN: 10'YR 64,  NOTER OF THE STANDARD OF THE STANDARD STAND					ORGANICS AND LAMNATIONS		NOOERATE YELLOWASH EROWN		
POF-32	1500-0	1809 5	ORGANOS AND LAWNATIONS, LIMONTÉ DOLOWITE, MODERATE PLACANS ERROYN, 1978 EN WARDONYSTALLINE, MODERATE PLIFONT AND MUSICY POROISTY.	DOLOWITE		PEN POINT - VA		JAWMATIONS		. 10YR 64 SCOERATE YELLOWAH BROWN	Fundante	
POF-32	1600:5	1801.2	GOOD EXCURATION  DOLORIE MODERATE YELLOWESH BROWN: 10YR 64, INCORPORATED BY COMPRISHED BY BY MICKEY POSICIATO, GOOD	DOLDVITE		EN FORIT - VI				1078 64 900ERATE YELLOMSH EROMN		
POF-32	18012	16656	DOLONGE PALEYELLOWSH EROCHE! LIVORTE DOLONGE PALEYELLOWSH EROCH!: 10/R 6/2 IMCROCRISTALLINE MODERATE PROPORT AND WIGGY POROSITY, GOOD INDURATION	DOLOVITE		5× 6041-VI		SCHE FRACTURES		PALE VELLOWISH	Livoraté	
P0F-32	1505.6	10100	DVONTE	DOLOVITE	2	FM POME-VI	d 6006			PALE YELLOWISH	Chokale	
PQF-32	18100	1811 4	DOCUMIE PALE TELLOMEN BROWN: WITHOUT MACROCATSTALLINE LOW PROONT POROSITY, GOOD VIDURATION OOLOWITE, PALE YELLOMEN BROWN: 1078 BX MICROCATSTALLINE WODERATE PRIPORT AND VUICES POROSITY, GOOD INDURATION.	DOLOWITE		PHPONT-VI				PALE YELLOWSH		
PGF-32	18114	1812.0	WODERATE PRIPORT AND YUGGI POHOSITY, GOODINGURATION, LINONTE DOLOUTE PALE YELLOWSH BROWN: 1018 BY MICROCRYSTALLINE WODERATE PRIPORT AND VIOGS! POROSITY, MODERATE	DOCOVITE	'	FRIFONT -VI	6000	I		BROWN: 10YA 6/2 PALEYELLOWSH	LIMONTE	
POF-32	18120	1813 (	PIDURATION LUCINTE	DOLOWITE	2	PINFONT-W	KAREDON	E		PALEYELLOWSH	Uworate	
POF-32	1813.6	15183	OXX ONTE, PALÉ YELLOWISH BROWS: 16YR 62, INCROCENSTALING LOWFERPONT AND VLOOP POROSTY, MODERATE REQUIRATION DOXONTE PALE YELLOWISH BROWN: 16YR 62, INCROCENSTALING	DOLOUITE	'	O PIN POINT - VI	POCERAT	TE.		EROVAE: 1018 6/2		
P0F-32	1516.2	15176	MODERATE PARPORT AND YUGGY; MODERATE INDURATION. UNIONIFE DOCONTE VERY PALE ORANGE; 10TR 8/2 M CROOR (STALLINE MODERATE PARPORT AND YUGGY; MODERATE INDURATION.	DOLOUITE	2	FN PONT-W	IC MODERA	TE		FALEYELLOMSH ERGAN: 10/R 6/2	UNCHATE	
POF-32	15176	18161		DOLOUITE	2	o FRIPONT-W	JG WODERA	1		VERY PALE ORANGE	UWOVITE	
POF-32	15181	1821.1	OCCOUNTE PALE YELLOWISH EROWN: 1018-62, DXCROCRYSTALLINE LOW PRIPORT AND WOOGY: GOOD BEDURATION, FRACTURED. PYRITE, LANDINTE.	DOCCOURE	1	0 मधान्यवा-V	6000	FRACTURED PYRITE		BROWN: 1018 645	DWONTE	
POF-32	1521.1	1922.6	COLOUTE PALE YELLOWISH ESONN: 10YR 62 WCROCRYSTALIWE WODERATE PRACONT AND WIGOT: GOOD NOURATION, UNION TE DOLOUTE PALE YELLOWISH BROWN: 10YR 62, WCROCRYSTALIWE			o Fai FOATI-VI	1			PALE YELLOWSH EROAN: 1078 67 PALE YELLOWSH	FAORILE	
P0F-32	1822.0	1823	DOLOUTE, PALEYELOWSH EROWN: 1078 67, WCROCRYSTALLIAR LOWPERPORT: GOOD REWRATON DOLOUTE, GRANDH ORWIGE: 1078 74, MCROCRYSTALLIAR MCCRASTEPEROM AND VIOGY; GOOD REWRATION, GLAUCONITE			0 F21902IT - VI				GRAYISH ORANGE.		
POF-32	1823 1		UNONTE	DOLOVITE		D F21 PO4IT - V	1	GLAUCONITE WHITE GUARTZ		PALE YELLOWSH	CAOPALE	
POF-12	1824 0	1325	DOLOWITE, PALE YELLOWISHEROVAY: 1078 62 MCROCRYSTALLINE LOW PRIPORT: GOOD INDURATION WHETE QUARTZ RIPALINO MIGS	DOLONIE	1 .	o est bosts - A	xd 60000	esumavuos	1	840/M: 10/R 62	1	1 1

FGF-32	1525 7	1626 0 1	KORECOVERY COUNTE PELOWER GRAY (2): 57 M, INCROCRISTALINE COM PSPONT POROSTI, GOOD MOURATION WICH KPLED WITH WHITE	1	1			VUGS MFQLED WITHWATE		YELLOWSH GPAY (7)	
F0F-32	1826.0	1527 7	DUARTZ DOLOWITE, YELLOWIDH GRAY [2]: 5Y MI, M-CROCAYSTALLINE, H/GH PASPONT, MOLOYC, AND VUIGOY FORDSHIY, COOD NADURATION	DOM DUNTE	10	PAIRONT-VAX		QUARTZ FRACTURED		STATI YELLOW SHIGANY (2) STAT	proving
FGF-32 FGF-32	1522.4	1530 0	FRACTURED LIVONITE NO RECOVERY DOLOVITE PALE YELLOWISH BROWN , 10/R 62 M/CROCRYSTALLINE :	3140,000	30	PAIFONT-VAX	GOOD	VIKIS MFALED WITH WHITE		:3141	poodie
FGF-32	1939.0		ON PERSON AND VOCAST POROSITY, MODERATE INDURATION MAGNETICAL EDITATION AND SERVICE DEPOSITION OF THE PROPERTY	DOLOVITE	10	PRIFFCRIT - NO	LICOERAT	VUCS E-FALED		PALE YELLOWSH EROWN: 10/RE/2	UVOMTE
FOF-32 POF-32	1834 7 1839 0	18230	DOCOMITÉ PALÉ ) ELLON-SHÉRONN : WIR EZ, WCROCRYSTALLNÉ, NO OSSERVABLE POROSITY, MODERATE ROMRÁHON, YMAS SKILLED WARNANTÉ OMARYZ LIMONTÉ NO RECOVERY	DOFDALLE	٥	NO OSSERVALL	DOOERAT	WITH WHITE COUNTY		PALE YELLOWSH BROWN: 10YR 6/2 MODERATE	UVOMTE
POP-37	18490	16418	DOLOWITE, WODERATE YELLOWYSHEAGOAST: 1078 SM, WORDCRYSTALIME TO OBSERVEASILE; WODERATE INGURATION DOLOWITE, WODERATE YELLOWISH BROWN: 1078 SM,	DOLOVITE	9	NO OBSERVADI	INCOEPIAT	VIXUS E-FALLED		YELLOWSH EROAN 1 NOTE 64 MODERATE YELLOWSH EROAN	
FOF-32	1041.8	1814 9	DORGON (STALLINE LOW PARCENT AND VOSGY POROSITY,  DODERATE NOURATION VOGS EXPLIED WITH WHITE QUARTE  BOLOVITE MODERATE DELLOWSHERDWM: 1078 64	DOLOVITE	10	PARPONE-VIK	IVOCEPAT	WITH WHITE QUANTZ VUGS REFALED		HOOERATE	
FOF-32	1844.9	1845 5	IZCROCRYSTALUME, MODERATE PINPONT AND VUGGY PORDSTY. INCOGRATE CUDURATION MINDS SUFFLED WITH WHITE DUARTZ  DOLOWITE, INCOGRATE YELLOWISHEROWIT, 1018 64.	DOLOWITE	20	F2I FONT - VIX	PODERAT	SEATTH VARIETY		YELLOWSH BROWN NOR SA MODERATE	
FOF-32	1946.5	1049.5	P.CROCRISTALLINE LOWIFF PORT DOUGLE, \$10 WISGY FOROSTY, INCORPATE SIDIFATION, WISG BURLED WITH HISTER GRAFTZ FULL MARKED MINISTER GRAFTE STATE TO THE TAIL OF THE PARTY FULL MARKED MINISTER CREATER STATE TO THE TAIL OF THE PARTY THE PARTY OF THE PROPERTY OF THE PARTY OF THE	DOLOVITE	10	FAIFONT-YUK	NODERAT	WITHWHITE		, 10VR EN	
FOF-32	1848 5	- 1	V:CROCRYSTALLINE LOW PARTONT AND LUGGY POROSITY.	DOLOVITE		PALEGAL - VIX	l	MITH WHITE		GRAYISH ORANISE 1078 7M PALE YELLONYSH	
FOF-32	1650-0	1251 6	MODERATE EDURATION I RACIPIARE CACLARFOUS DOLOMIE PALE PALE MASH EROAM : 1818 62 CACROCK STALLIKE IN O DSSENYEMAE POMOSTY, MODERATE NOURATION HOUS PRALES WITH WASHE GUARTZ CROSLOSS CALCARGOUS DOLOMIE RALES YELLOMISH SROWN: 1818 62 CACROCK STALLIKE LOW HOUS TO POMOSTY, MODERATE DOUBRATION HOUS SPETLED WITH YASHE GUARTZ, CROSLOSS CHARLES STALLING HOUSE ALL SPET LOWER SPECIAL INDICAS TO LINE SECRET OR HOUSE ALL SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECIAL ORDER DELI SPET LOWER SPECIAL INDICAS TO LINE SPECI	DOLOVITE		NO OSSERVAL	MODERAT	WITH WHITE		EROAN: 101R 62 PALE YELLOWISH	ORGANICS
F0F-32	1556 4	1556 4 1540 7	NOURATION Y VOS REPLED WITH (WHE CHARTZ ORGANICS CALCAREOUS DOLOVITE, PLALE PRICAMENT BROWN: 10TH REZ MCROCRISTALLINE: NO OBSERVEABLE: MODERATE MOURATION WASS MYALLED WITH WHITE COLARIZ: ORGANICS CALCAREOUS COCIONIE: MODERATE YELLOWSHE BROWN: 10TH 54	DOLOVITE	10	VUGULAR NO OBSERVAEL	MODERAT	WITH WHITE		erovn: 10/1862 Pale Yellowsh Erovn: 10/1862	ORGANICS ORGANICS
POF-32	1559.2	1559 2	was by aled thin hyther court. Cheadain Ollomeous docionie. Brogerie yelowish eroan: 1978 st Karocaystaldie. No observeale: Koophae Eduration Wass Byaled With White Ouriz, Organics Dueston:Syacrestoni. Pale yelomish eroan: 1978 sz. No	DOLOVITE	0	#0 08\$EEVABL		WITHWHITE		WODERATE YELLOWISH BROWN 10/R 54	ORGANICS
POF-32	15500	1663.0	OSCENCASE : MODERATE INDURATION WHITE QUARTZ LAUXALTIONS ORGANICS INVESTIGATE ASSENDED PARE VEH DIVASSERIOAN : 1078 62	UVESTONE-WACKESTONE	0			WHOTE CHARTZ		PALÉ YELLOWAN EROWN: 10YR 62	ORGANICS
POF-32	1653 0	1553 6	BODERATE PASPOSIT AVB VASGS; MODERATE INDURATION WHITE GUARTZ LAMMATIONS, ORGANICS DONOMIE PALE YELLOWISH BROWN; 1978 62, MICROCRYSTALLINE.	UNESTONE-WICKESTONE	20	KO OBSERVAĐI	NOTERAT	VANTE CHARTZ CLAVALITICALS		PALEYELLOWSH BROWN - 10YR 6/2	ORGANICS
F0F-32	1553 6	1554 3	NOCERATE PURPORIT AND VURGET; INCOERATE NIDURATION WHITE OUATIZ  OUATIZ  OVALUEE BUILD VELOCITED BETTAND HOND FOR INCENCENTALINE	DOLOWIE	20		l	WHITE QUARTZ		PALE YELLOWSH PALE YELLOWSH	
FQF-32	1564-3		NO OBJECTIVE STOCKARTE NOURANCE MATTE COURTY. LAURANTONS ORGANICS DOCOMER NODERATE VELLOWISHEROWN. NOR ST. MCROCRYSTALINE LOWFONDON AND VUOGY, MODERATE	DOLOWIE	Đ		l	LAVINATIONS LAVINATIONS		BROWN : 1019 69 BOOERATE TELLOWISH EROWN	ORGANICS
POF-32	1567 2 1567 8	1957 6	CONTROL STATUS ELECTRONICA AND CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL AND CONTROL CON	DOLOVITÉ				VANTE QUARTZ VANTE QUARTZ E LANNATIONS		: 107R S4 MODERATE VELLOWASH EROWN : 157R S4	ORGANICS ORGANICS
PGF-32	1567 8	- 1	EXCURATION WHATE CHARITZ LAWNATIONS, ORGENICS  CLAY, INCOERATE MELLOWISH ERICKH: NOR SM, NOW  RITERISER/ANTAR; UNICONSOLIDATED WIDURATION	GLAY		EN POSIT - VIC	1			MODERATE VELLOWSH ERGAN 10/R 5/4	
POF-32	1563 5	- 1	DOLOWITE PALE YELLOWSH EROWN : INVRESS MCROCRISTALINE. LOW PRIPORT MOUNCEY : KODERATE MOURATION CALCUREOUS DOLOWITE PALE YELLOWSH EROWN : 10 PK 62	DOLOVITE		EN PONT-VIX	1			PALEYELLOWSH EROWN 15/18/6/2	
POF-12 POF-12	(340) 0. 1269 6	1840 6	u-crocrystalline Lowepupo MT and Vussay; Moderate Bourration No recovery	COLOWITE	10	P.N.POHT - VA	MODERA	Ī		PALE YELLOWASH EROWN 101R6Z	
POF-32	18790		CALCAREOUS BOLOWITE, PALE YELLOWSH EROWS: 10/R-62, MCRCCRYSTALLINE, NO OBSERVEABLE POROSITY, WOODRATE BOURATION LAWSATIONS LIWESTONEWACCESTONE, PALE YELLOWSH EROWS: 10/R-62, NO LIWESTONEWACCESTONE, PALE YELLOWSH EROWS: 10/R-62, NO	DOLOVITÉ	a	NO CREEKVASI	INDC-ERAT	E LAWFRATIONS		PALE YELLOWSH EROWN: 1017-64	
POF-32	1974 1	1972.4	DASSERVEABLE POROBLY), MODERATE MOURATION, LAVINATIONS. FOR AND THE FOR THE BETTANK STORE AS A NO DASSENCE AS E	Inselore wacktelove	۰		ł.	E LAWSTATIONS	FORAUSSFERA	PALE YELLOWSH SSOAN: 10/R 6/2 DARK YELLOWSH	
P0F-32	1872.4	19727	POROSTY, UNICOXISCLOATED INDURATION UNESTONE WALKESTONE MODERATE VELLOWISHEROWN, 1918 EA NO OBSERVEASE POROSTY, WODERATE INDURATION	CLAY LIVESTONE-WACKESTONE	0	NO OBSERVABI		MUDATED E LAWARDONS	FORAMNFERA	BROWN: 10'rR 4'2 MODERATE VELLOWISH BROWN : 10'rR 54	
POF-32	18727	10/3.9	LAUNATIONS FORAMITERA  CLAY, MODERATE YELLOWISH BROWN: 101R 64, 110 0836RVFABLE PORDSTY, INCOMSOLIDATED BROWN: 101R 64, 110 0836RVFABLE UNDESTONE-MYCHASTION PALE YELLOWISHEROWN: 101R 62, 110	CLAY	0	NO OBSERVADI				MODERATE YELLOWER BROWN 10'/R 54	
POF-32	1974 1		UMESTONE MACKESTONE, PALEYPELOWISHEROWN: TOTREOZ HO DESCRIVEASE POROSITY, MODERATE COURACIÓN, LAW, MATORIS FORMANATERA CLAY, PALEYPELOMISH BROYN: 1078 62, 190 OBSERVEABLE	UVESTONE-WACKESTONE	0	NO OSTERVARI	MODERA	E LAVALADONS	FORAVNIFÉRA	PALEYELLOWSH BROWN: 107R 6/2 PALEYELLOWSH	
POF-32	18745	1974 9	Porgety, deconsolidated edulatation Linestore-wackestone, pale yellomen eroan : 18 r 62 ro Beserve-sle porgety, poor experitor lavertions.	CLAY	٥	NO OSSERVABI	l	1		BACKET: 1018 6/2 PALE VELLOWSH	
POF-32	18769		PORAUNTERA LUVESTONEWACKESTONE WOODNATE YELLOWSH BROWN: 10/7R 59 LOWINETERGRANILAR POROSTY, INDEERATE INDURATION LAURIATIONS WHITE OWARTZ FORWAYFENA	LINESTONE-WACKESTONE  DWESTONE-WACKESTONE		NO OBSERVASI	l	LAVISIATIONS LAVISIATIONS WHITE QUARTZ	FORAUN FERA	BROWN: 16/R 6/2 MODERATE YELLOWSHEROWN : 16/R 64	
POF-32	1975.8	- 1	PARTICULAR SECURITION OF STREET, STREE	PARELLONG-ANACKERIONE		NO OBSERVAE	l	]	FORAUTIFERA	PALE YELLOWASH EROVN: 10/186/2 PALE YELLOWAN	
FOF-12	1979-2		CASERVEALE CORDSTY, POOR BOURN DON, PORAMITERA UMESTONE MUDSTONE, PALE YELLOWED BROWN: 1578 SE, NO CASERVEALE POROSTY, POOR BOURNESON; UMESTONE MAD SESSIONE, PALE YELLOWED BROWN: 1578 SE, LOW CONSTRUCTION OF THE PORT OF THE PORT OF THE PALE OF TH	UVESTONE-VUDSTONE		NO DESERVAB	•			PALE YELLOWEN BROWN I TO R 6/2 VERY PALE CRANCE	
POF-32	1259.0	12822	entergrammar porosty, woderaté induration, limonate formanapera pitrité questoné-sylocéstoke came (2); sy 4/1, no observé-silé porosty, noderate induration l'ambations, poramapera	LIVESTONE-WACKESTONE	10	опелована			FORDUISFERA	OUVE GRAY (2): SY	PYRITE.
POF-32	18222	- 1	ORGANICS UNESTONS-WADGESTONE, VERY PALE GRANGE: 1918 82, NO ORGANIZATION WHITE COURTE.  NOTE: NO CONTRACT OF THE COURTE COURT OF THE CO	UNESTONE WACKESTONE	0		ļ	E LAVANTICALS	FORAVNIFERA	VERY PALE ORANGE	ORGANICS
FOF-32	1839 7	1597 7	FORMANYFERA UMSSTONE-WALDESTONE VERY PALE DRANGE: 161R 6/2 LOW PHTERGRANULAR POROSITY, MODERATE INDURATION YAMTE OUARTZ FORMANYFERA	LIVESTONE-WACKESTONE			1	IE WHITE QUARTZ	FORAMNIFERA	VERY PALE ORANGE : 101R 52	
POF-32	1537 7 1538 1		CHARLE FORWINGERA  [LIMESTONE-MACKESTONE, VERY PALE CRANCE: INTR-62, NO COSERVEASLE POROSITY, MODERATE SIOURATION FOR MINISTERA LIMESTONE-MACKESTONE, VERY PALE CRANCE: INTR-62, NO	Finestové-wackestove		NO OBSERVAS			FORAN INFERA	VERY PALE ORANGE : 10YH 8/2	
POF-32	1590 0			PAGE 101 E 4/4CKE 2104 E		NO-OBSERVAE		LAKNATIONS	FORAVNYERA	VERY FALE ORANGE : 1014 8/2	ORGANICS
POF-32	1293 3	1E93 7	LOCATE FORAMFERA ORGANICS LIVESTONE-WICKESTONE VERY PALE ORANICS: 1 IOR AZ 100 OSSERWIZALE POROSTRY, MODERATE ADMARTON, LARGE CHERT HODALE LIVESTONE-WICKESTONE, VERY PALE ORANICS: 10/1R 4/2, 100 LIVESTONE-WICKESTONE, VERY PALE ORANICS: 10/1R 4/2, 100	LINESTONE-WACKESTONE	٥	NO-OBSERVAE	MODERA	1		VERY PALÉ ORANGE 1 form 6/2	
POF-32	18937	1837 6	INDUSTRICA PROCESSIONE VERTIFICE ORANGE, 1978 NO. 100 COSSENVERSE POROSITY, MODERATE REMPRATION LAMINATIONS. WHATE CHARTE, FORMANS-PERS ORGANIZATION CONTRACT COMMUNICATIONS OF THE STREET PROCESSIONE VERTIFICE ORANGE. 1978 NO. LOW	LIVESTONE-AUXCHESTONE	a	NO OBSERVAD	WODERA		FORMUNTERA	VERY PALE CRANCE : 10/R 5/2	ORGANICS
POF-32	1697 6	1933-0	EXTERGRAMMAR POROSITY, MODERATE INDURATION, LAWSIATIONS, YMPTE CLIARTZ, FORALMIFERA, ORGANICS LINESTONICH/ACKESTONE, YEAT PALE CRANICE; 101R 8/2, LOW	UNESTO/E-WACKESTONE	10	ditergravak.	MODERA	CANNAHONS. TEWHO STWW ST	FORAUNFERA	VERY PALE ORANGE 100R 82 VERY PALE ORANGE	ORGANICS
POF-32	1905 0	1902 3	ETTERGRANDELAR FOROSITY, MODERATE NEURATION ELAMINATIONS ORGANICS UNUSTONE-MACKESTONE, VERY FALE ORANGE; 1018 62, LON	UNESTONE-WACKESTONS			1	E LANSIA NONS		VERY PALE GRANGE	ORGANICS
POF-32 POF-32	1902 3	1934.2 1964.0	REPROJECTION FORGOSTT, INCORNAL REQUIRE LOST VINITE (LIVESTONE, WACCESTORE VERY PALE ORANGE: 1978 NZ. LOW REPROJECTION, FORGOSTT, FOOG BIDDINATION (LIVESTONE-WATCHSTONE VERY PALE ORANGE: 1978 LOW REPROJECTION EVERY PALE ORANGE: 1978 AC LOW (REPROJECTION FORGOST). ROCKORDITE INDURATION. LAPPATIONS.	LIVESTONE-WACKESTONE		DAYARDREIM ANYARDREIM	E .	IE N'HOLE DOTALLS		: 101R 8/2 VERY PALE ORANGE : 101R 8/2	
PQF-12	19650	1925 8	LIVESTONIE-WACKESTONE, VERY PALE ORANGE: 10TR MZ. LONV BITERGOLANDAR POROSITY, MODERATE INDURATION, LAMINATIONS, ORGANGS	finestove-fackestove				TE LAW/HATIONS		VERY PALE ORANGE : 101R 8/2 VERY PALE ORANGE	ORGUNCS
PCF-32	1995.8	1906 3	UMBANCO INVESTIGATE VERY PALE ORANGE. 1978 AZ LOW  INTERIORANIÇAR PORTOSTY, POOR BERMATION  UMESTICA ENVIRONMENT PORTOSTA ENVIRON  UMESTICA ENVIRONMENTAL VERY PALE ORANGE. 1978 AZ  KODENATE MYREVOLVANUM AND VINGSY PORTOSTY, POOR  ROUMATION VINTE CUARTE.	UVESTONE WACKESTONE		INTERGRANNE				: 10 FR 5/2 VERY PALE DRANGE	
POF-32	1906.3		CHIEFTON'S WICKSTONE VERY BUILD OR LAND. 1009 FO	UNESTONE-WACKESTONE	20	DIFERGRAMIL	A POOR	WHITE CHARTZ PRACTURED. SHITE CHARTZ		VERY PALE DRANGE	
POF-32 POF-32	1907 7 1903 7	1903 7 1910 0	INCORPATE INTERCRAPINARY AND VANGY PORTISTY, INCORPATE INCORPATION FRACTURED, WHITE QUARTZ, GLAUCONTE, LIVENITE INCORPATE AND RECOVERY INTERCEMENT	UMESTONE WACKESTONE	20	INTERGRANA	WOODERA	SHITE OVARIZ TE GLAVCOVITÉ		: 10YR 8/2	DVONTE
POF-32	1910-0	išit.i	CURSIONS MACKESTONE DARK TELLOWISH 890/M: 1918 V2. LOV INTERDALAULAN POROSITY, DODERATE REDURATION, BITRACLASTS LINOSITÉ LINESTONEWACKESTONE PALE TELLOWISH BROWN, 1918 6/2, LOW	LIVESTON-E-WACKESTON-E		•		PEPHRACIASTS		DARK YELLOWISH EROAN: 101R 4/Z PALE YELLOWISH	DACKILE
POF-32 POF-32	1915.U	19122 19133	INTERGRAMMAN POROSTY, MODERATE MOVERATION LUCESTOKE-WACKESTOKE GRAVEH ORAXOE: 16TH 7F. LGH WILLEGE ROWARD ROUGHTON LUCESTOKE-WACKESTOKE-VERY PALE ORAXOE: 10TH M2. LGY LGY PALE ORAXOE: 10TH M2. LGY	EMESTONE-WACKESTONE		INTERGRAPAN.	1			EROVN: 10/R 6/2 GRATISH ORANGE 10/R 7/4 VERY PALE ORANGE	
POF-32	1913.3	1315 (	ENTERGRANDIAN PORGETY, MOCENAIE INDURAIXM	UVESTONE WACKESTONE		KAKAMBABTAL				GRANISH GREEN:	
POF-32	19151	1916 1	CLAYEY LIVESTONE-WACKESTONE, CRANSH CREEM, 1009 50, LOW INTERGRANALAR POROSITY, POOR POURATION GLALIXONITE CAMPY LIVESTONE-WACKESTONE TELLOWSH GRAF (3); 97 61, LOW CITERGRANEAR; POOR REURATION, LAWINIFONS, CREEMENT, CAN	UVESTONE-WAGZESTONÉ	10	PITERCEANILE.	1	CHAUCONITE LAVINATIONS		100Y 5/2 YELLOHYISH GRAY (2	CLAY
POF-32	19161		LUXESTONE-UDSTONE VEHICLES GRAY (2), 67 69; LOW DIESTONE-UDSTONE VEHICLES GRAY (2), 67 69; LOW SWITERGRAMMAR: WODERATE WIDWARDON LUXESTONE-UDSTONE LIGHT OUTE GRAY (2), 57 69; LOW	UVESTONE-WACKESTONE	10	DITERGRANIA PITERGRANIA		ORGANICS		SA BA ABT QY/CH GAVA (5	CLAY
FDF-32	19130	1320 0	DITERGRANULAR; MODERATE MOURATION LAWFIATIONS  OF ANEWS WESTONS AND CONSTRUCT OF MEMORY BUT OR MANOR - 1867 R.D.	CINESLOYS: AND STONE		3		TE LAUSTATIONS		USDIT DLIVE GRAY 12: \$7 6/1 VERY PALE ORANGE	ORGANICS
FOF-32	1920 (	1921 0	CLAYET EMESTICA: «NACOESTONE, VERY PALE ORANGE: TOUR DZ. ACOERATE INTERIORANALAR; MODERATE INDURATION: FRACTURED. CLAYET UMESTONE-WANDESTONE: PALE YELLOWISH BROWN: TOTR 62. LOWER REPROPANALAR; MODERATE INDURATION: LAWRATIONS	i .				TE FRACTURED  LAVINATIONS.		FALE VELLOWSH EROWN: 1018 62	
POF-32	192† 6	1922.8	ORGANICS  CLASEVI INFECOME AND PETROLET COME DESIGNATION SYNCE	DAEZIONE/MYCKESTONE	10	INTERGRAPAH		TE DRONNES		LIGHT OLNE GRAY	CLAY
POF-32	1922.8		MODERATE INTERGRANALAR AND VIGOY: MODERATE INDURATION CLAYEY LIMESTONE-WISCOESTONE PALE YELLOWSH GROWN: 10YR 62 MODERATE WITERGRANALAR AND VIGGY; MODERATE INDURATION	LIVESTONE-WACKESTONE	20	PITERGRAVAN				PALE YELLOWASH BROWN: 10/18-02	CLAY
	144			LAND TO THE WARREST ONE	-70	A PROPERTY OF	1-0000		1	(	i
POF-32	1923 4 1924 5		CLAYEY LIVESTONE-WACKESTONE, UGHT OUNE GRAY (2): 57 MI, WODERATE RITERGRAYJULAR AND WIGGY: MODERATE RIGURATION	UVESTONE-WACKESTONE	24	PATERGRANAA	A INODERA	JE.		LIGHT DLIVE GRAY	

[	1		CLAYEY LIVESTONE WACKESTONE VERY PALE ORANGE: TOTR 82	UVESTONEWACKESTONE		MICHGRANULA	l			VERY PALE DRANGE		1	i
POF-37	19757	1927 7	LOW PRERGRANULAR: MODERATE MOURATION CLAYEY INVESTIGATE MUDISTONE VERY FALE ORANGE: 1078 NZ. LOW CREEGRANULAR: MODERATE GOURATION	UNESTONE WACKESTONE	10 15					VERY PALE DRANGE 100TL & 22			
F66-32	1923 6		CLAYEY INVESTIGATE MUDSTONE, LIGHT DUNE GRAY [2]: 5Y 61.	LIVESTONE-VUDSTONE	29	*#ERGRANULA	MODERATE			USKT OLIVE GRAY		1	
POF-32	19376	1931 4	CLATER LOCKING MUSICIAL LIGHT CONFERENCE (S. 5) OF MANIEL MODERATE MUSICIAL LIGHT CONFERENCE DUBATION UNISTONE WAS PROBABILED OF MANIEL CONTROL OF MANIEL MOST PARTIE LIVESTONE WAS ESTABLED ON THE PRESENCE OF MANIEL MOST PARTIE LIVESTONE WAS ESTABLED ON THE PER LOCK OF MANIEL MOST PARTIE LIVESTONE WAS ESTABLED ON THE PER LOCK OF MANIEL MOST PARTIE LIVESTONE WAS CONTROL FALL FILLD ON THE PER LOCK OF MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MOST PARTIE MANIEL MANIEL MOST PARTIE MANIEL MANI	UVESTONE-WACKESTONE		CHERCRAILLA	1 1	UWWITE		C21: 5Y E/1 VERY PALE ORANGE . 1GIR &Z	PIRITE		
POF-32	1931 4	13320	LIUESTONE-WACKESTONE PALE YELLOMEN BROWN: 10 REV LOV BRIENGRANULRI: MODERANE LIURARION LIUESTONE-BUDDSTONE, GRAY: 15 HOSH PIERGRANIKAR AND MOGY: MODERATE HIDURATION ORGANICS	UVESTONE-WACKESTONE	10	#ITERGRÁNUL#				BACKAN TONERS			
FOF-3Z	1232-0			LIVESTONE-PUBLISHENS	39	OUTERORANULA	RODEWIE			GRAY: N5	GROWIES	-	
FOF-32	1932.5	1933.3	UNESTONE WACKESTONE, VERY PALE ORANGE: 16/R 8/2. WOOSPATE ETTERGRANMAR AND VUGGY: MODERATE INDURATION UNESTONE-WACKESTONE VERY PALE ORANGE: 16/R 8/2, LOW	UVESTONE-VIACKESTONE	20	BATER GRANULA	PODERATE			VERY PALE ORANGE : 101R &/2			
FOF-12	1933 3	,	UTERGRANDAY: NODERATE COURATION LAWNATIONS.	LIVESTONE-WACKESTONE	tō	SATERGRANULA	PODERATE	LAMMATIONS		VERY PALE ORANGE 101 R 82 GRANISH ORANGE :	ORGUNES	1	
PGF-32	1934 2	1938 1	LIVESTONE-WACKESTONE GRAYIEH ORANGE: 101R 74, LON OTTERGRAINMAN: MODERATE MOURATION FORAVINFERA	LIVESTONE-WACKESTONE	10	PERENCHANULA	VOCERATE		FORAUM/FERA	10/18 74			
FOF-32	1926 (	19350	LIVESTONE-WACKESTONE, LIGHT GRAY .HT. LIGH DITERGRAVAULAR ; NOOERATE DIBURATION DITERCLASTS, ORGANICS UVESTONE-WACKESTONE, YELLOW/SYGRAY (2): 57 BT, LIGH	LIVESTONE-WACKESTONE	10	AJUKARORETKA	HODERATE	PITERCLASTS		LIGHT GRAY N7	ORGANICS		
FOF-32	197,3 0	1928 1	INTERGRAMMAR; MODERATE PROGRATION LAWINATIONS.	LIVESTONE-WACKESTONE	10	INTERGRANULA	₩GOERATE	LAV.NATION3		YELLOWSH GRAY (Z)	CROWNES		
FOF-32	1938 (	130 <b>1</b> B	LWESTONE-YACKESTONE, PALE YELLOWISHEROWN: TOTAGE LOW INTERGRAVABLER; MODERATE REURATION INTERCLASTS	LIMESTONE-WACKESTONE	10	DATERGRANULA	<b>VCDERATE</b>	PITERCLASTS		PALE VELLOWSH EROVAL IDIR 62			
POF-32	1918.6	1332	UPESTONE-VACVESTONE, LIGHT GRAY .177, LOW BREEGRAANLAS . 9COERATE PADURATION BREEKCLASTS, OROANGS	LINESTONE-WACKESTONE	10	DITERGRANULA	MODERATE	PRERCLASTS		UGHT GRAY . N7	otanics		
POF-32	1959 1	15400	WODERATE POURATION EMERCIASTS GROWINGS LIVESTONE-WACKESTONE YELLOWING GRAY (2): 6Y MI, LOW INTERGRANDIAR: POOR EDURATION	LIVESTONE-WACKESTONE	10	PHEROSTAVIULA	POOR			ABITON/29H GAVA (S)			
POF-32	19490	1940.9	uvestokæniacyestoke ucht ocné gray (1) : 51 én. 104/ entergrantar : moderate pouration langiations fellets livéstoke-nackestoke yellowish gray (2) : 51 én. moderate	UWESTONE-WACKESTONE	10	PITERGRANULA	NCCERATE	LAV:MATIONS FELLETS		LIGHT OLIVE GRAY			
POF-32	1240.9	12420	LIVESTONE-VIACHESTONE YELLOWSHIGRAY (2): 57 6/1. MODERATE CYTERGRANIALAR . FOOR INDURATION: FRACTURED LIVESTONE-MUDSTONE (MITTE: NO. MODERATE EXTERGRANIALAR)	UWESTONE-WACKESTONE	20	BITERGRANULA	FOOR	FRACTURED		YELLOY/SHIGRAY (2) : 5/ IV/			
POF-32	1342.0	1943 0	DIVESTORE-DIDSTONE WHITE: NO LOWIFIERGRANULAR: POOR	EVESTONE-VUDSTONE		DITERGRANALA				WHITE . NO			
F0F-32	1943.0	1545.2	SCURATION LIVESTONE-MACRESTONE, LICENT OLIVE GRAY (2): 57-641, MODERATE	SADTEGUA SINCERAN	10	PITTERGRANULA	POOR	Laurnationis. Felless.		YARTE: NO LIGHT OLIVE GRAY			
POF-32	1945.2		WITERGRAIN AR : WOOERATE HEXTRATION LAWHATIONS FRUCTS. FRADURED LIVESTONE HUDSTONE, VERY PALE ORANGE: 10YR 8/2, LOW	UNESTONE-WACYESTONE		INTERORANIA	l i	FRACTURED		izi:5ye/i Verypale orange			
POF-32	13461	1950 0	DEPAGRAMAUR : POOR EXCRATION LINESTONE-WACKESTONE VERT PALE ORANGE : 1018 8/2 LOW RITERGRANULAR : POOR INDURATION	LIVESTONE-MACKESTONE		ARKKARDREITS ARKKAROKEITS		UNONITE SOUR FRACTURES		; 10VR B/2 VERY PALE CRANGE ; 10YR B/3	Fritte		
FOF-32	19500	1953 8	BITHERGRANULAR (PODE RECORDING) LIVESTONE-PURSTONE, VERY PALE ORANGE: 1678 22 LOW INTERGRANULAR (POOR INDURATION LINOVATE, SOVE FRACTURES,			ŀ		FIOCHURES		VERY PALE ORANGE	FINAL		1
POF-32	1953.8	1957 6	Firite Luestone-Budstone, Light Olive Gray (2): 67 6/1. Low Butergrannlar : Noderate Induration Luestone-Vackestone, Very Pale Grayge : 1978 8/2 Low	UNESTONE-MUDSTONE	10	ALVANDRETTAL ALVANDRETTAL	POOR VODERATE	FRACTURED		: 10YA 6/2 LIGHT CLEVE GRAY 121: 6Y 6/1			
POF-32	1957 6	1963 9 1960 0	EMERICAN I RECEPTOR ENDINATION  LIVESTONE-WECKESTONE VERY PALE ORANGE: 101R &2 LOW  INTERGRANALAR : POOR LIDURATION I FRACTURED	LIVESTONE-VACKESTONE		PHERORANIA	POOR	FRACTURED		VERY PALE ORALIGE 101R 6/2	LINGSTE		- 1
F0F-32	1990 0	1960 8	LAUSSTON E-WACKESTON E VERT PALE GRANGE: 1019 6/2 LOW BIT GRAND ARE FROM REWARING FRACTURED LANGUITE	LIMESTONE-WACKESTONE	10	PATER GRANNA	POOR	PITRACILASTS		VERY PALE ORANGE : 150R 8/2 VERY PALE ORANGE	UNONTE		
PGF-32	1950 8	1952.0	EMPSING-FINE ACTION & BORNING TRACTURED LOUT  INTERGRANALIST, FOOR EMPSING TRACTURED  LUESTING-BORNING-FOOR EMPSING THE  UNESTING-BORNING-FOOR EMPSING THE  UNESTING-BORNING-FOOR EMPSING THE  UNITED LIMITED LIMITED LIMITED LIMITED  LOWSTE  CLAYER LIMITED SEAT ACTION TO THE  UNITED LIMITED LIMITED LIMITED LIMITED LIMITED  LOWSTEP  LIMITED LIM	LIVESTONE-VACAGESTONE	10	INTERGRANULA	POOR	PITRACIASTS		181R 8/2	CLAY		
F0F-32	1952.0	1952.5	CONTRUCTOR STORE CONTROL CONTR	LIVESTONE-VUDATIONE	10	LISTERGRANULA	MODERATE	LAVINATIONS. PITRACLASTS	GLAUCO!TE	LIGHT OLIVE GRAY (2): 6Y 6/1	CLAY		
PGF-32	1962.5	1953 3	PLOCERATE INTEGRANDAR AND VISIS : MODERATE INDURATION PITRICLASTS GLANCONTE	LIVESTONE-VUDSTONE	100	**ITERGRANULA	MODERATE	INTRACIASTS	GLAUCONTE	LIGHT OLL/E GRAY (2). 57 6/1	CLAY		
	1963 3:		CLAYEY LIVESTONE-ULBISTONE LIGHT CLIVE GRAY (1), 6Y 01, LOW STEERGRAYNEAR: LINDDERATE INDURATION FRACTURED	LIVESTONE-VUDSTONE	l	energaaa.			GLAUCOLITE	UGHT DUVE GRAV	CLAY	. 1	
POF-32			GLAUCONTE LIVESTONE VIACKESTONE PALE VELLOWER EROVINI, 101R 62, VIDDERATE KITERGRANNLAR AND VUGGE; LYCOGRATE INDURATION						GL-OCOIVIE.	PALE YELLOWISH			
PGF-32	1964.0	1955 7	FRACTURED CLAY	UVESTONE-WACKESTONE	20	ļ	l			IRONN: 16YR 6/2 VERY PALE ORANGE : 101R 8/2			
POF-32	1965 7	1968.2	MTERGRANDAR: MODERATE PRIURATION UNESTONE-TIACKESTONE, LYANT OLIVE GRAY (2) 57 U.S. LON SITERGRANDAR: MODERATE INDURATION	EMESTONE-MACKESTONE	l	INTERGRANULA		LAV MATIONS. INTRACLASTS		LIGHT OLIVE GRAY (2) SY 6/1	GLAUCONTE		
PQF-32	1968.2		LIVESTONE-WACKESTONE VORY PALE GRAFIGE ; 16/17 4/2 MOGERATE STIERGRAFIULAS ; MOGERATE INDURATION LAW/MATIONS INTRACLASTS GLAIXCONTE	EWESTONE-WACKESTONE	20	UTERGRAPALA	HOOFBATE			VERYPALE ORANGE			
	- 1							l		PALE YELLOWISH	L	.	
POF-32	1970 a	19712	CLAYEY UNESTONES/VACKESTONE PALE YELLOMISH EROMIT: 1978 69: LOW OTERGRAMANAR, MODERATE (ADVIRATION LIMORITE CLAYEY UNESTONES MACESTONE PALE TRELOMISH BROWN: 16/18 62: MODERATE RITERGRAMMAR; MODERATE (RIDURATION)	UVESTONE-WACKESTONE	"	DUESCUATION	INCOERUNTE	GLAUCONTE		BROWN: 10YR 6/2 PALE YELLOWSH	CLAY 1		
POF-32	1971.2		GLAUCONAVII, LIVORATE	ENESTONE-WACKESTONS	20	MIERGRAMULA	NOOERATE	FINOSTÉ	ĺ	BROWN: 10/R 6/2 PALE YELLOWSH	CLAY		
POF-12	1972.4	1973 0	CLAYEY LIVESTONE-WACKESTONE, PALEYGLLOWGUEROWN, IDIR 6/2 LOWE/TERGRANULAR; WODERATE ROUTATION, GLAUCOVITE CLAYEY LIVESTONE-VUDSTONE, UGHT OUVE GRAY (2): 5Y 64; LOW	UVESTONE-WACKESTONE	10	HULEBOUNDE	MODERATE	CRAUCOMTÉ		BROWN: 10YR 6/2 LIGHT DUYEGRAY	CLAY		
POF-22	1973.0	1974 1	INTERGRANGER: POOR POORATION CLAYEY LIVESTONE-WACKESTONE VERY PALE ORANGE: 15YR 8/2.	LIVESTONE-VUDSTONE	10	INTERGRANULA INTERGRANULA		GLAUCOPATE		121: 5Y 6/1 VERY PALE ORANGE : 101'R 8/2	CLAY		
FOF-32	1974 1		CONVENTERCRAVIOUR : POOR NOURATION GLAUCOVITÉ CLAYEY LIVESTONE-WACKESTONE, VERY PALE ORANGE : 1878 8/2.	LINESTONE-WACKESTONE	"					VERY PALE ORANGE			
POF-32	19756	19760	LOW SITERGRANULAR: INCOERATE HIDURATION, GUALCOMTE CLAYEY LIVESTONIC-VUDSTONE VERY PALE ORANGE: 10YR 8/2: LOW PRETEGRANULAR: GOOD INDURATION CLAYEY LIVESTONE LIVESTONE VERY PALE ORANGE: 10YR 8/2; LOW	UNESTONE-VACABITONE UNESTONE-VADSTONE	10	ALKANASARITA ALKANARARITA	:	GLAUCOPATE		: 10YR 6/2 VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32 FOF-32	13760	19769	INTERMANULAR: GOOD STANDARDS CLAYEY BURSTONE WIDSTONE VERY PALE ORDINGS: 10YA M2, LOVI INTERMANULAR: MODERATE GRUNATION	UVESTONE-VUDSTONE	10	WITERGRANULA	ı			VERY PALE ORANGE : 100'R 8/2	CLAY		
			INTERGRACIAER: MODERATE GEMEATION  CLAYEY UNESTONE WASCESTONE VERY PALE DRANGE: 101R BZ. LON, INTERGRANALIAR AND VIXOY; MODERATE RIBURATION.	UVESTONE-VIACKESTONE	١.,	INTERGRANALA	MODERATE	CHINCON/TE		VERY PALE ORANGE	CLAY		
F0F-32	19782	1979 0	GLAUCOWITE  CLAYEY LIVESTONE SUACKESTONE PALEYELLOWSH GROVEN: 1079							PALE YELLOWISH			
PGF-32	1979 0	1950 8	62 LOWNSTERGRANDEAR: MODERATE PUDURATION GLAUCOMITE CLAYEY LIMESTONE PACKSTONE PALE YELLOWISH EROWN, TURK	FINESTONE-AVACATES FOR TE	to to	REFERENCE	MODERATE	GLADCONITE		PALE YELLOWISH	CLAY		
POF-32	1930 8	1533 \$	BZ MODERATE INTERGRANARAR: FOOR RIDURATION, UMONATE CLAYEY LIVESTONE-YEACKESTONE, PALE YELLOWISH BROWN: 16TR	LIVESTONE-PACKSTONE		PHERGRANULA	ı	LIMONATE		BROWN: 10/R 6/2	CLAY	1	
POF-32	1983.5	1955 2 1956 I	57_MODERATE OFFERCASIONAE; POOR WEURATION UMESTONE MACKESTONE PALEYELLOWISHEROWN: 10/R 6/2, LOW INTERCALISM AS - MODERATE DATE MATERIAL	LIVESTONE-WACKESTONE	20	WIERGRANUL	POOR MODERATE			EROVAN: 10/R 6/2 PALE YELLOWSH EROVAN: 10/R 6/2	CLAY		
POF-32	1956 1	1567 B	62 MODERATE OF SEACH AND ME. POOR MODERATION .  MUNICING MANUSCRIPTOR PLATE LOWER PROVING . TOTAL OW .  METERS MANUSCRIPTOR PLATE AND MANUSCRIPTOR .  MODERATE METERS MANUSCRIPTOR . GRANGES . GOAT M. M. M. M. M. M. M. M. M. M. M. M. M.	LIVESTONE-PACKSTONE		ритеродами	1		ĺ	GRANLIN CRANGE: 10VR 7/4	CLAY		
POF-32	1947 6	1553.2	UNESTONE WARKESTONE GRANGH CHARGE: 1018 74, 1934 ONTERGRANALAR AND VUIGGY: MODERATE INDURATION OF ALLOHOTE	LIVESTONE-WACKESTONE		PITERGRANULI	MODERATE			GRANISM ORANGE: 10VR 744	GLAUGGETTE		
107-32	1983 2	1293 (	CLASEY LIVESTONE PACKSTONE GRANGHORANGE 101R 74. WODDINGTE PRIEMORANDIAN : POOR BIDURADON UNESTONE YIACKESTONE GRANGHORANGE: NOR 74. LOVY	LIVESTONE PACKSTONE	20	PHTEROSTANULA	POOR			GRAYISH ORANGE: 10YR 7H GRAYISH ORANGE:	CLAY		
FOF-32	19900	1390.0	LIVESTONE WICKESTONE, GRAVISH ORANGE: 1074 TN, LOVY WITERGRAVALIAR: WODERATE PIEURATION; LIVOVITE CLAYET LIVESTONE-WACKESTONE, GRAVISH ORANGE, 1618 TH, WODERATE INTERGRAVAIJAR AND VAIGOY, WODERATE INDURATION	UVESTONE-WACKESTONE	10	INTERGRANMA	NOCERATE	i		101R 7/4	UVONITE		
FOF-32	17209			EWESTONE-WACKESTONE	20	PITERGRAMA.	WXERATE	UMONATE		GRAYISH ORANGE: IOTH 7#	CLAY		
POF-32	1291 3		CIVESTONE-MUDSTONE GRAY: NO. LOWINTERGRANDLAR: MODERATE PIDURATION LIMONTE LIMESTONE-WACKESTONE VERY PALE ORDINGS: 1078 UZ LOW	PRESTOVE-AND3LONE		PHERGRANA				GRAY NA VERY PALE DRANGE	LINGRATE		
POF-02	1991 7	1992 4	LIVESTONE-PUBLISHED PALEYBLOWSH BROWN . 10/R 6/2 LOW	UMESTONE-WACKESTONE	10	PHERORANAL MARKET NAME OF THE PROPERTY OF THE				PALE YELLOWISH BROWN: 1078 62	UNONTE		
POF-32	1292.4	1992.9	SYTERGRANULAR; MODERATE BIDURATION: LIMONITE  CLAYEY LIMESTONE-WACKESTONE, GRAVIAN GRANGE: 10YR 714,					ĺ	1	GRAVISH CRANCE:	1		
PDF-32	1992.9 1994 l	1994 f	NODERATE INTERGRANDIAR, MODERATE INDURATION, UNDON'TE LIVESTONE WAS SETTINE GRANSH DRINGE, 1978 74, LOW	UVESTONE-WACKESTONE	1	INTERGRANUL		ı		101R 7A GRAYISH CRANGE: 1018 7A	CLAY		
			DLAYEY UMESTONE PACKSTONE GRAYISH DRAYGE: 161R TA. MODERATE INTERGRAYALAR AND VUGGY: POOR INJURATION.							GRAYISH ORANGE:			
POF-32	1934 6	1996.3	EVICKITE  CLAYEY LIVESTONE PACKSTONE GRANSH GRANGE: 18 FB \$14. HIGH	LIVESTONE PACKSTONE	2	INTERGRANAL	POOR	LIVOSITE		GRAYISH ORANGE:	CLAY		
FOF-32	1996.2	1996.9	INTERGRAVAILAR AND VUGGY: POOR INDURATION LINOWITE	LIVESTONE PACKSTONE	×	INTERGRANULA	POOR	LIDACKITE		GRAYISH ORANGE:	CLAY		
POF-32	1206 9	1997.5	QUAYEY LIVESTONE-PACKSTONE GRAYISH DRAYGE: 1078 74. HIGH KITERGRAYALAR MID VUGGY: PODERATE PROURATION LIVENITE GLAYEY LIVESTONE-PACKSTONE, GRAYISH GRAYISE: 1078 74.	LIVESTONE PACKSTONE	ı	CHERGRANUL	1		1	GRANISH CRANGE:	CLAY		
POF-32	1997 5	1958 4	CLAYEY LIVESTONE PACKSTONE, GRAYIEN ORANGE: 15YR 7/4. UCCEPATE EXTERGIANALAR; BODOERATE SEURRATION CLAYEY LIVESTONE PACKSTONE, GRAYIEN GRAYICE: 10YR 7/4. LOW INTERGRANALAR; LIVODERATE SEURRATION	LIVESTONE-PACKSTONE	20	PITERGRANUL	1		1	19YR 7/4 GRAYISH ORANGE: 19YR 7/4	CLAY		
POF-32	1008.4	4,00,0	THE STATE OF THE PROPERTY OF T		"			)				i l	

# APPENDIX D: POF-31 AND POF-32 GEOPHYSICAL LOGS



8600 Oldbridge Lane Orlando, FL 32819 mobile ph 407-733-8958

www.rmbaker.com rob@rmbaker.com

COMP

SFWMD

**HESPERIDES ROAD** 

LOC

HEADER NOTES: Geologia Geology PROF

CASING SIZE 16	TROLLI PUMPIN API	TYPE FI		Š	C		
CASING RECORD SIZE MAT. FROM 16 STEEL 0	PUMPING RATE (GPM)  API	TYPE FLUID IN HOLE			WELL POF-31  UWI POF-31  PROFESSIONAL LICENSES Geologist PG2786 Geology Business GB458		
N/A TO 84	N/A N/A	SONIC  WATER	ALL SERVICES: CALIPER NATURAL GAMMA ELECTRIC		1 1 LICENSES		
		LOG COD	ES				
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC		
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC		
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT		
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI		
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R		
GAMM	Depth	<b>-</b>		CAL			

NO. RUN

BIT

FROM

TO 285

70

BOREHOLE RECORD

WITNESSED BY

SFWMD

RMBAKER LLC

SRVCRECORDED BY DRILLER DEPTH-LOGGER

RMB

**HUSS DRILLING** 

285.4

285

**DEPTH-DRILLER** 

DATE

DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

RUN No

TYPE LOG

**CALIPER** 

24 Mar 20

RGE SEC GDAT LONG

PERMANENT DATUM:

STAT CNTY FLD

POLK SR 60

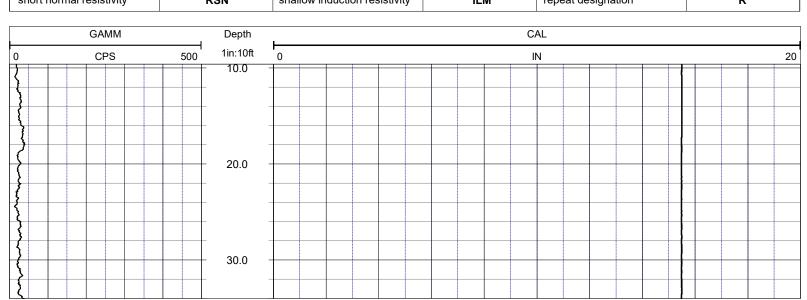
LATI CTRY PROV

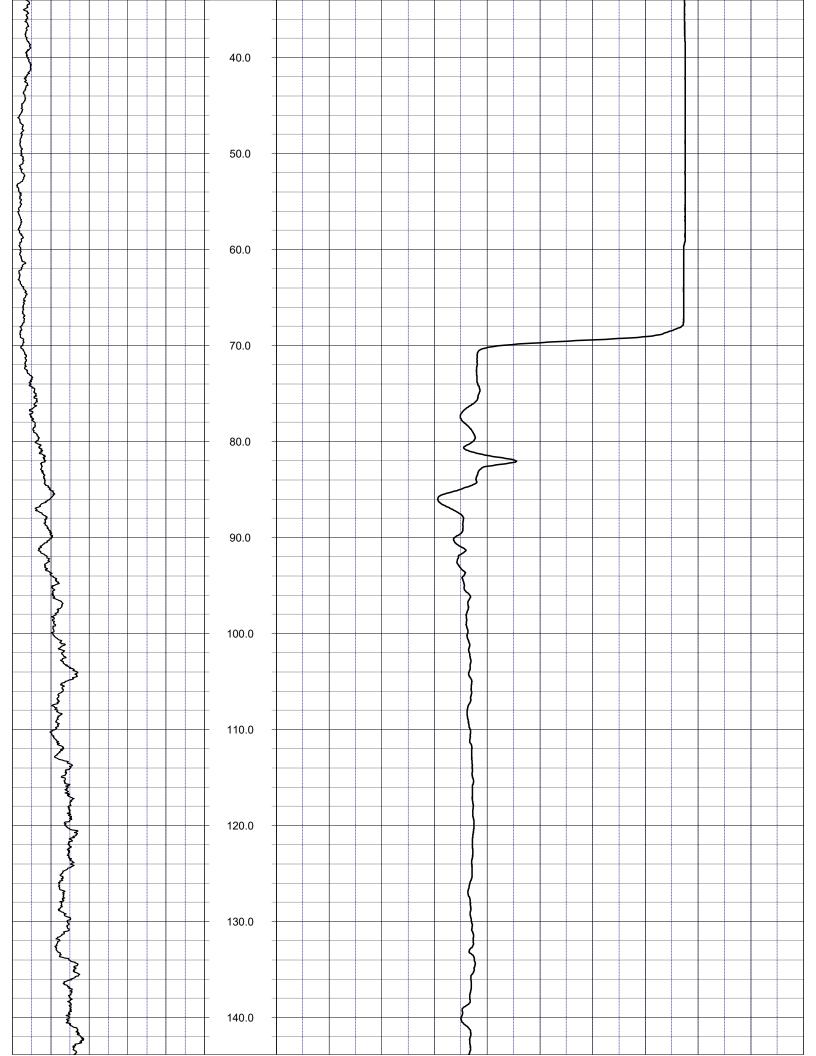
USA

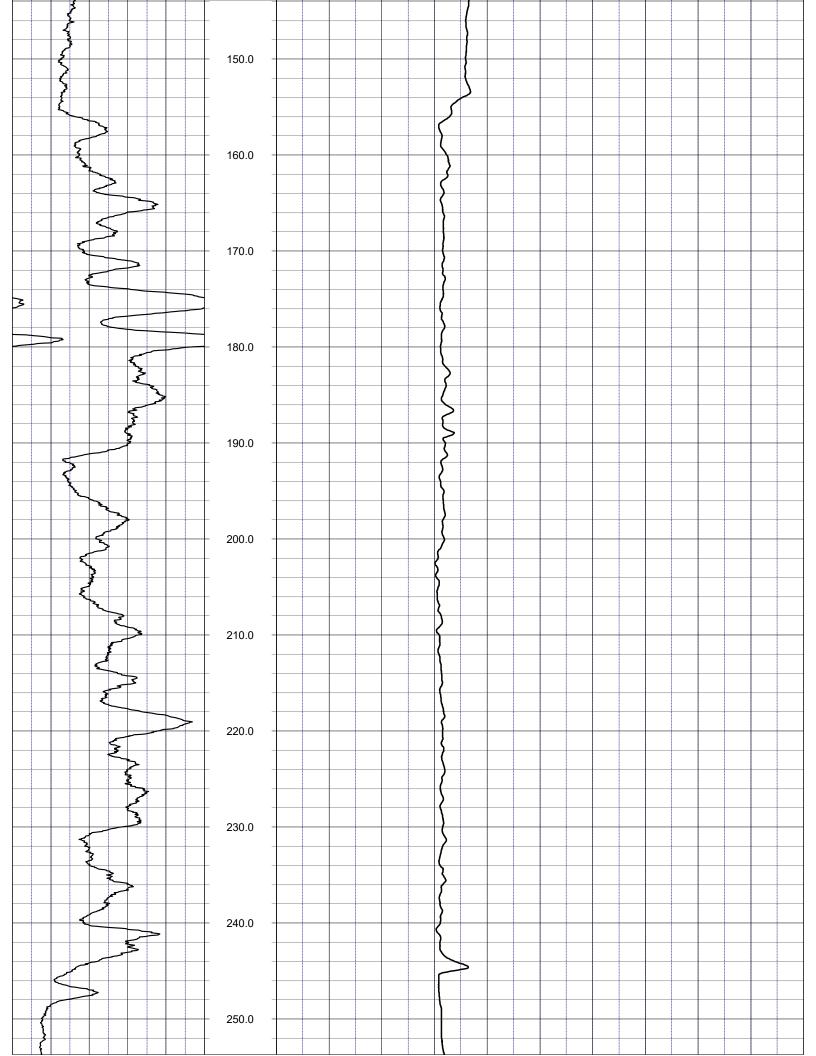
 $\prec$ 

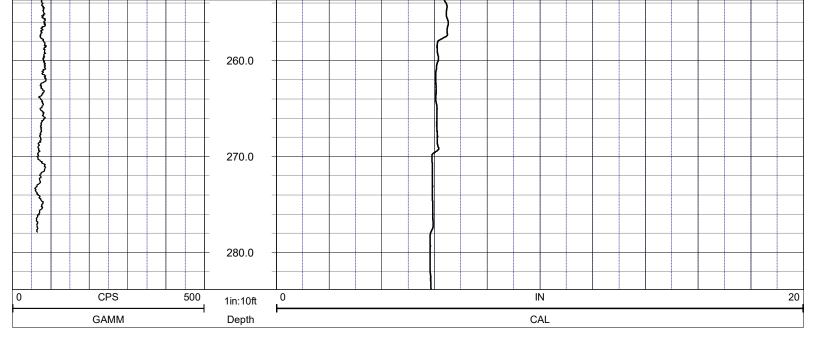
VDATELEV H DAT

WGS84









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#### **END OF LOG**



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HEADER NOTES:

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COMP

SFWMD

**HESPERIDES ROAD** 

400

400

400

Geologis PROF Geology

OHMM

OHMM

RLN

OHMM

		STEEL	MAT.	CORD					CATE (GPM)	DIRECTION	SPEED (FT/MIN)	D IN HOLE							cologist PG2186 cology Business	¥1	T
		0 84	FROM TO		N/A	N/A			N/A			WATER	SONIC	ALL SERVICES: CALIPER NATURAL GAMMA ELECTRIC					Ologist PG2186 ology Business GB458	TOT-31	POF-31
													LOG COD	FS.							
											Τ.			I							
3-arm caliper CAL					+		normal resistivity	RLN			deep induction co	IDC									
natural gamma (CPS) GAMM						8	inc	ch resistivity	R8			shallow induction	ISC								
spontaneous potential ESP						3	2 in	nch resistivity		R32		sonic interval velo	DT								
single point resistance RES						d	eep	induction resistivity		ILD		sonic porosity (RF	SPHI								
short normal resistivity RSN					shallow induction resistivity				ILM		repeat designation		R								
		E	SP					Dept	h .				ILD					R8			
0 mV				1000 1in:10ft 0					OHMM	200 0				400							

OHMM

200 0

0

SEC GDAT LONG

V DAT ELEV H DAT

WGS84

LATI CTRY

USA

 $\prec$ 

STAT CNTY FLD LOC

SR 60 POLK

**PROV** 

RGE

PERMANENT DATUM:

RUN

BOREHOLE RECORD

WITNESSED BY

SRVC RECORDED BY DRILLER

RMB

RMBAKER LLC

LIC API **HUSS DRILLING** 

150

500

500

70.0

OHM

**DGAMM** 

CPS

**EGAMM** 

CPS

0

DEPTH-LOGGER **DEPTH-DRILLER** 

285.4 285

N0.

BIT

FROM

TO 285

SIZE

CASING RECOR

16

0

0

70

DATE

24 Mar 20

DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

RUN No

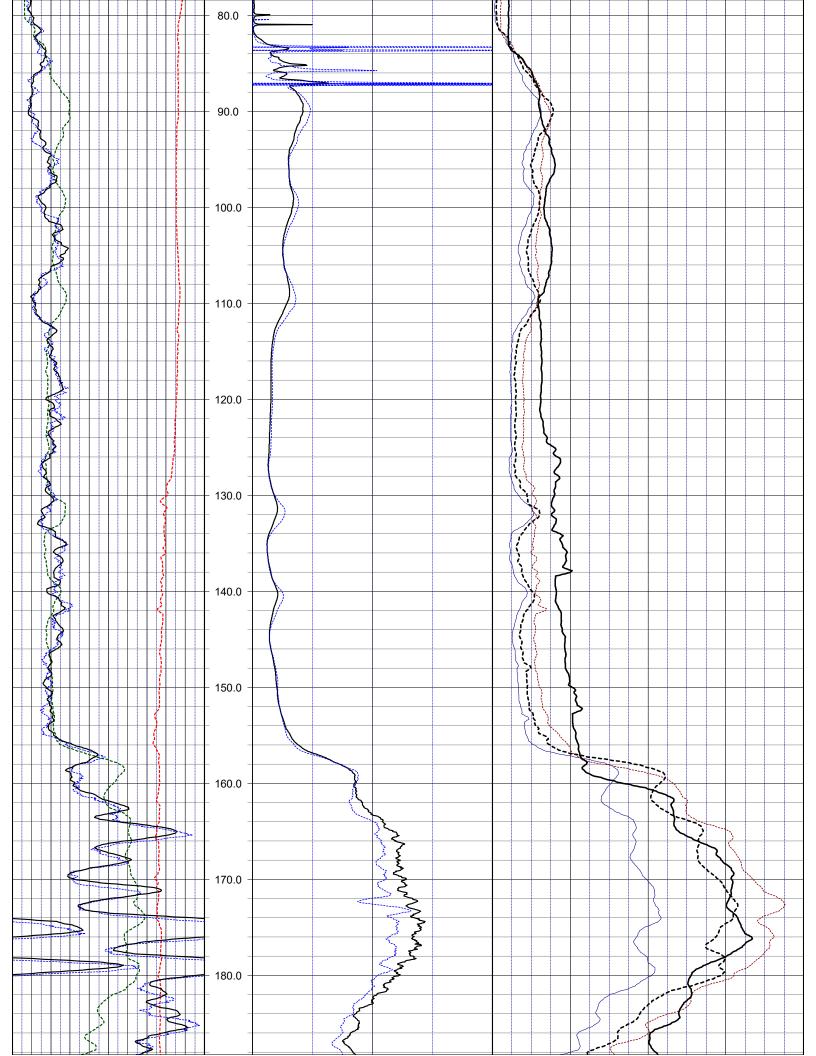
TYPE LOG

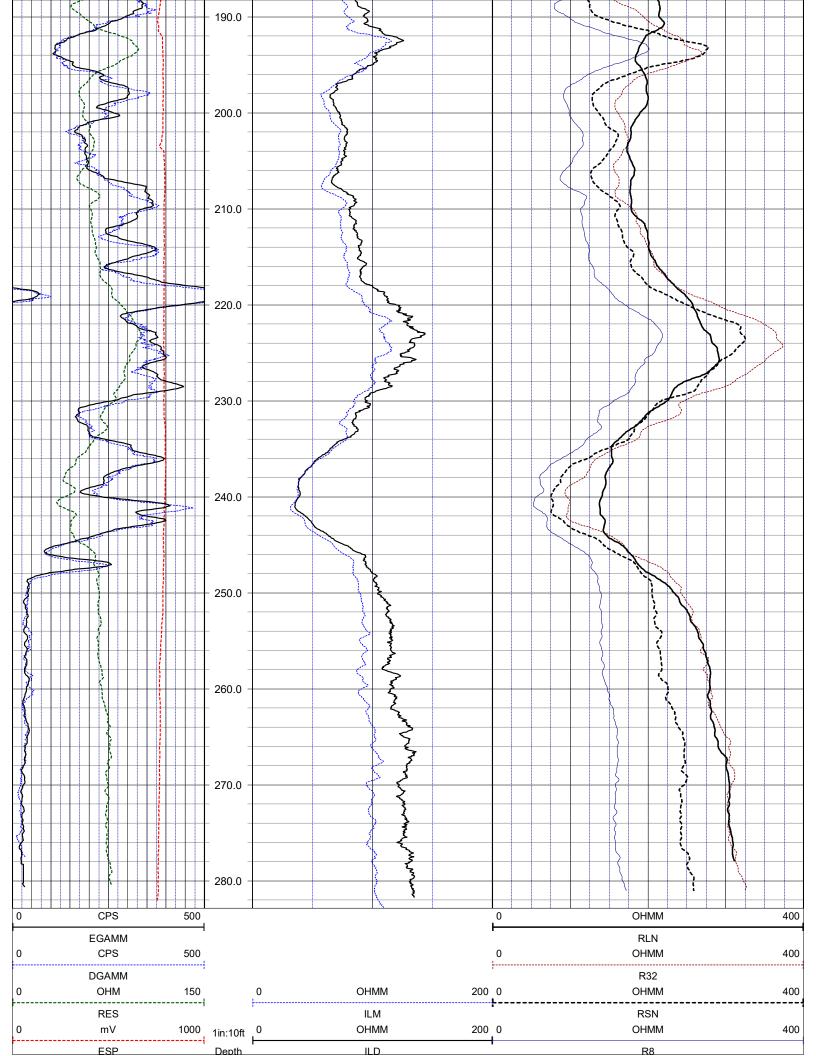
ELECTRIC+DUIN

PUMPING RATE

LOGGING SPEEI TYPE FLUID IN 1

TROLLING DIRE





257 ... ...

#### NOTES:

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surveyed.

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mobile ph 407-733-8958 Orlando, FL 32819 8600 Oldbridge Lane

www.rmbaker.com rob@rmbaker.com

THE POROSITY CALCULATION IS ONLY VALID FOR CARBONATE STRATA. HEADER NOTES:

**POF-31** 

Geologist PG2186 PROFESSIONAL LICENSES

Geology Business GB458

		LOG CODES	3		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

SEC GDAT LONG

WGS84

HDAT 4  $|\times|$ 

CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION

ALL SERVICES:

SONIC

VDATELEV LATI CTRY **PROV** 

USA

STAT CNTY FLD

POLK **SR 60**  COMP

**SFWMD** 

**HESPERIDES ROAD** 

LOC

TWP

RGE

RUN No DATE

TYPE LOG

SONIC

DEPTH-DRILLER

DRILLING MEASURED FROM:

24 Mar

20

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

#### SONIC POROSITY:

RUN

BOREHOLE RECORD

WITNESSED BY

SFWMD

LIC API

N/A

Z X

RMBAKER LLC

SRVC RECORDED BY DRILLER DEPTH-LOGGER

RMB

**HUSS DRILLING** 

285.4

285

PUMPING RATE (GPM)

N/A

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

12  $\subseteq$ 

WATER

TYPE FLUID IN HOLE

N0.

BIT

FROM

TO 285

SIZE 16

MAT. STEEL

FROM

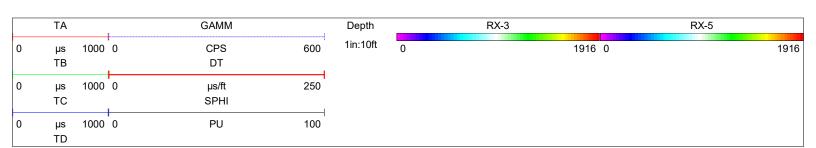
84 To CASING RECORD

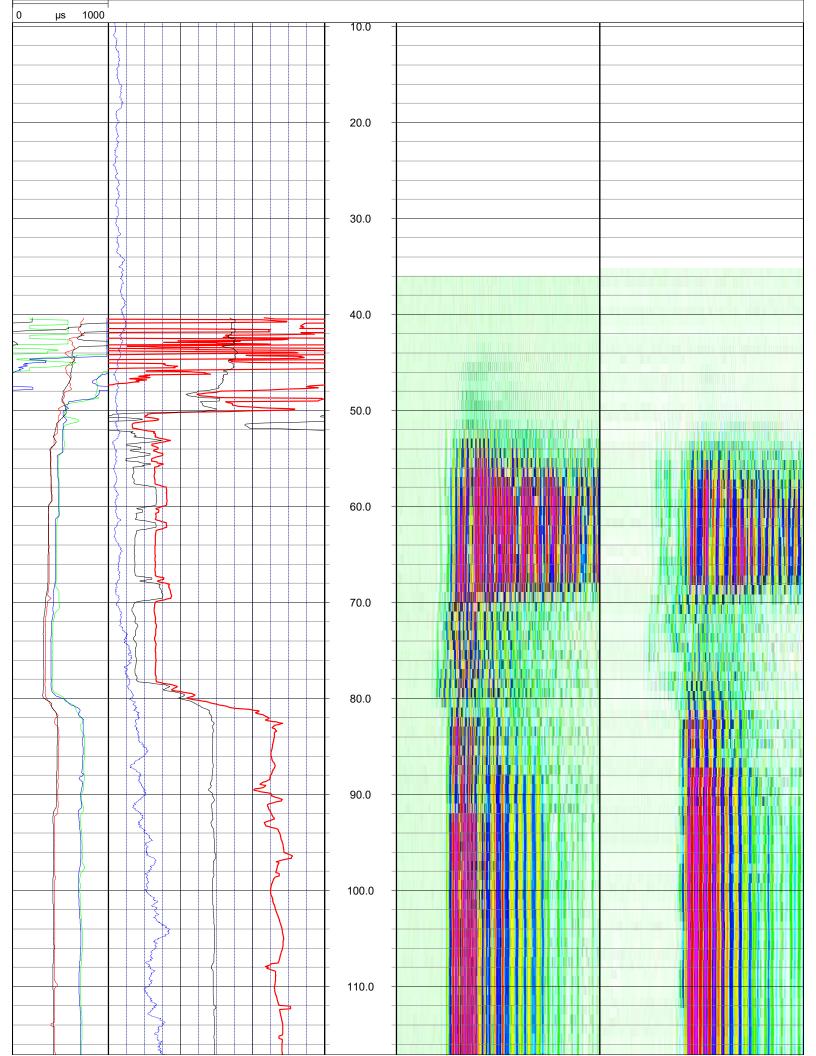
70

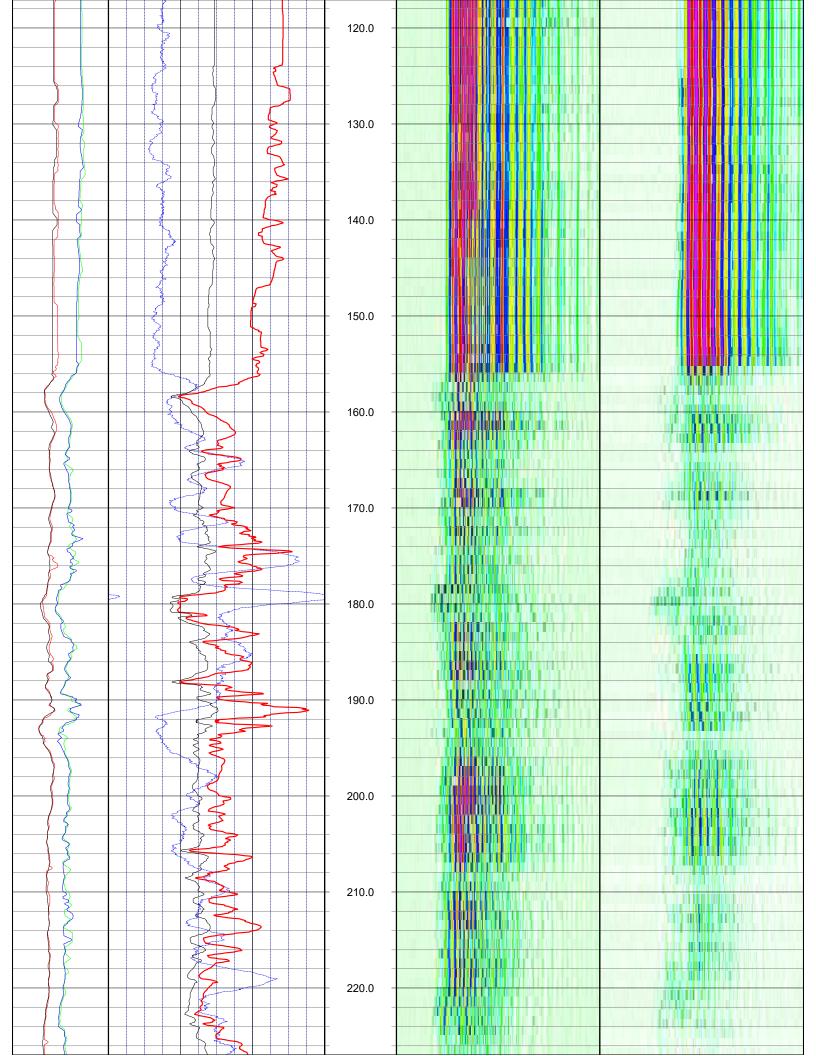
Assuming a carbonate formation, the porosity can be calculated using the Raymer-Hunt-Gardner (RHG) equation:

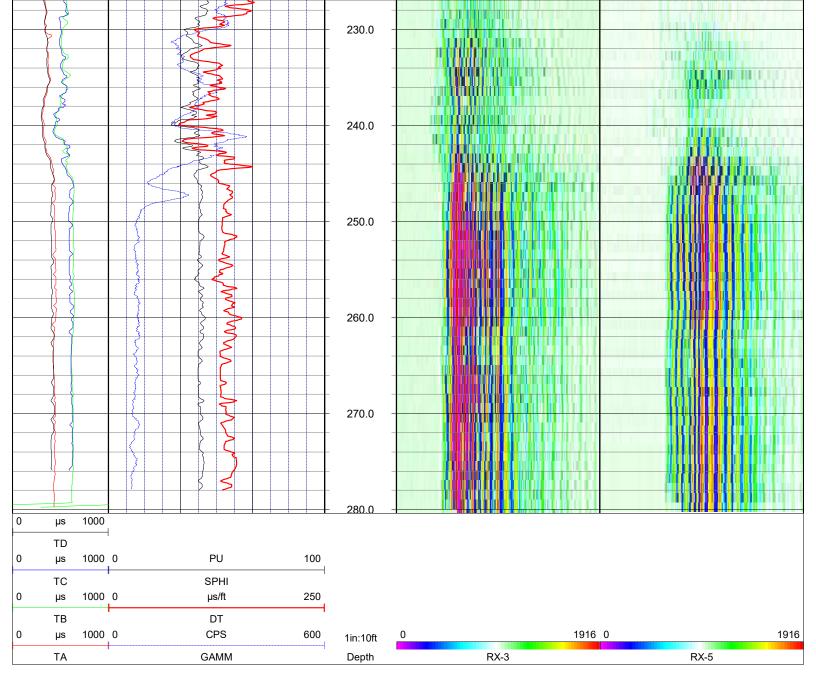
porosity= 5/8 x ([TT of log - TT of matrix] / TT of log), where "TT of log" is the measured sonic value and the "TT of matrix" is a constant.

The TT of matrix for dolostone is 43.5 microseconds per foot, and for limestone is 47.5 microseconds per foot.





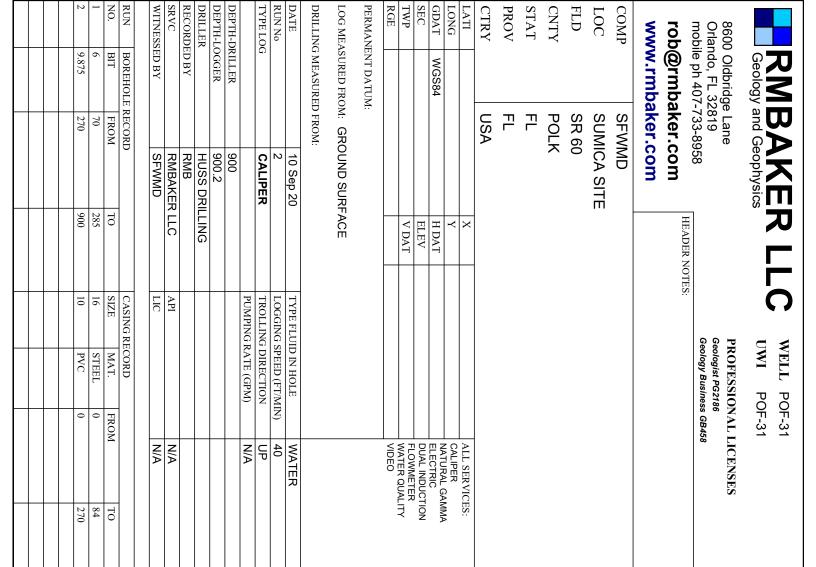


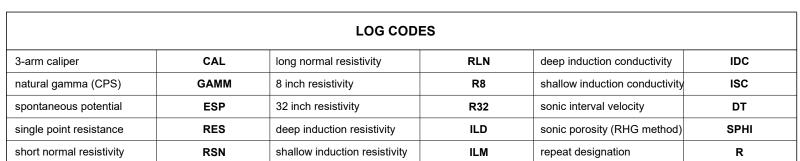


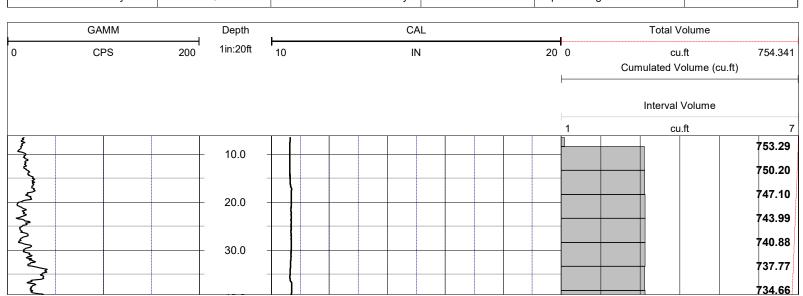
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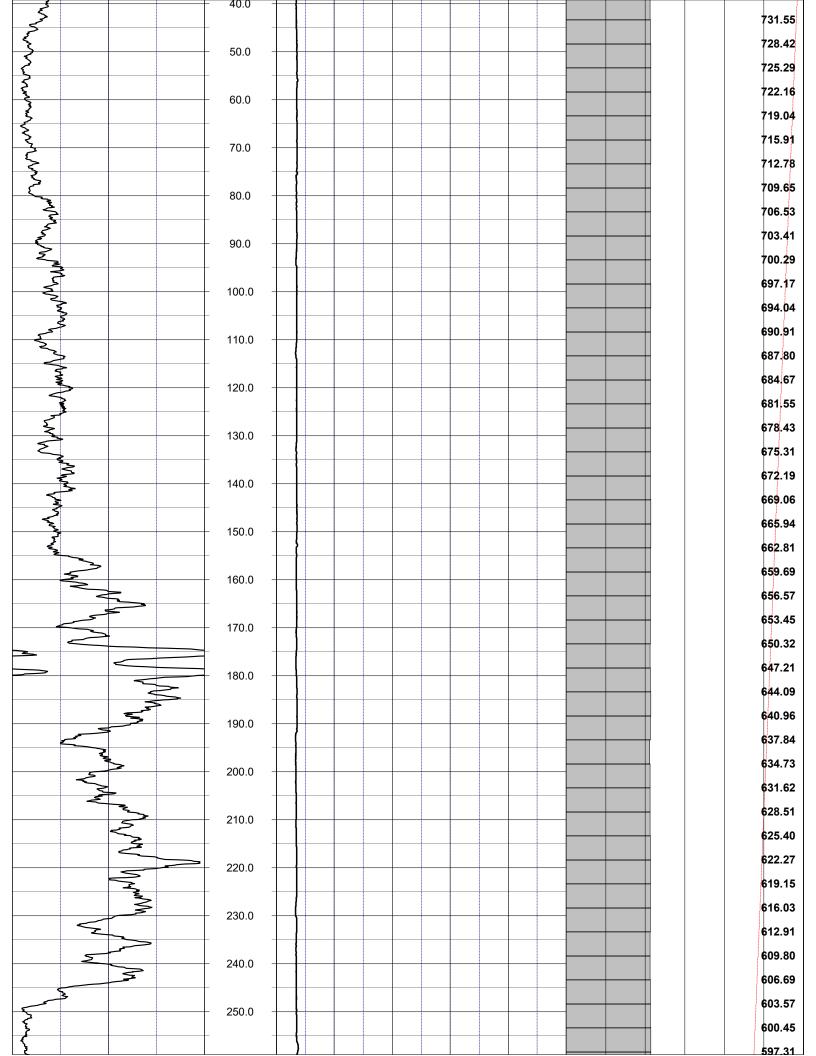
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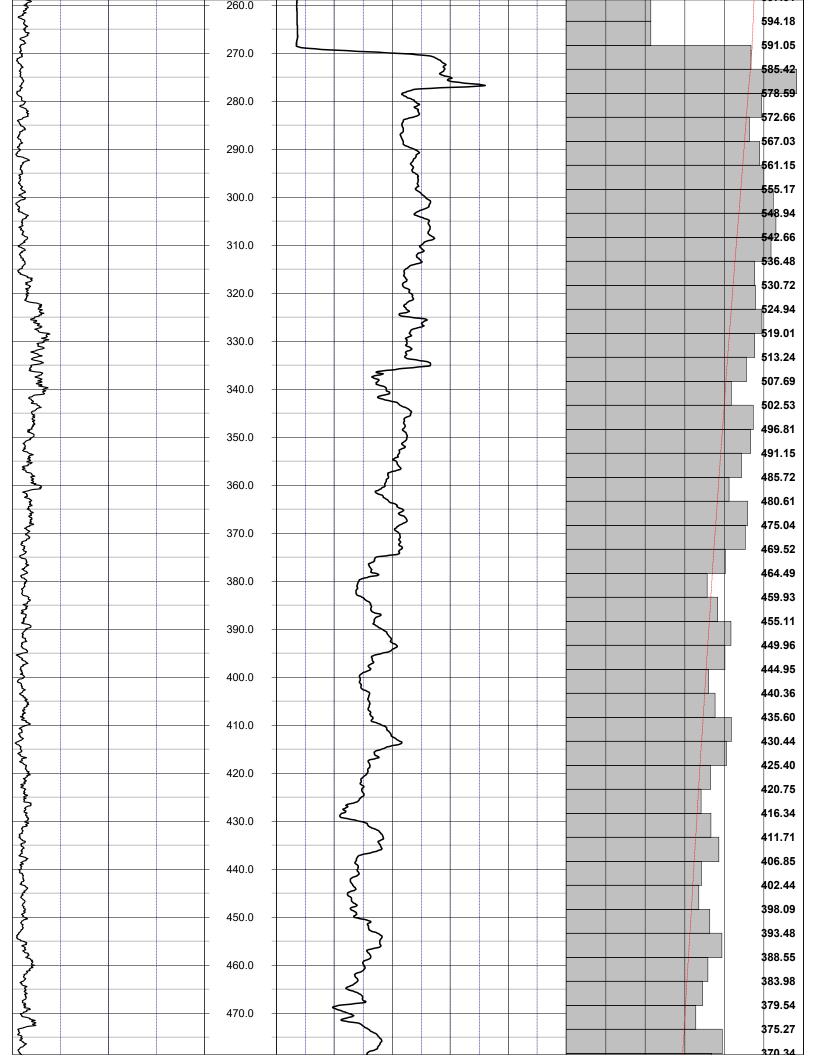
Florida Licensed Geology Business GB 458

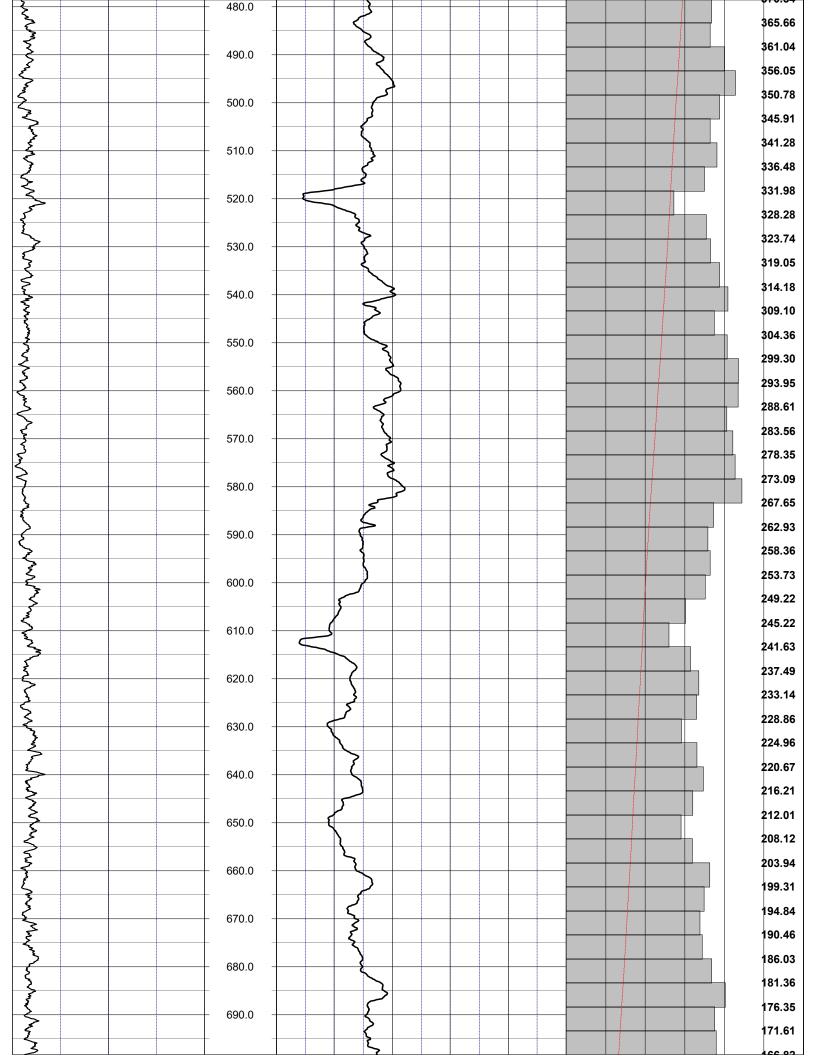


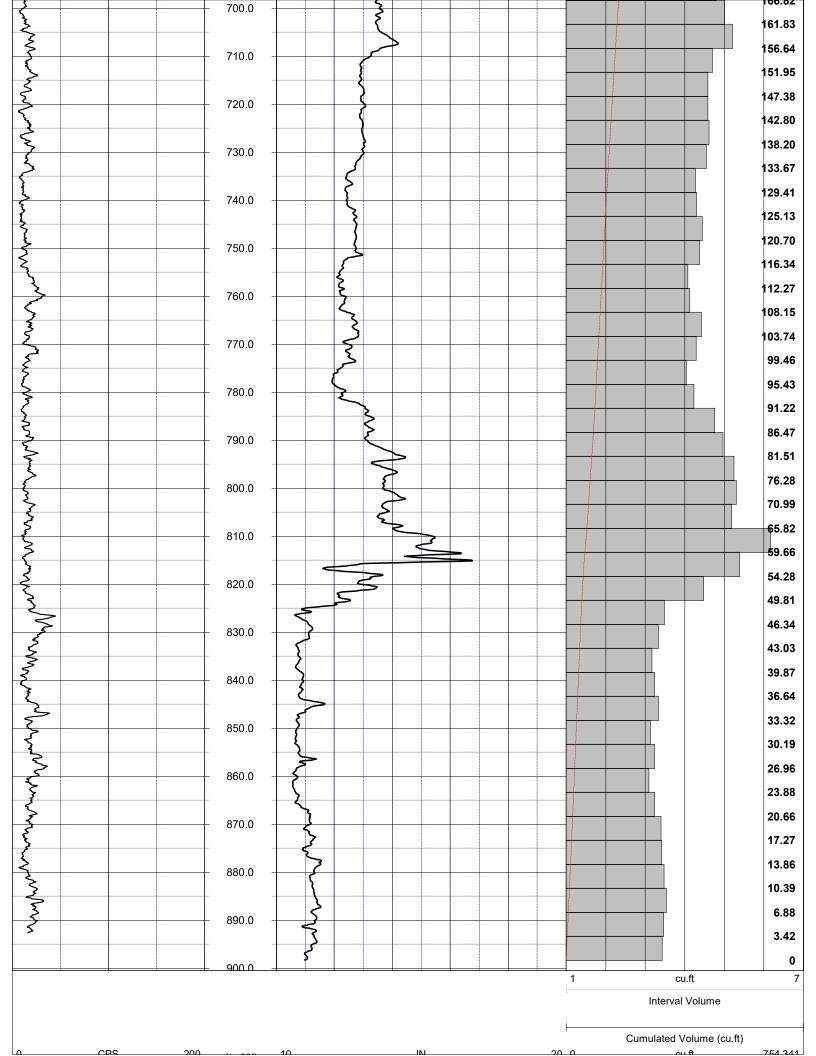












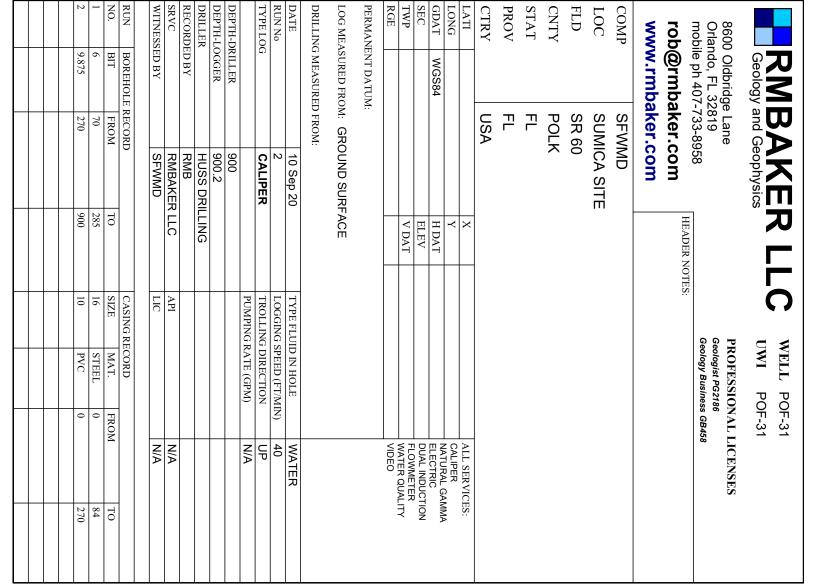
GAMM Depth CAL Total Volume	U	01 0	200	1ın:20ft	10 114	20	0 Cu.it 754.541
		GAMM	1	Depth	CAL		

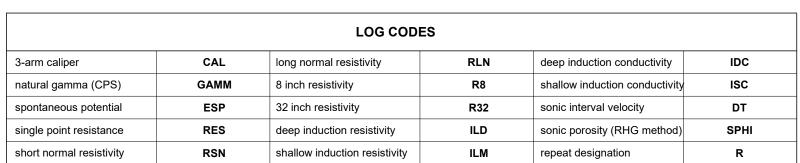
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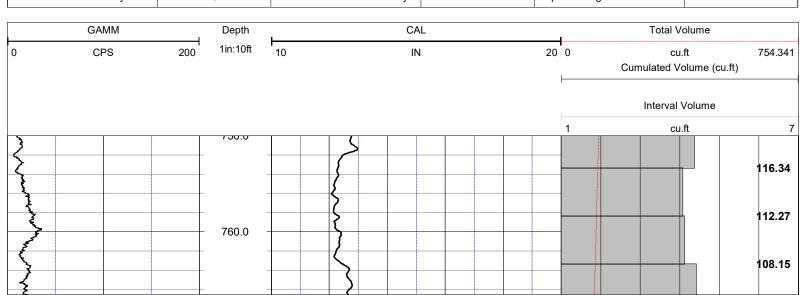
surveyed.

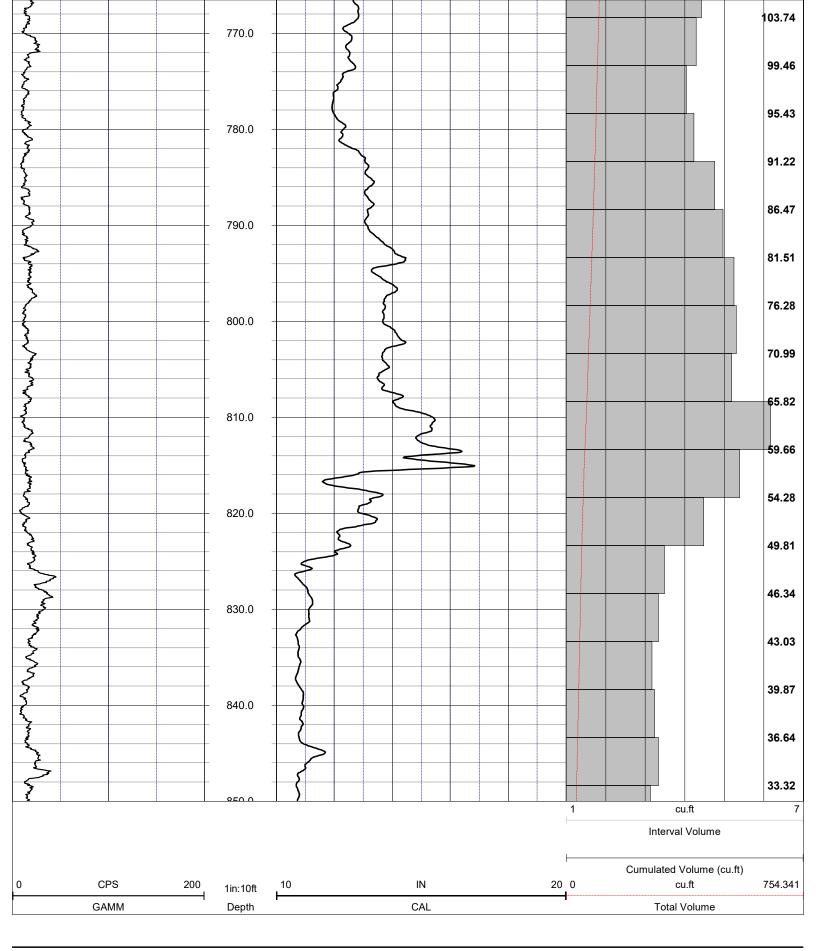
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		_



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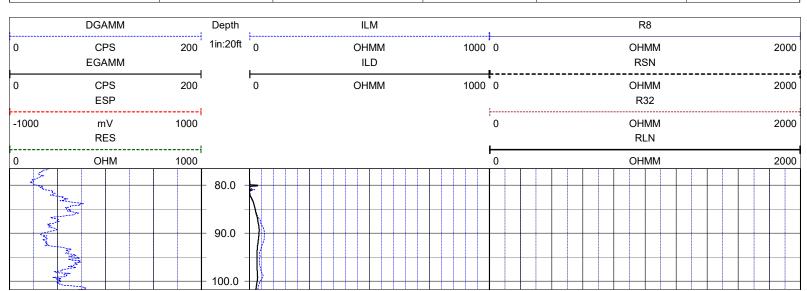
WELL POF-31

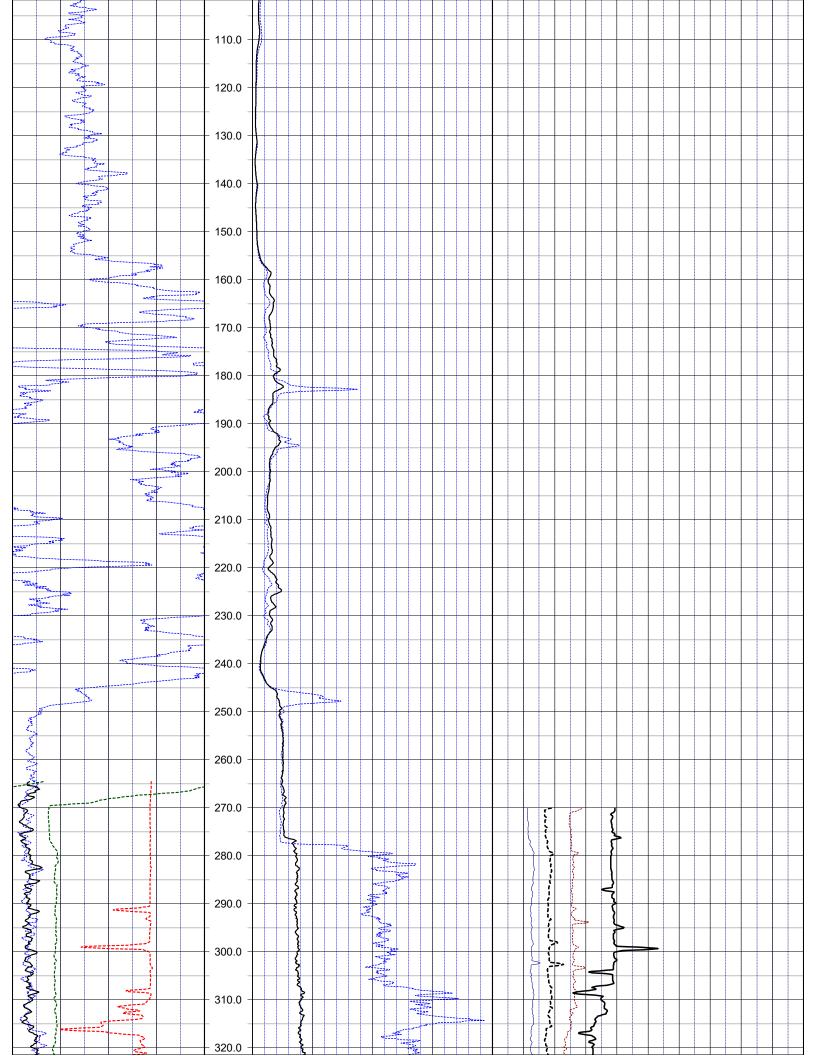
Geologist PG2186 PROFESSIONAL LICENSES

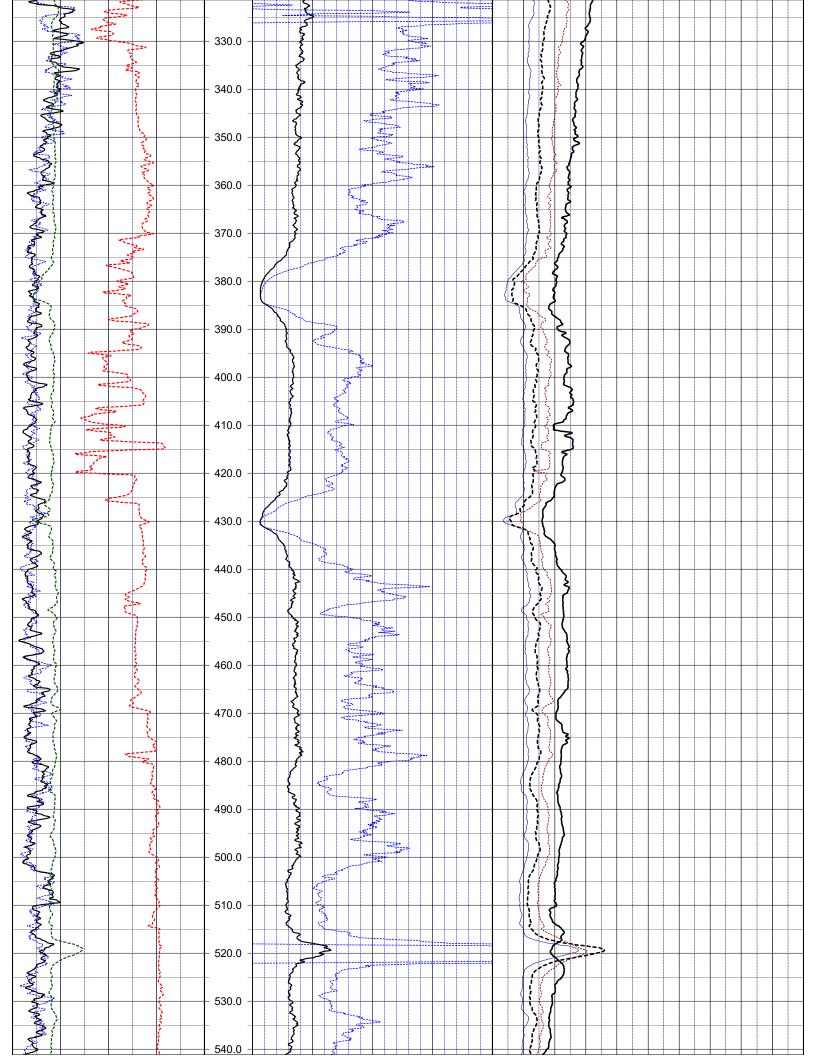
Geology Business GB458 POF-31

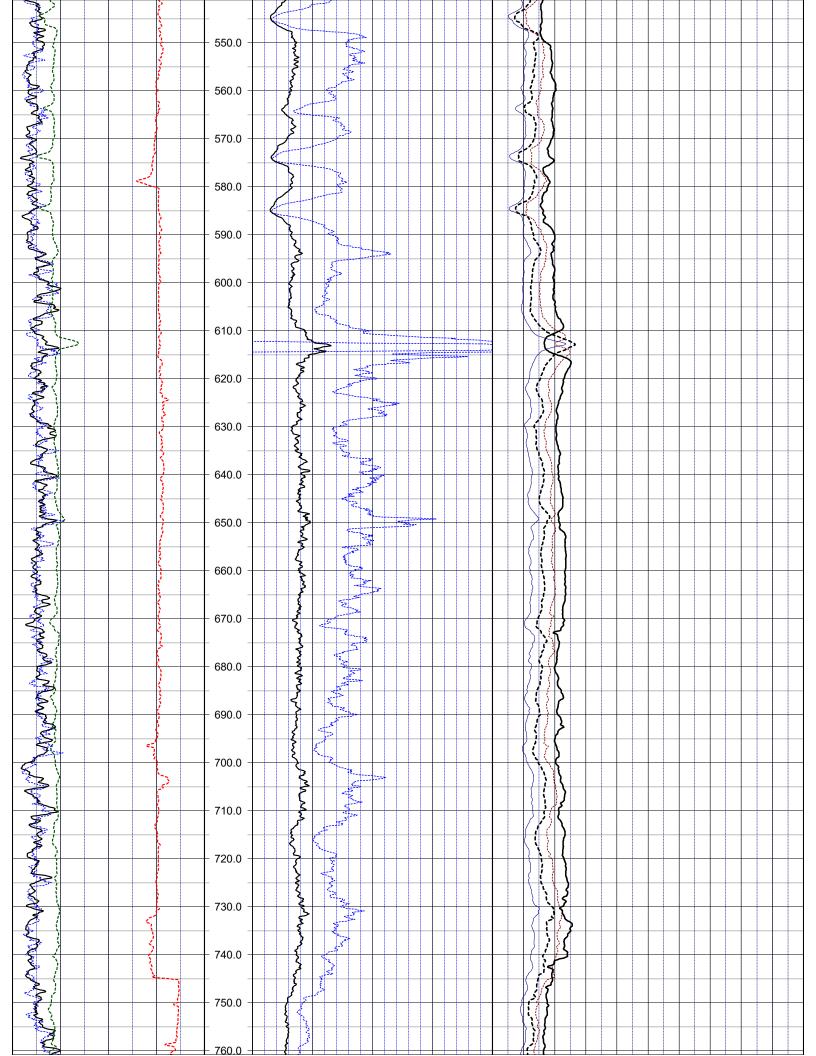
COMP		SFWMD					
LOC		SUMICA SITE					
FLD		SR 60					
CNTY		POLK					
STAT		핃					
PROV		핃					
CTRY		USA					
LATI	-		×			ALL SI	ALL SERVICES:
LONG			Y			CALIPER	SR O
GDAT	WGS84		H DAT			NATURAL O	ELECTRIC
SEC			ELEV			DUAL	DUAL INDUCTION
TWP			V DAT			WATER	WATER QUALITY
RGE						VIDEO	VIDEO
PERMANE	PERMANENT DATUM:						
LOG MEAS	URED FRON	LOG MEASURED FROM: GROUND SURFACE	=ACE				
DRILLING	DRILLING MEASURED FROM:	FROM:					
DATE		10 Sep 20		TYPE FLUID IN HOLE	D IN HOLE	WATER	ER
RUN No		2		LOGGING	LOGGING SPEED (FT/MIN)	N) 35	
TYPE LOG		ELECTRIC + DUIN	+ DUIN	TROLLING	TROLLING DIRECTION	UP	
				PUMPING I	PUMPING RATE (GPM)	N/A	
DEPTH-DRILLER	ILLER	900					
DEPTH-LOGGER	GGER	900.2					
DRILLER		HUSS DRILLING	LLING				
RECORDED BY	DBY	RMB					
SRVC		RMBAKER LLC	LLC	API		N/A	
WITNESSED BY	DBY	SFWMD		LIC		N/A	
RUN I	BOREHOLE RECORD	RECORD		CASING RECORD	CORD		
NO. I	BIT	FROM	ТО	SIZE	MAT.	FROM	ТО
1 6	Ó	70	285	16	STEEL	0	84
2 9	9.875	270	900	10	PVC	0	270

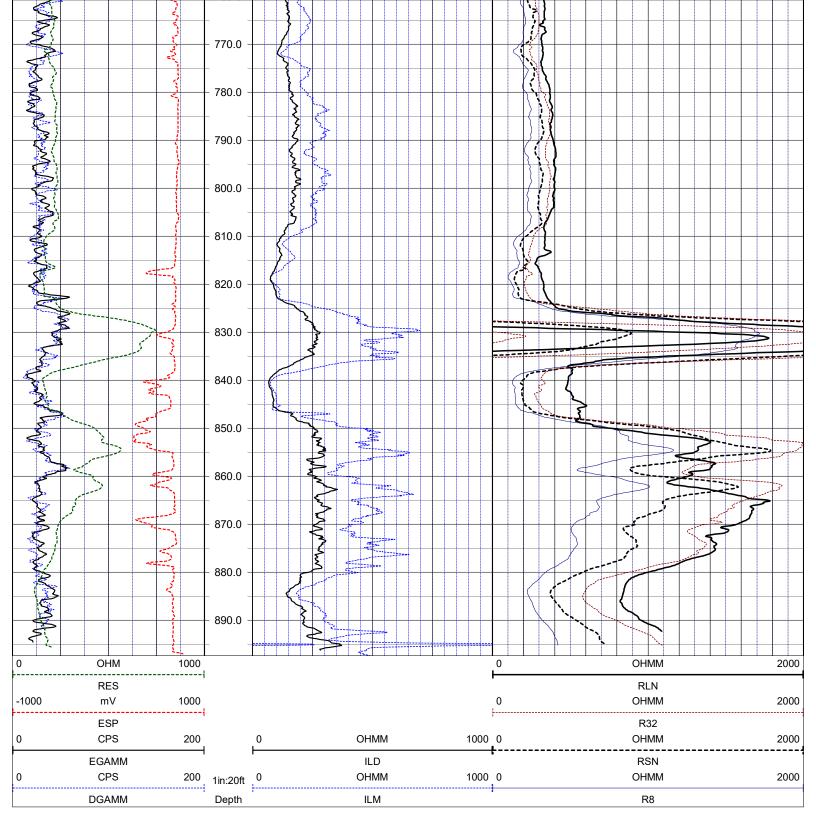
		LOG COD	ES		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R











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COMP

**SFWMD** 

SUMICA SITE

LOC

UWI	WELL
POF-31	POF-31

Geology Business GB458 Geologist PG2186 PROFESSIONAL LICENSES

### PROJECT NOTES:

- -The spinner rate curves deflect to the positive direction with increasing flow from the well.

N/A

Z X

-The spinner rate curves are not corrected for borehole diameter. -The natural flow rate was visually estimated at 100-150 GPM.

RUN

BOREHOLE RECORD

WITNESSED BY

SRVC RECORDED BY DRILLER DEPTH-LOGGER

N0.

BIT

FROM

9.875

270

70

TO 285 900

> SIZE 16

> > MAT.

10

PVCSTEEL

270 84 TO

0 FROM CASING RECORD

		FLOWMETER LOC	G CODES		
down static spinner rate	FSD	down static line speed	LSSD	natural gamma (w/annot.)	GAMM
up static spinner rate	UTS	up static line speed	LSSU	caliper	CAL
down dynamic spinner rate	DYND	down dynamic line speed	LSDD	repeat designation	R
up dynamic spinner rate	DYNU	up dynamic line speed	LSDU	percent flow	PFLO
static station spinner rate	FSU	dynamic station spinner rate	FSP	GPM flow	GPMFLO

SEC GDAT

ELEV H DAT  $\prec$ 

CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
FLOWMETER
WATER QUALITY

ALL SERVICES:

V DAT

LONG

WGS84

LATI CTRY **PROV** 

**USA** 

STAT

CNTY FLD

POLK SR 60

TWP

RGE

RUN No DATE DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

TYPE LOG

FLOWMETER

PUMPING RATE (GPM)

FLOWING 150 GPM

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

30

WATER

BOTH

TYPE FLUID IN HOLE

10 Sep 20

DEPTH-DRILLER

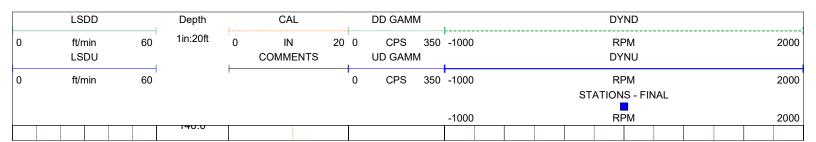
900.2

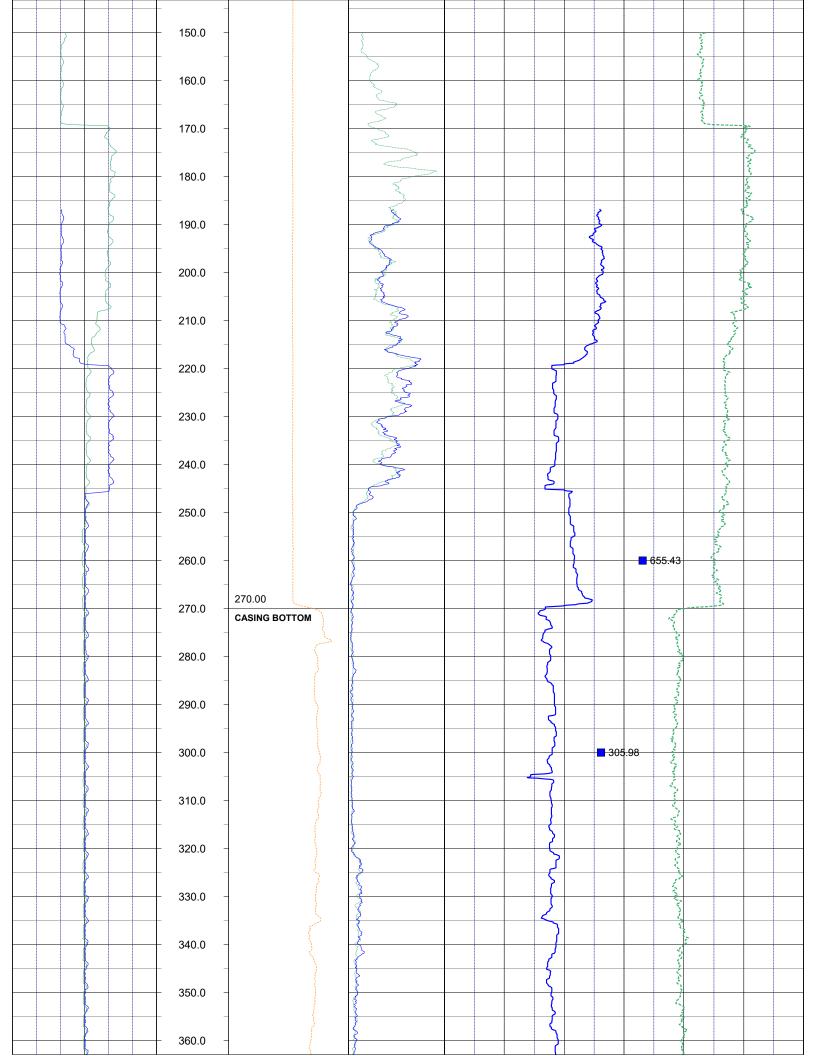
900

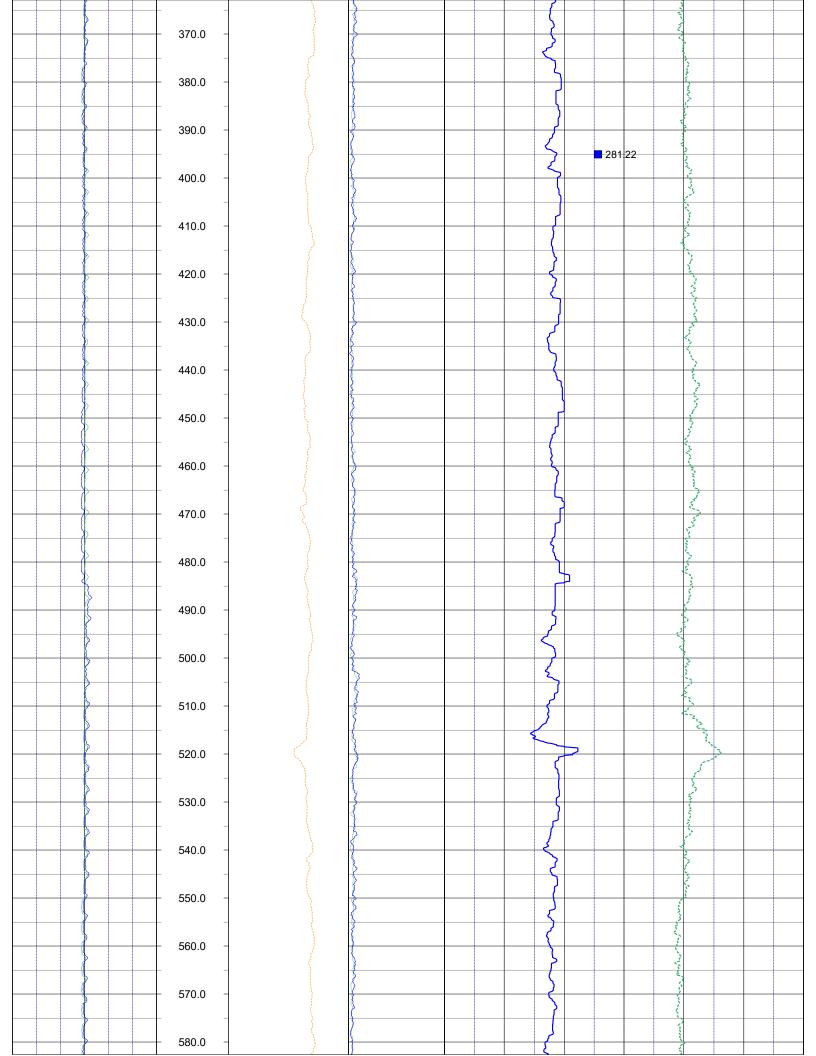
RMB

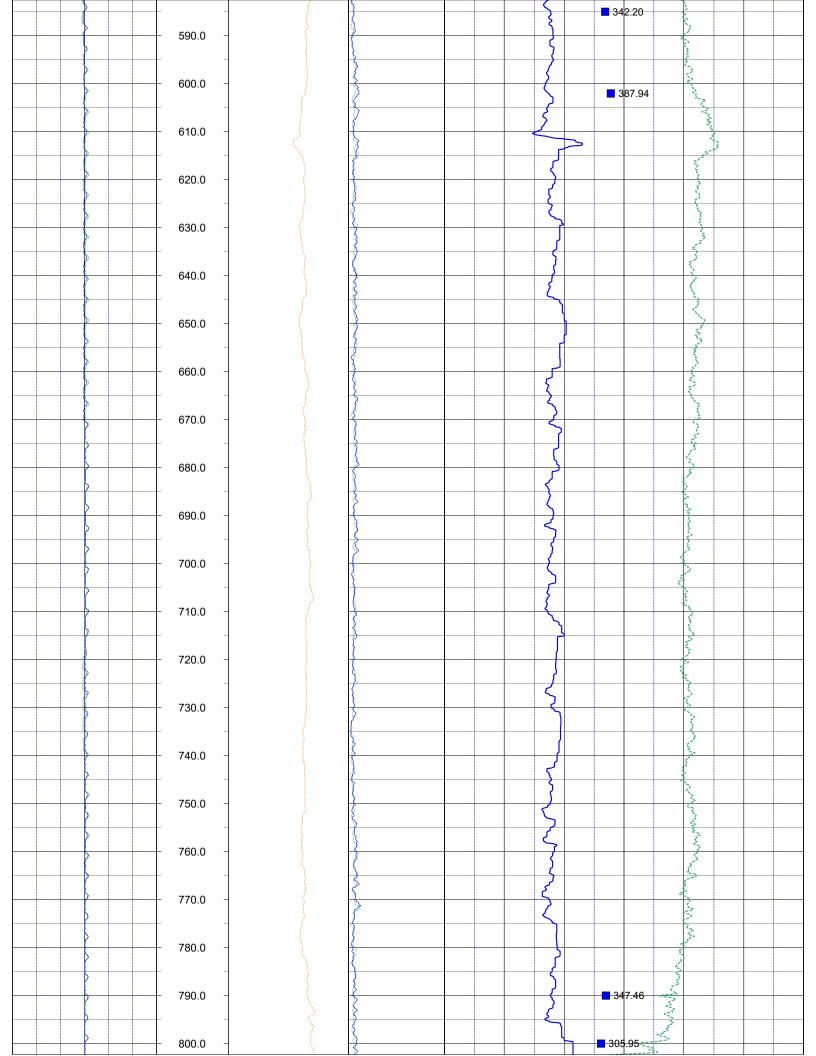
RMBAKER LLC

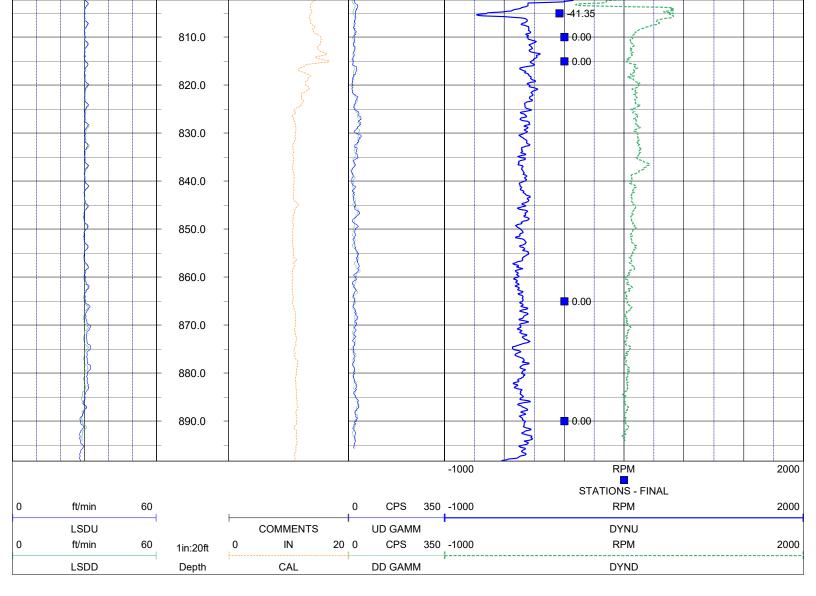
LIC API **HUSS DRILLING** 











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surveyed.

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Florida Licensed Geology Business GB 458



HEADER NOTES:

www.rmbaker.com rob@rmbaker.com

COMP LOC

**SFWMD** 

SUMICA SITE

<b>IW</b> D
POF-31

Geology Business GB458 Geologist PG2186 PROFESSIONAL LICENSES

# PROJECT NOTES:

- -The spinner rate curves deflect to the positive direction with increasing flow from the well.
- -The spinner rate curves are not corrected for borehole diameter. -The natural flow rate was visually estimated at 100-150 GPM.

RUN

BOREHOLE RECORD

WITNESSED BY

SFWMD

RMBAKER LLC

API

N/A

Z X

SRVC RECORDED BY DRILLER DEPTH-LOGGER DEPTH-DRILLER

N0.

BIT

9.875

270 70 FROM

TO 285 900

SIZE 16

MAT.

10

PVCSTEEL

270 84 TO

0 FROM CASING RECORD

DATE

DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

RUN No

TYPE LOG

FLOWMETER

**PUMPING RATE (GPM)** 

FLOWING 150 GPM

LOGGING SPEED (FT/MIN) TYPE FLUID IN HOLE

30

WATER

BOTH

TROLLING DIRECTION

10 Sep 20

900.2

RMB

**HUSS DRILLING** 

900

 $_{\mathrm{dML}}$ SEC GDAT LONG

V DAT ELEV H DAT  $\prec$ 

CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
FLOWMETER
WATER QUALITY

ALL SERVICES:

WGS84

LATI CTRY **PROV** 

USA

RGE

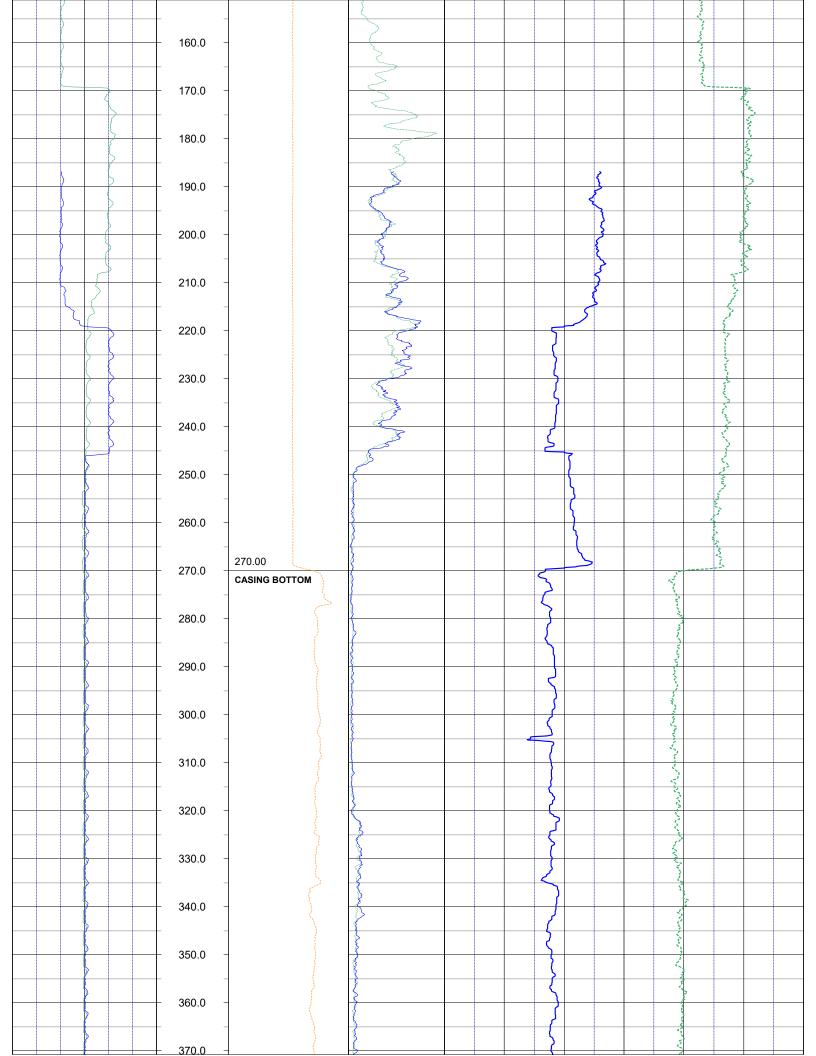
STAT

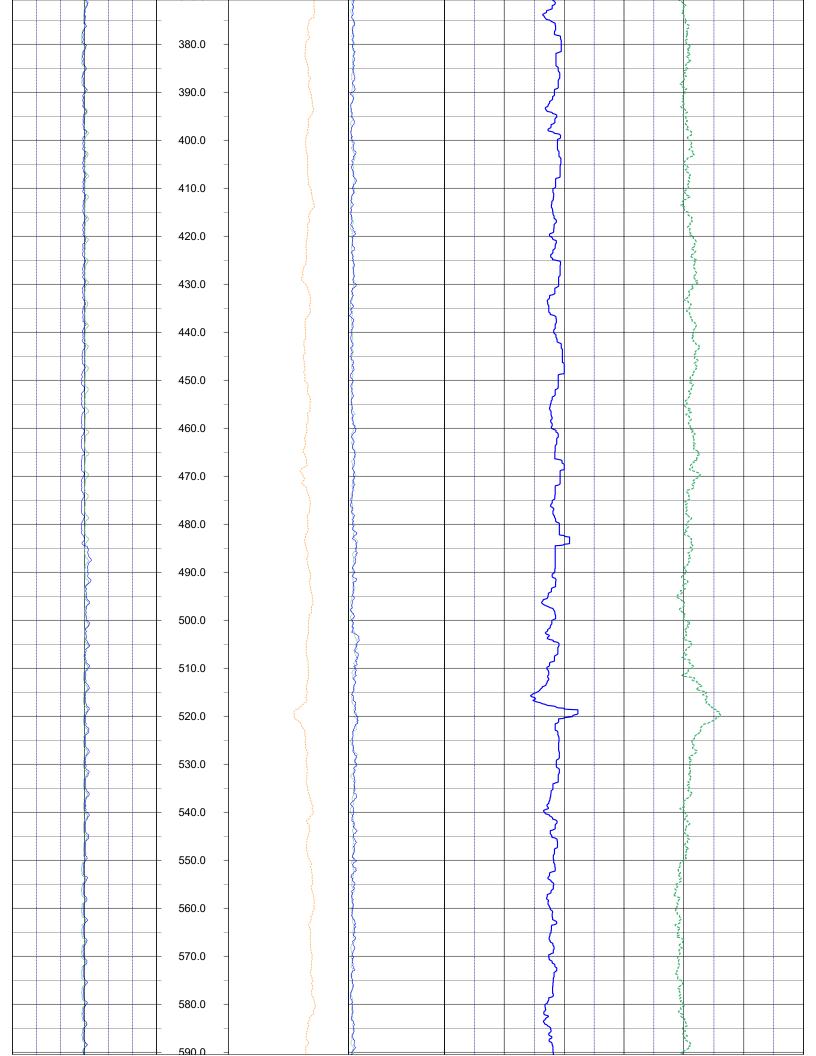
CNTY FLD

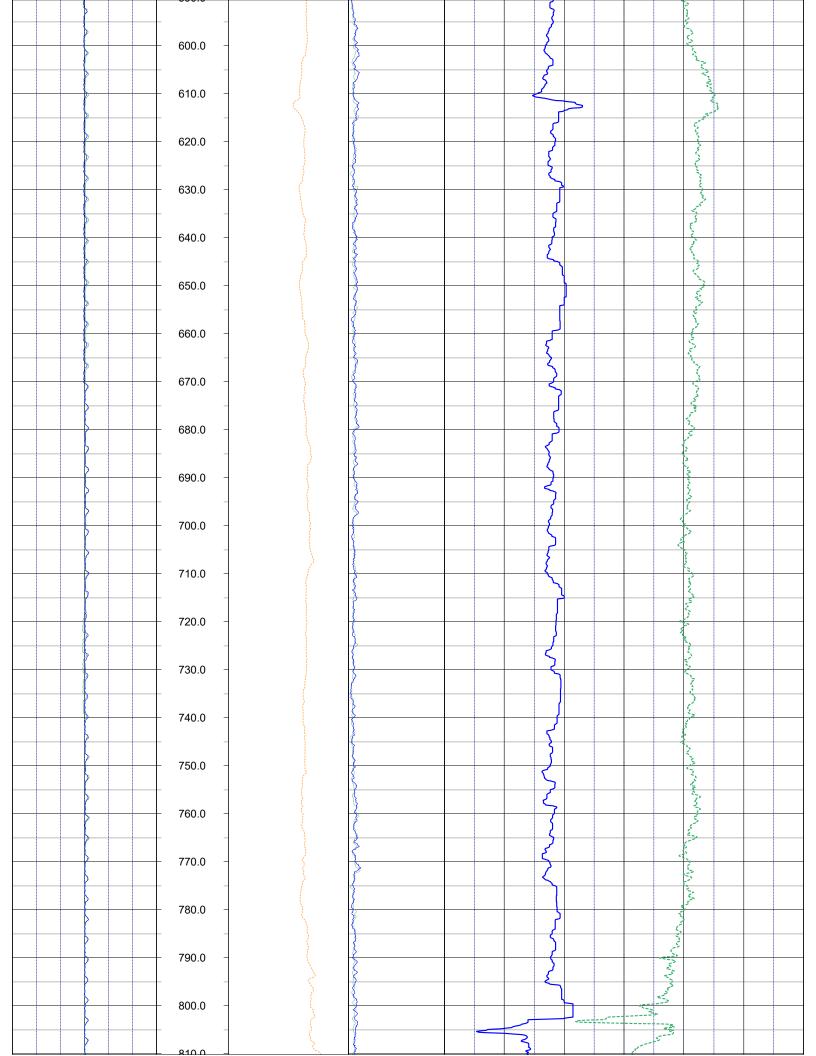
SR 60 POLK

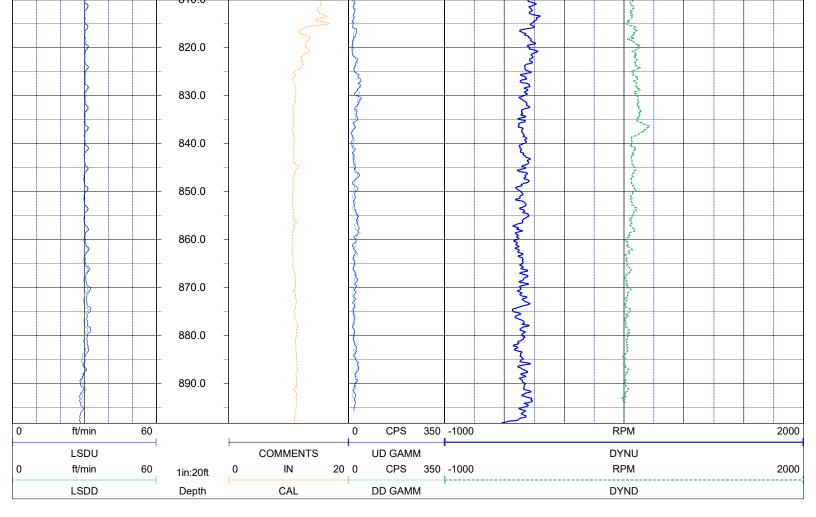
		FLOWMETER LO	G CODES		
down static spinner rate	FSD	down static line speed	LSSD	natural gamma (w/annot.)	GAMM
up static spinner rate	UTS	up static line speed	LSSU	caliper	CAL
down dynamic spinner rate	DYND	down dynamic line speed	LSDD	repeat designation	R
up dynamic spinner rate	DYNU	up dynamic line speed	LSDU	percent flow	PFLO
static station spinner rate	FSU	dynamic station spinner rate	FSP	GPM flow	GPMFLO

	LSDD	1	Depth		CAL			DD GAMN	1			DYND		
0	ft/min LSDU	60	1in:20ft	0	IN COMMENTS	20		CPS UD GAMN		-1000		RPM DYNU		2000
0	ft/min	60					0	CPS	350	-1000		RPM		2000
			150.0	_			ζ.						3"	









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# www.rmbaker.com rob@rmbaker.com

COMP LOC

SFWMD

SUMICA SITE

PROV STAT CNTY FLD

> POLK SR 60

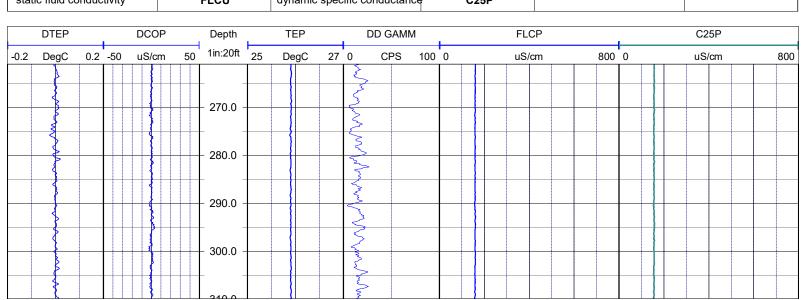
> > IWU WELL POF-31 POF-31

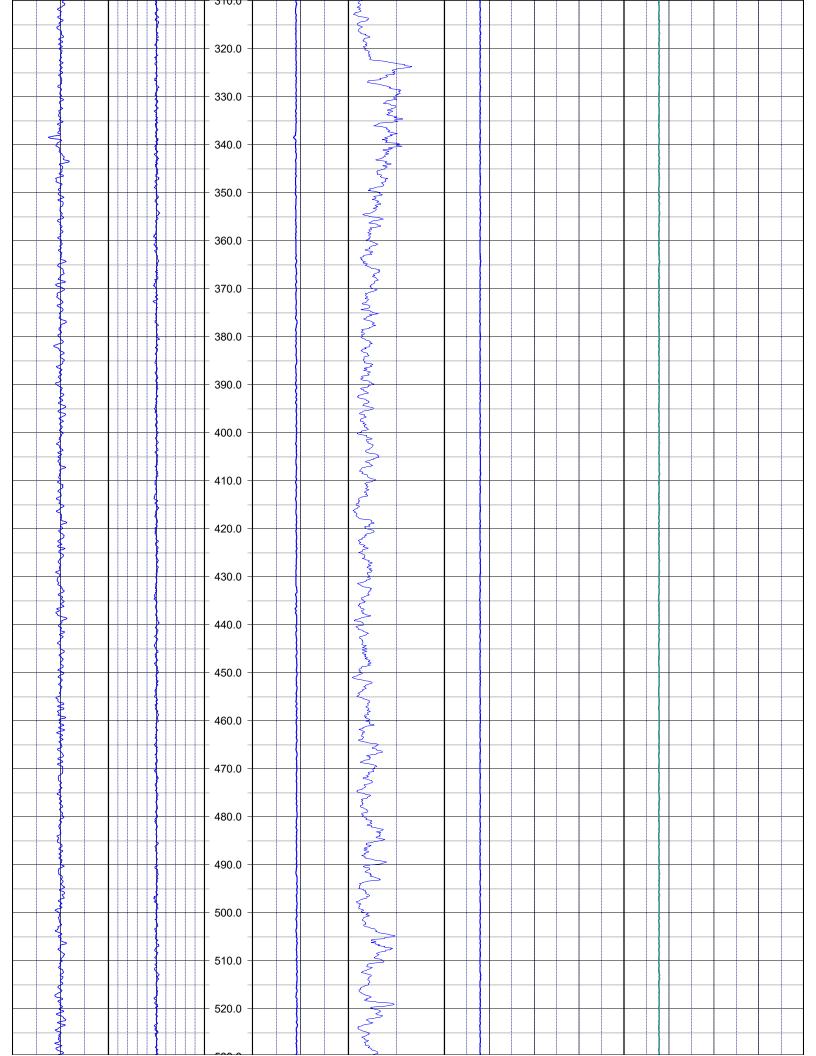
Geology Business GB458 Geologist PG2186 PROFESSIONAL LICENSES

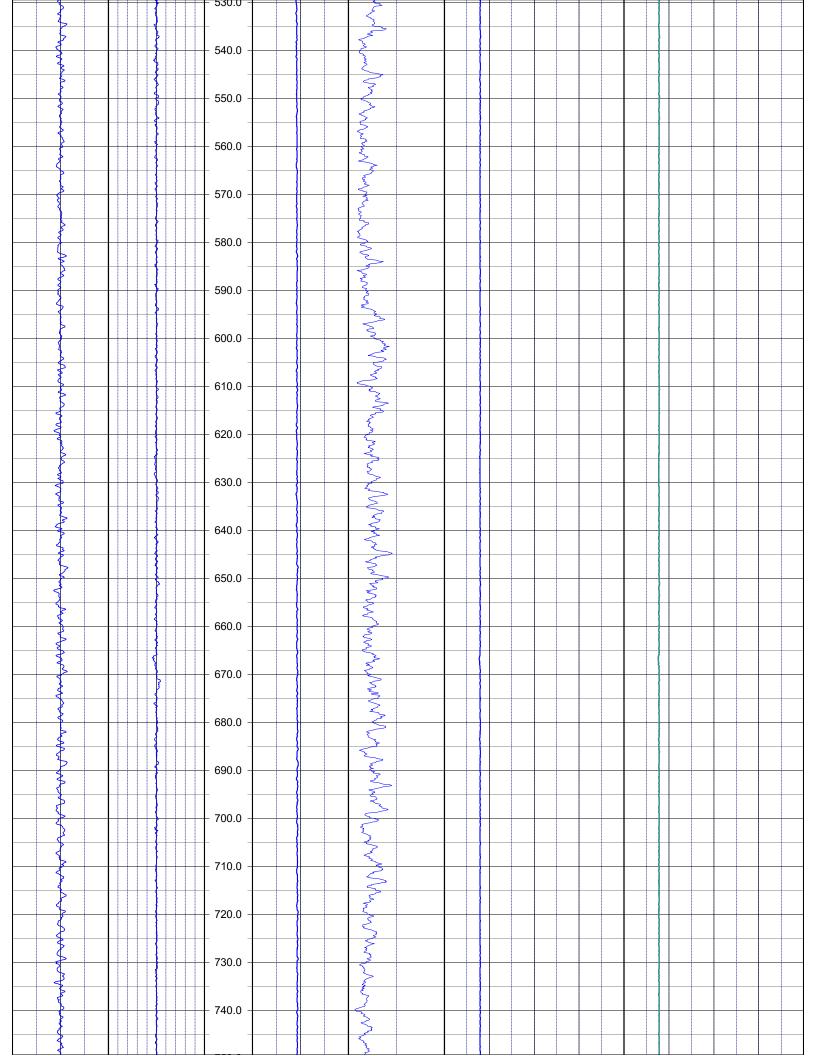
HEADER NOTES: WELL WAS FLOWING NATURALLY AT A VISUALLY ESTIMATED 100-150 GPM

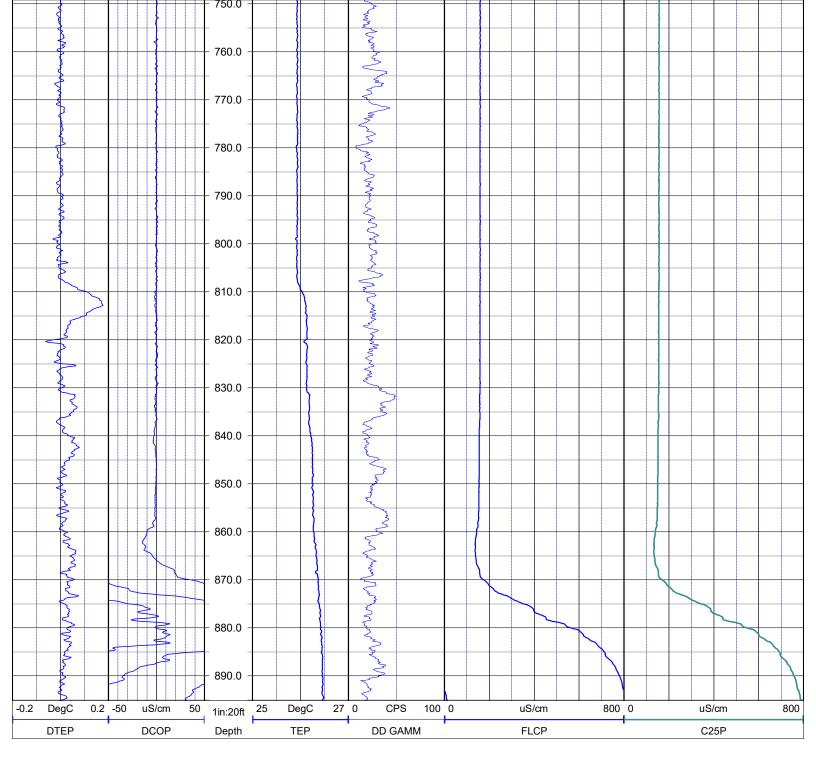
USA						
	X			Al	L SERVICES	 
	Y				LIPER	•
	H DAT			四名	ECTRIC	MA
	ELEV			ַ פַּוּ	JAL INDUCTION	SN
	V DAT			V F	OWMETER	≺
				≤:	DEO	-
ROUND SURF	:ACE					
DRILLING MEASURED FROM:						
10 Sep 20		TYPE FLU	ID IN HOLE	<b>\$</b>	/ATER	
2		LOGGING	SPEED (FT/M		0	
WATER Q	UALITY	TROLLING	DIRECTION		NWO	
		PUMPING	RATE (GPM)	A	PPROX 15	0 GPM
900						
900.2						
HUSS DRII	LLING					
RMB						
RMBAKER	LLC	API		z	/A	
SFWMD		LIC		z	A A	
BOREHOLE RECORD		CASING R	ECORD			
FROM	ТО	SIZE	MAT.	FROM		ТО
	285	16	STEEL	0	8	84
	900	10	PVC	0	h)	270
		OUND SURFA  10 Sep 20  10 Sep 20  2  WATER QU  900.2  HUSS DRILL  RMB  RMBAKER L  SFWMD  D  D  D  D  17	OUND SURFACE    HDAT   HDAT   ELEV   VDAT     VDAT   VDAT     VDAT   VDAT     VDAT   VDAT   VDAT     VDAT   VDAT   VDAT     VDAT   VDAT   VDAT   VDAT   VDAT     VDAT   VD	OUND SURFACE    HDAT   ELEV   V DAT     V DAT     V DAT     10 Sep 20     V DAT     2	X	X

		WATER QUALITY LO	OG CODES		
static fluid temperature	TEU	dynamic fluid conductivity	FLCP	caliper	CAL
dynamic fluid temperature	TEP	static differential cond.	DCOU	repeat designation	R
static differential temperature	DTEU	dynamic differential cond.	DCOP	natural gamma	GAMM
dynamic differential temp.	DTEP	static specific conductance	C25U	calibration correction	С
static fluid conductivity	FLCU	dynamic specific conductance	C25P		









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www.rmbaker.com rob@rmbaker.com

COMP

SFWMD

LOC

IWU WELL POF-32 POF-32

PROFESSIONAL LICENSES

# HEADER NOTES: Licensed Geology Business Geologist PG2186

LOG CODES									
3-arm caliper	CAL long normal resistivity		RLN	deep induction conductivity	IDC				
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC				
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT				
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI				
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R				

NO. RUN

BOREHOLE RECORD

FROM

9.875 BIT

270

1412 TO

SIZE

MAT. PVC

FROM

270 TO CASING RECORD

10

WITNESSED BY

SFWMD

LIC API

N N N N

RMBAKER LLC

**HUSS DRILLING** 

RMB

1412 1410

SRVC RECORDED BY DRILLER DEPTH-LOGGER **DEPTH-DRILLER**  DATE

DRILLING MEASURED FROM:

LOG MEASURED FROM: TOP OF CASING

PERMANENT DATUM:

RUN No

TYPE LOG

**CALIPER** 

PUMPING RATE (GPM)

TROLLING DIRECTION

UP

40

WATER

N/A

LOGGING SPEED (FT/MIN) TYPE FLUID IN HOLE

03 Nov 20

 $_{\rm dML}$ SEC GDAT LONG

WGS84

RGE

STAT CNTY

끋

FLD

POLK

**SR 60 SUMICA** 

**HESPERIDES ROAD** 

CTRY PROV

USA

×

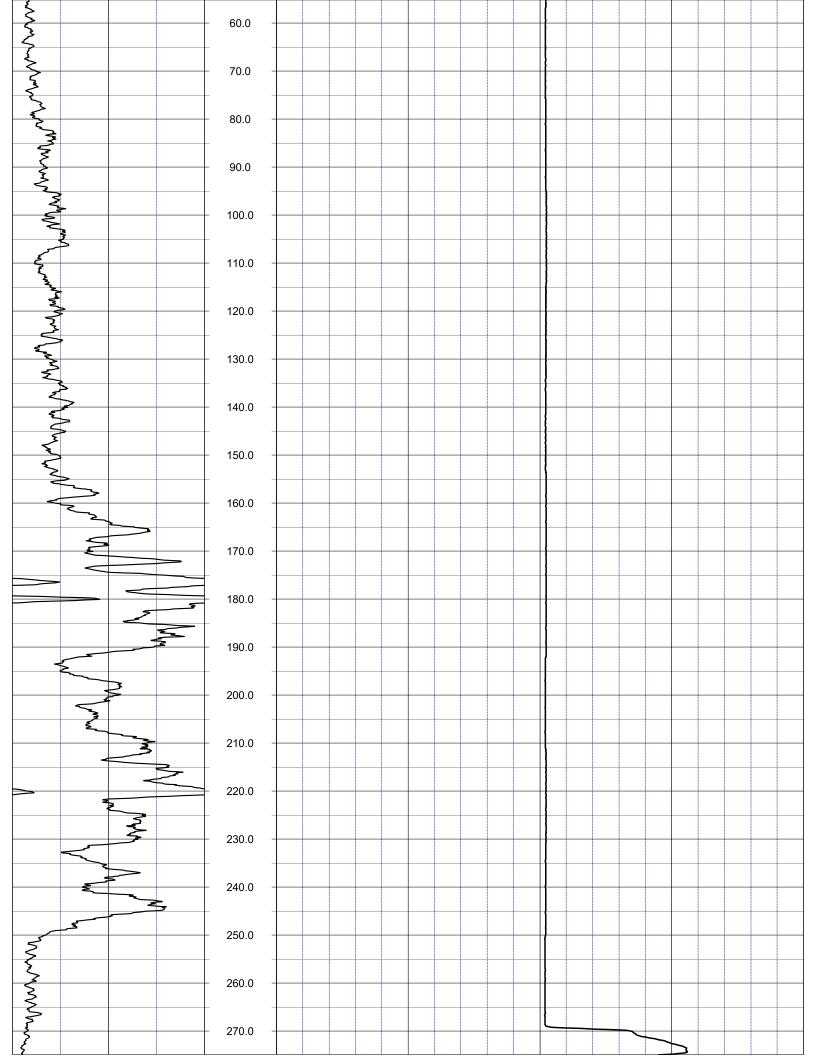
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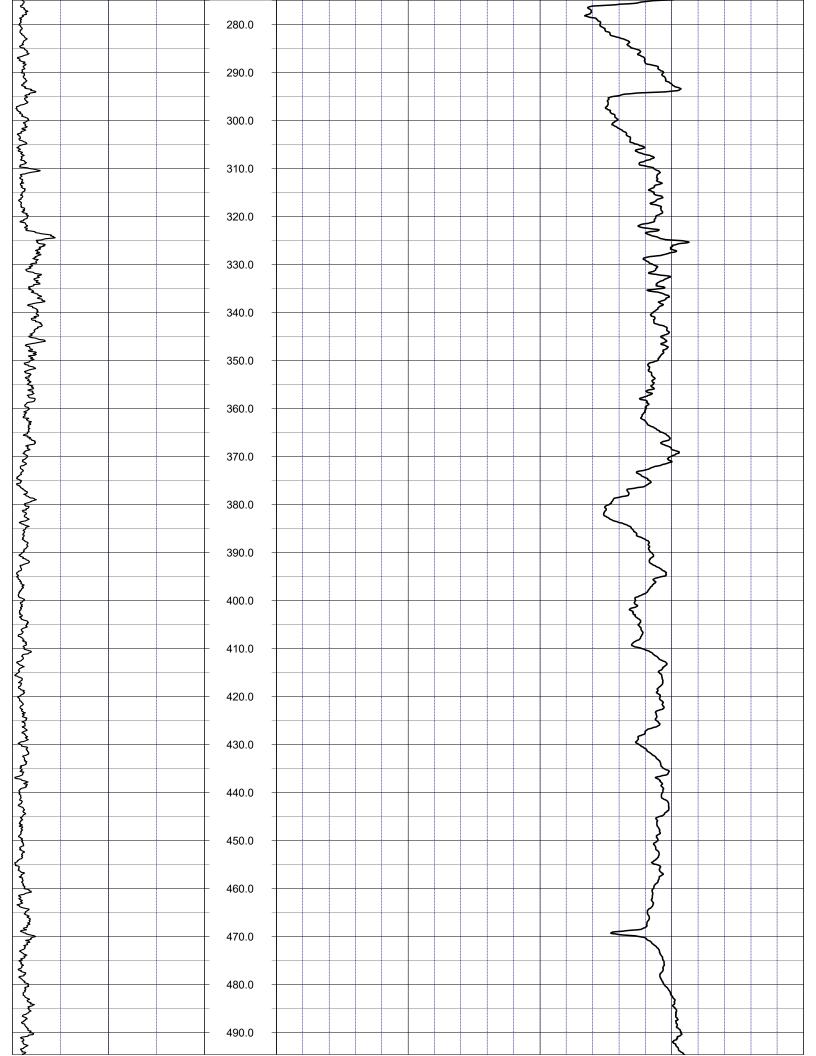
ALL SERVICES:
CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
WATER QUALITY
FLOWMETER

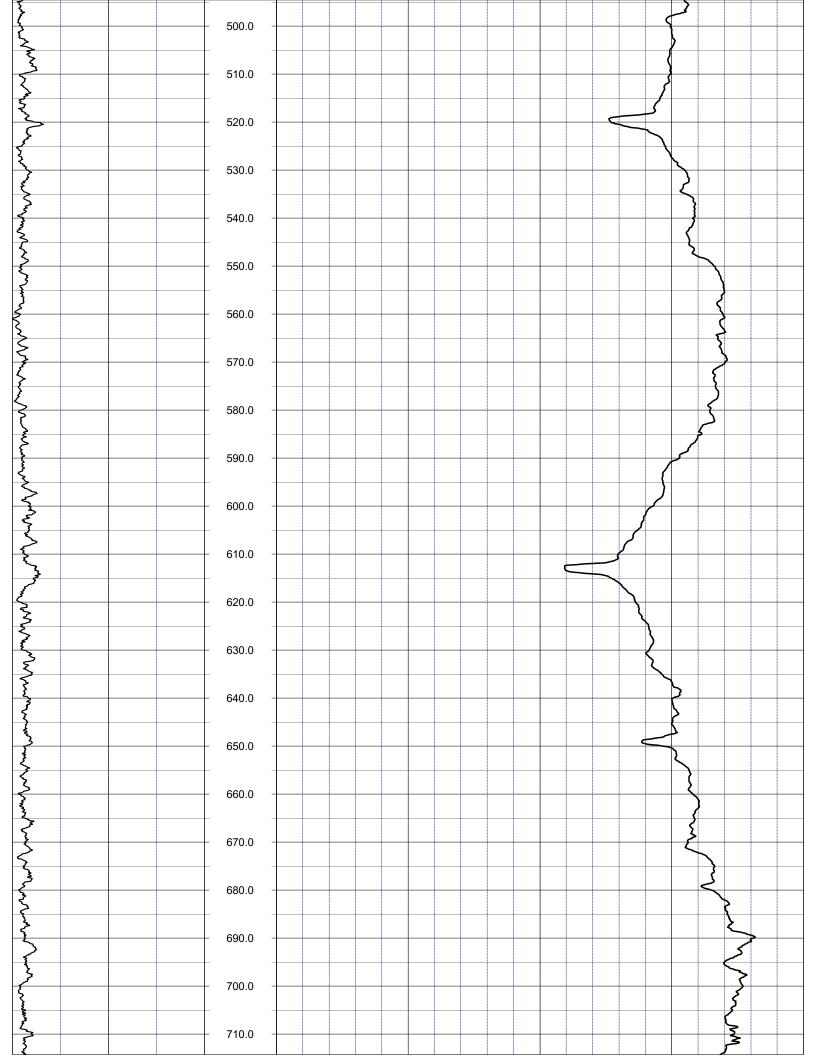
SONIC

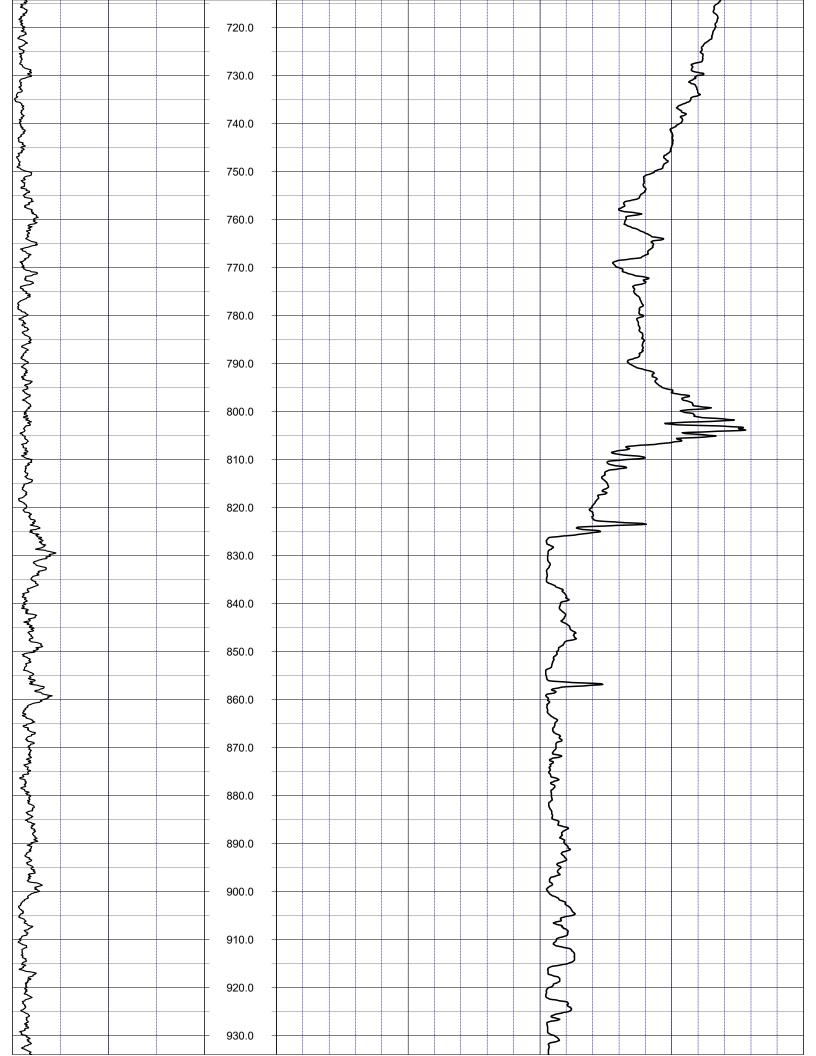
V DAT ELEV LATI

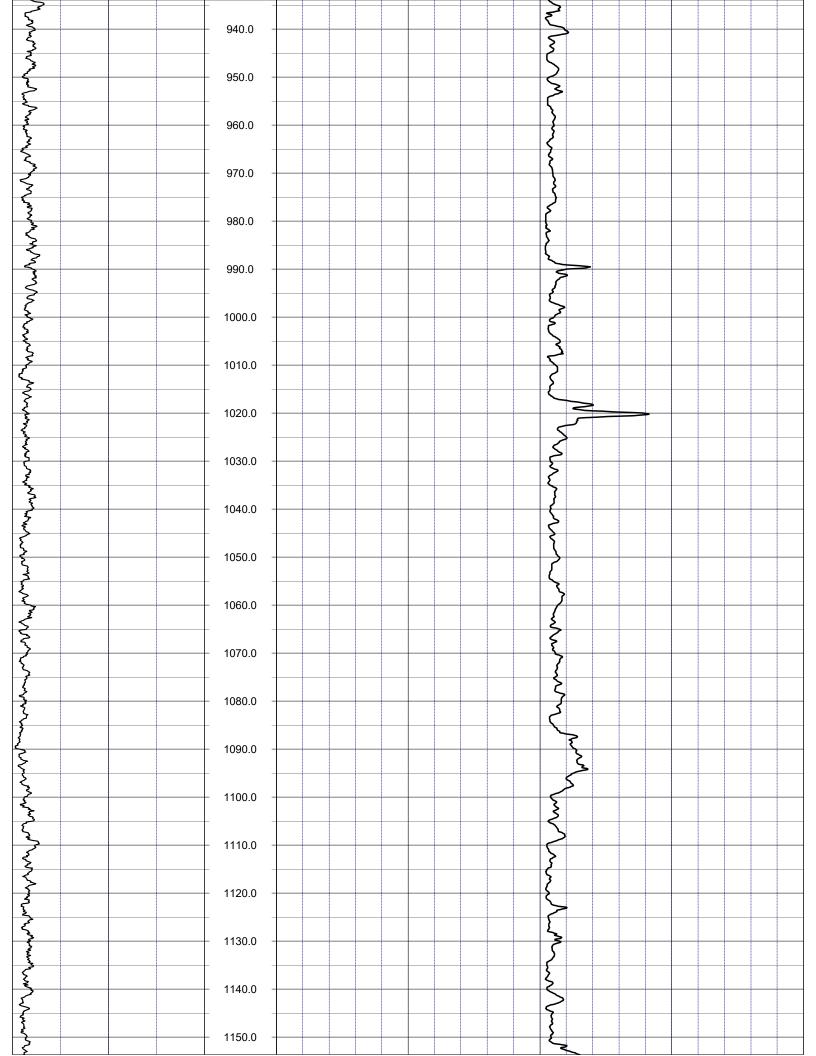
short normal resistivity F		SN	shallow induction resistivity		ivity	IL	-M	repeat designation			R					
	GAMM		Depth	1				C	ALP							
0	CPS	200	1in:20ft	0 in									20			
<b>\</b>			10.0 -													
5			20.0													
An-A Commonweal			30.0 -													
3			40.0 -						}							
{			50.0 -													

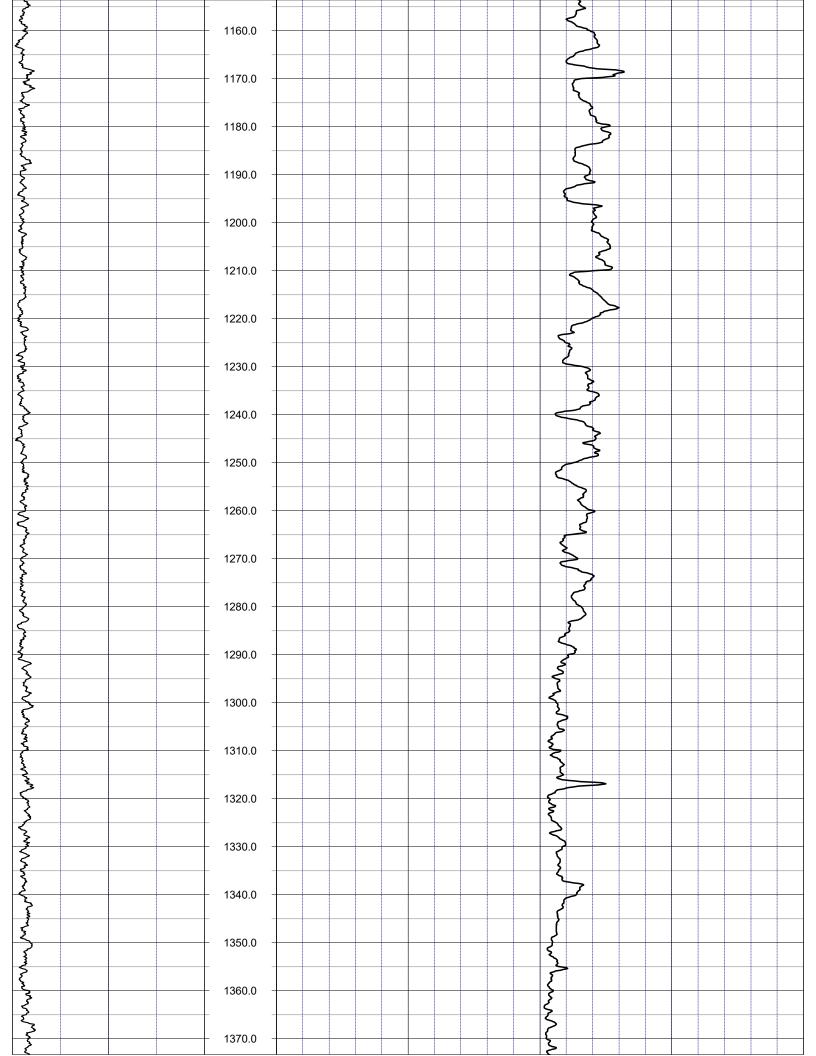


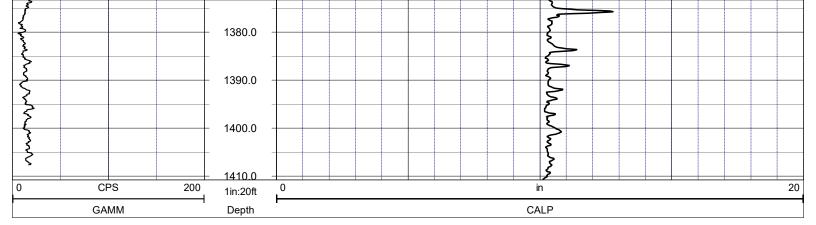












#### NOTES:

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8600 Oldbridge Lane Orlando, FL 32819 mobile ph 407-733-895

www.rmbal rob@rmbak

COMP

POF-32 POF-32

Geologist PG2186
Licensed Geology F PROFESSIONAL LICENSES

	733-8958  Ker.com  ker.com  SFWMD  HESPERIDES ROAD  SR 60 SUMICA  POLK  FL  USA    X	ROAD  X Y HDAT ELEV V DAT	ROAD  X Y HDAT ELEV V DAT	HEADER NOTES: HEADER NOTES:  ROAD  X Y H DAT ELEV V DAT ELEV V DAT	HEADER NOTES: HEADER NOTES:  ROAD  X Y H DAT ELEV V DAT ELEV V DAT	ROAD  X Y HDAT ELEV VDAT	HEADER NOTES:  HEADER NOTES:  ROAD  X Y H DAT ELEV V DAT V DAT	HEADER NOTES:  HEADER NOTES:  HEADER NOTES:  HOAD  ALL SERVICES:  VUDAT  ALL SERVICES:  NATURAL GAMMA ELECTRIC DUAL INDUCTION WATER QUALITY FLOWMETER SONIC VIDEO  ALDER SONIC VIDEO  REPRODES  Tivity RLN  deep induction conductivity	HEADER NOTES:  HEADER NOTES:  ALL SERVICES:  Y  ALL SERVICES:  CALIPER  NATURAL GAMMA ELECTRIC ELEV  V DAT  V DAT  V DAT  SONIC VIDEO  OG CODES
--	--	---------------------------	---------------------------	--	--	--------------------------	--	---	---

NO. RUN

9.875 BIT BOREHOLE R SRVC

RECORDED BY

DRILLER DEPTH-LOGGER DEPTH-DRILLER

WITNESSED BY

RUN No DATE

TYPE LOG

LOG MEASURED FROM PERMANENT DATUM:

DRILLING MEASURED

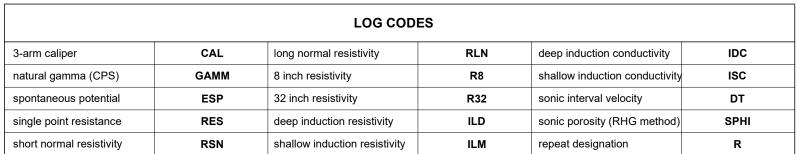
SEC TWP GDAT LONG

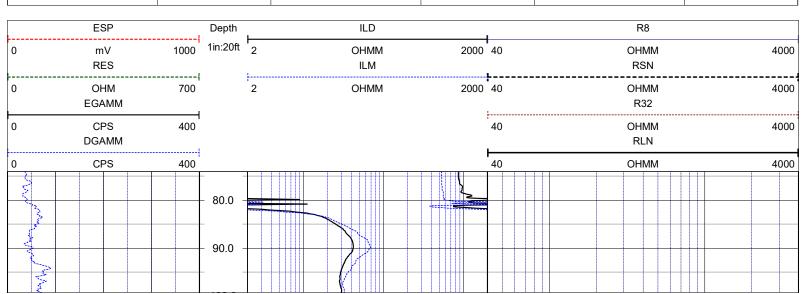
WGS84

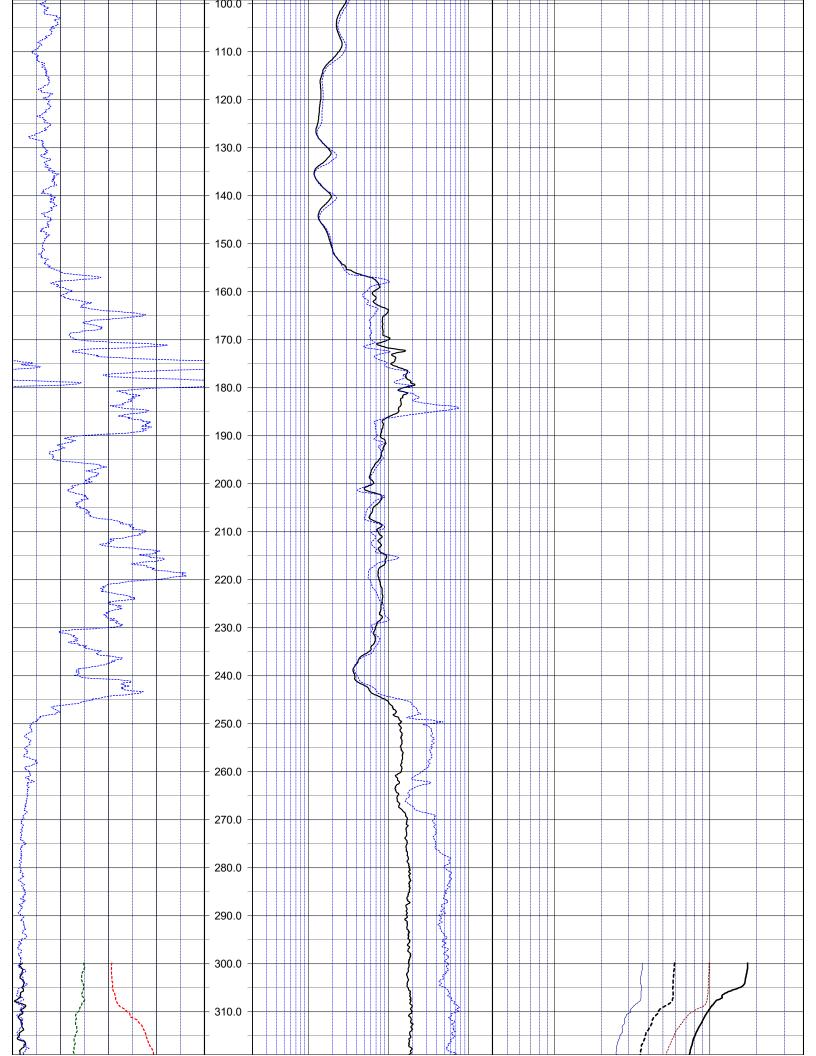
LATI

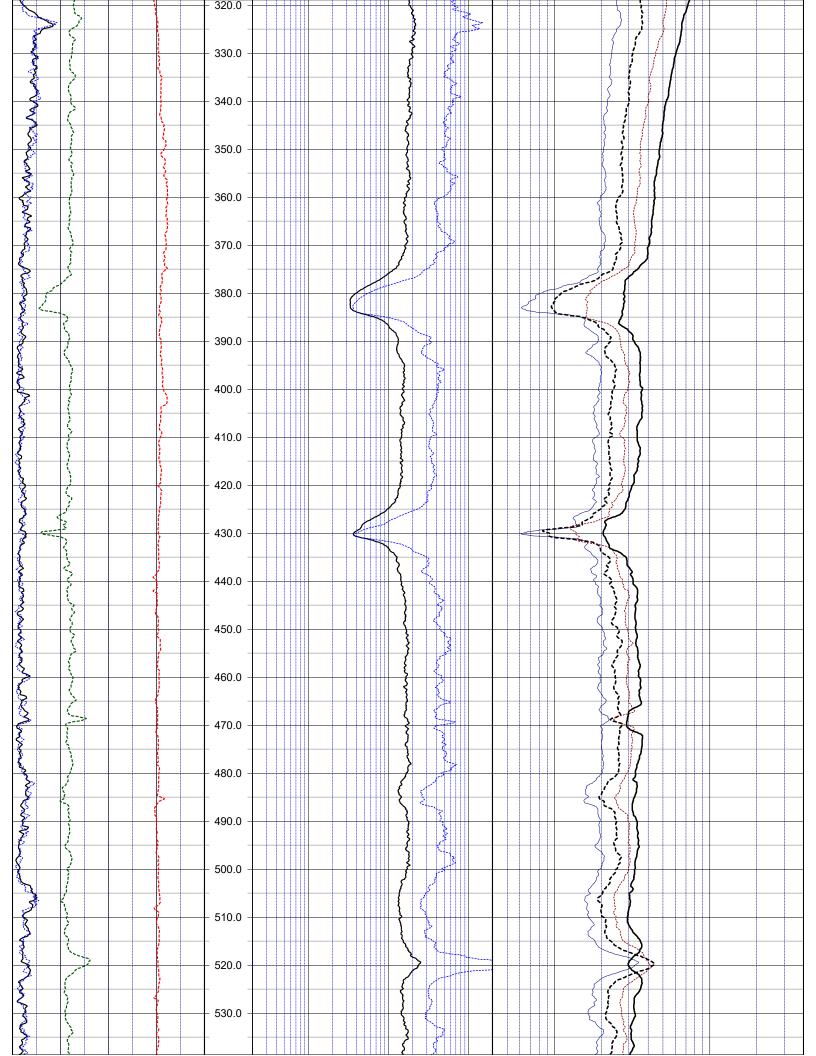
CTRY **PROV**  STAT CNTY FLD LOC

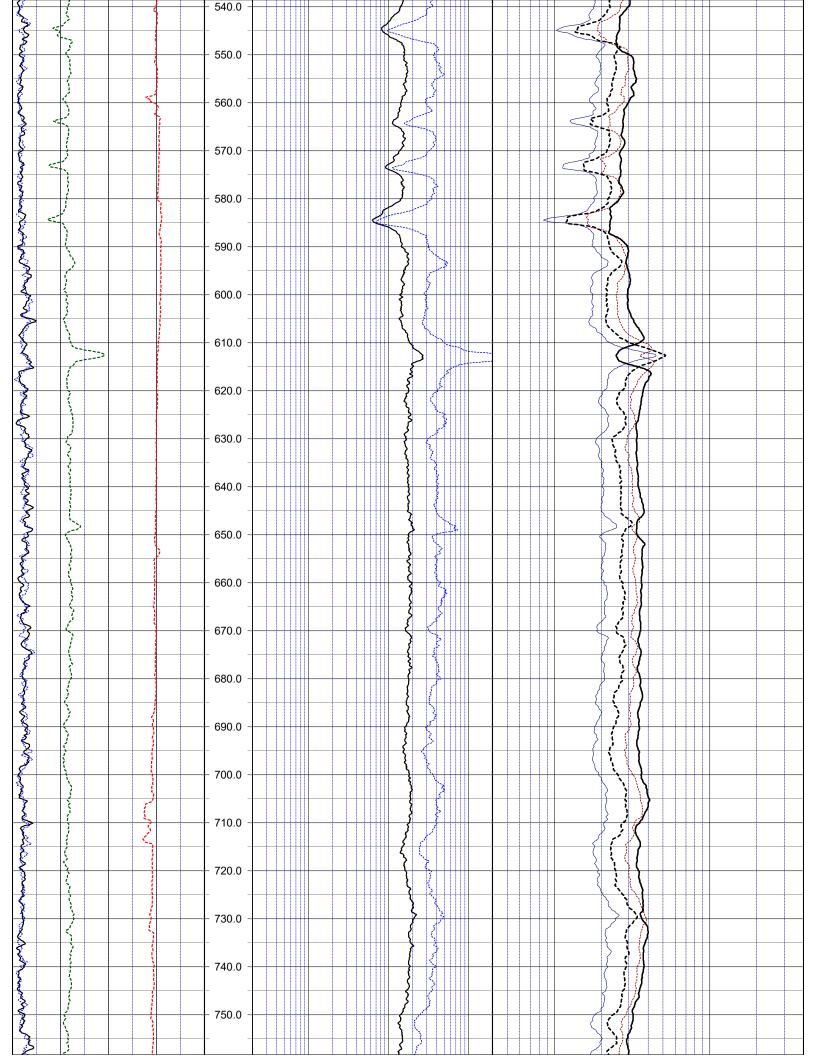
RGE

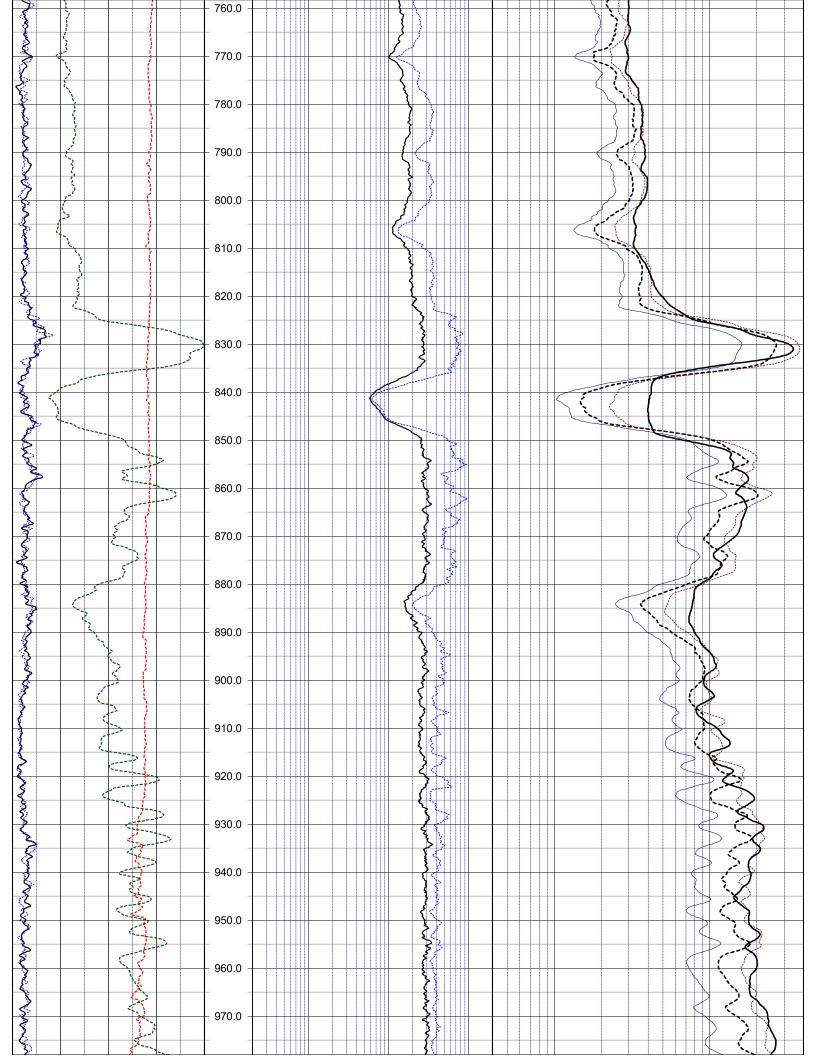


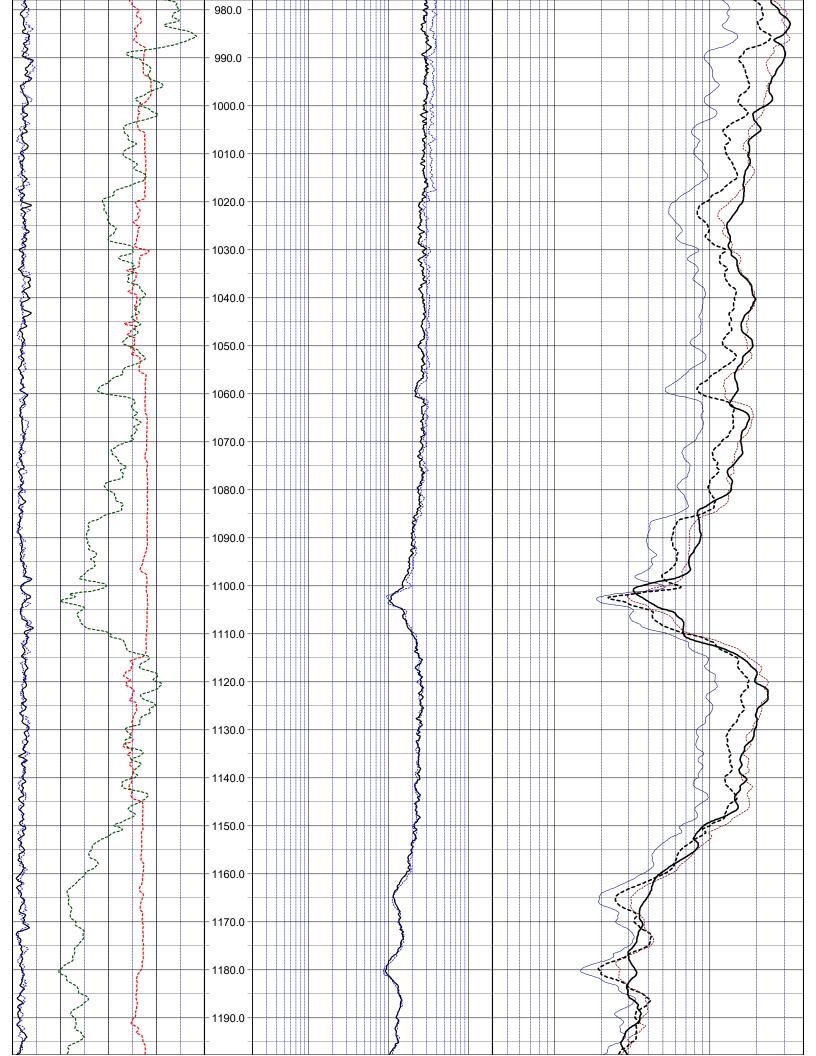


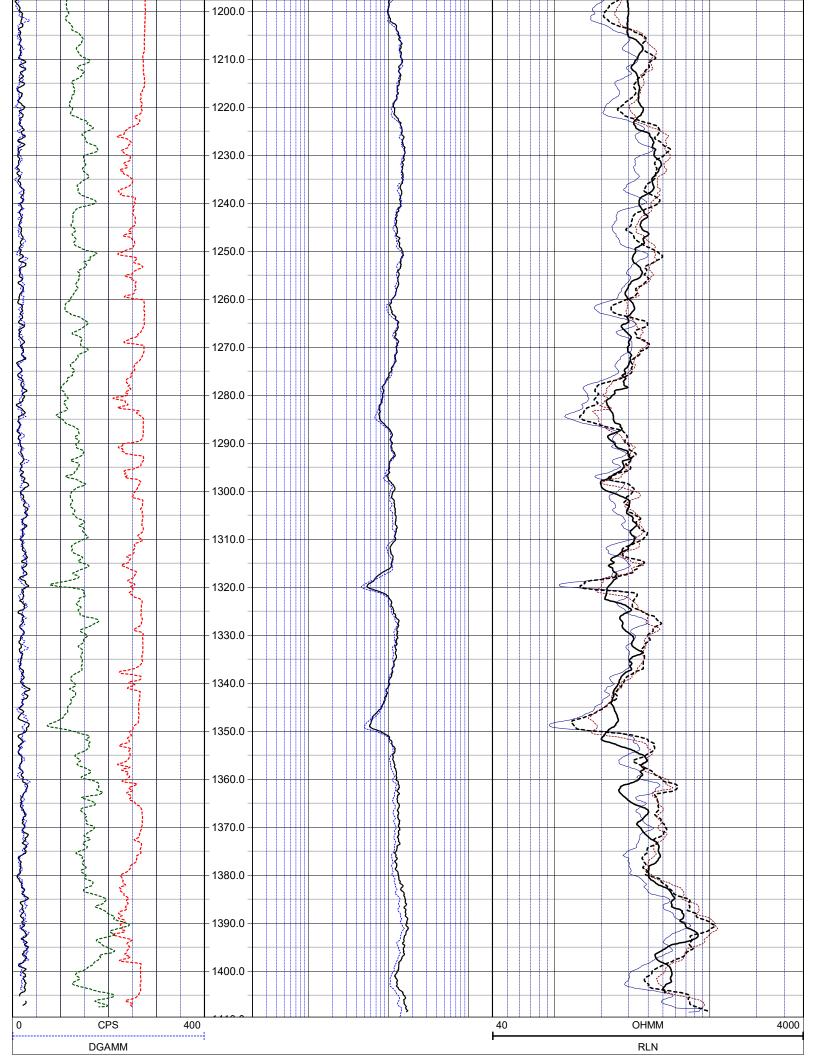












0	CPS	400					40	ОНММ	4000
	EGAMM					;		R32	
0	OHM	700		2	OHMM	2000	40	ОНММ	4000
	RES	'		1	ILM	•	ı	RSN	1
0	mV	1000	1in:20ft	2	ОНММ	2000	40	ОНММ	4000
	ESP	'	Depth		ILD			R8	

## NOTES:

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PROFESSIONAL	8800 Oldbridge Lane
UWI POF-32	Geology and Geophysics
WELL POF-32	

mobile ph 407-733-8958 Orlando, FL 32819

HEADER NOTES:

www.rmbaker.com rob@rmbaker.com

COMP

**SFWMD** 

LOC

Geologist PG2186 LICENSES

Licensed Geology Business

- PROJECT NOTES: -The spinner rate curves deflect to the positive direction with increasing flow from the well.
- -The spinner rate curves are not corrected for borehole diameter.
- -The well flowed naturally.

RUN

BOREHOLE RECORD

FROM

WITNESSED BY

SRVC RECORDED BY DRILLER DEPTH-LOGGER

RMB

RMBAKER LLC

API

N/A

Z X

**HUSS DRILLING** 

1412 1410

N0.

9.875 BIT

270

1412 To

SIZE 10

MAT. PVC

FROM

270 TO CASING RECORD

DATE

04 Nov 20

DRILLING MEASURED FROM:

LOG MEASURED FROM: TOP OF CASING

PERMANENT DATUM:

RUN No

TYPE LOG

FLOWMETER

PUMPING RATE (GPM)

N/A

BOTH

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

30

WATER

TYPE FLUID IN HOLE

DEPTH-DRILLER

 $_{\mathrm{dML}}$ SEC GDAT LONG

V DAT ELEV H DAT  $\prec$ 

ALL SERVICES:
CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
WATER QUALITY
FLOWMETER

SONIC

WGS84

LATI CTRY **PROV** 

**USA** 

RGE

STAT

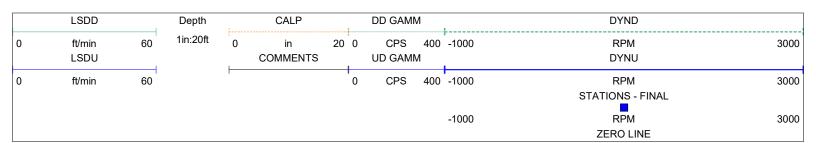
CNTY FLD

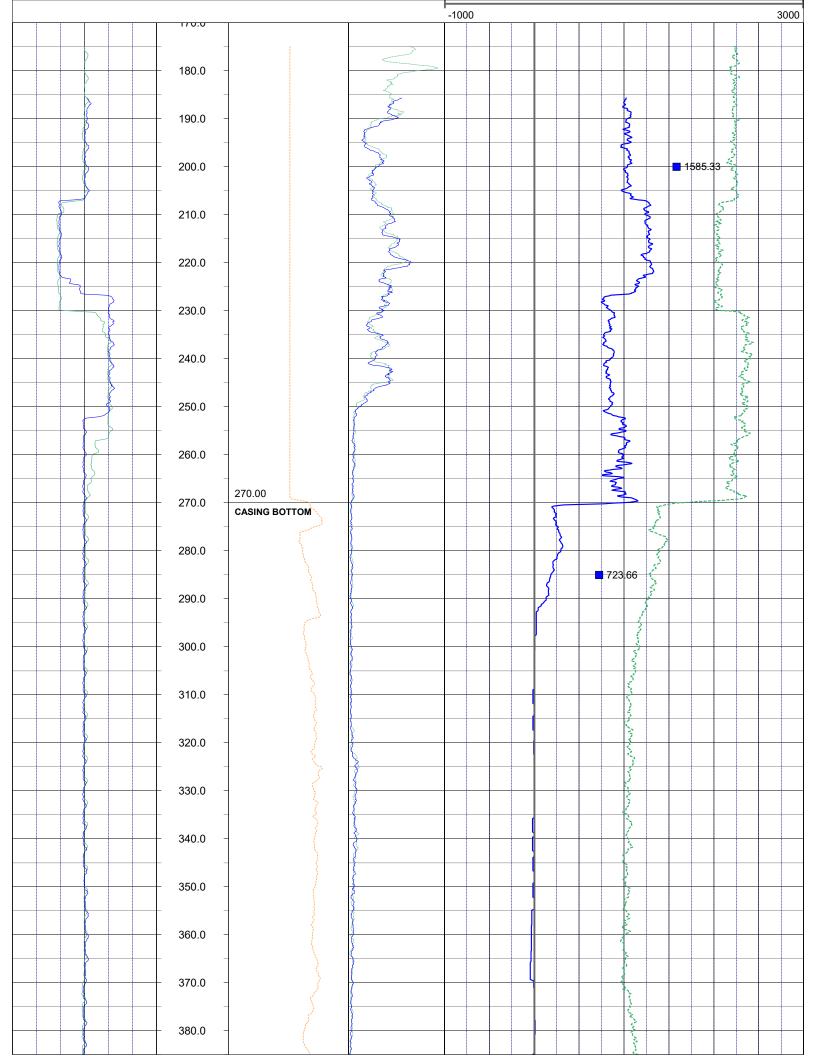
POLK

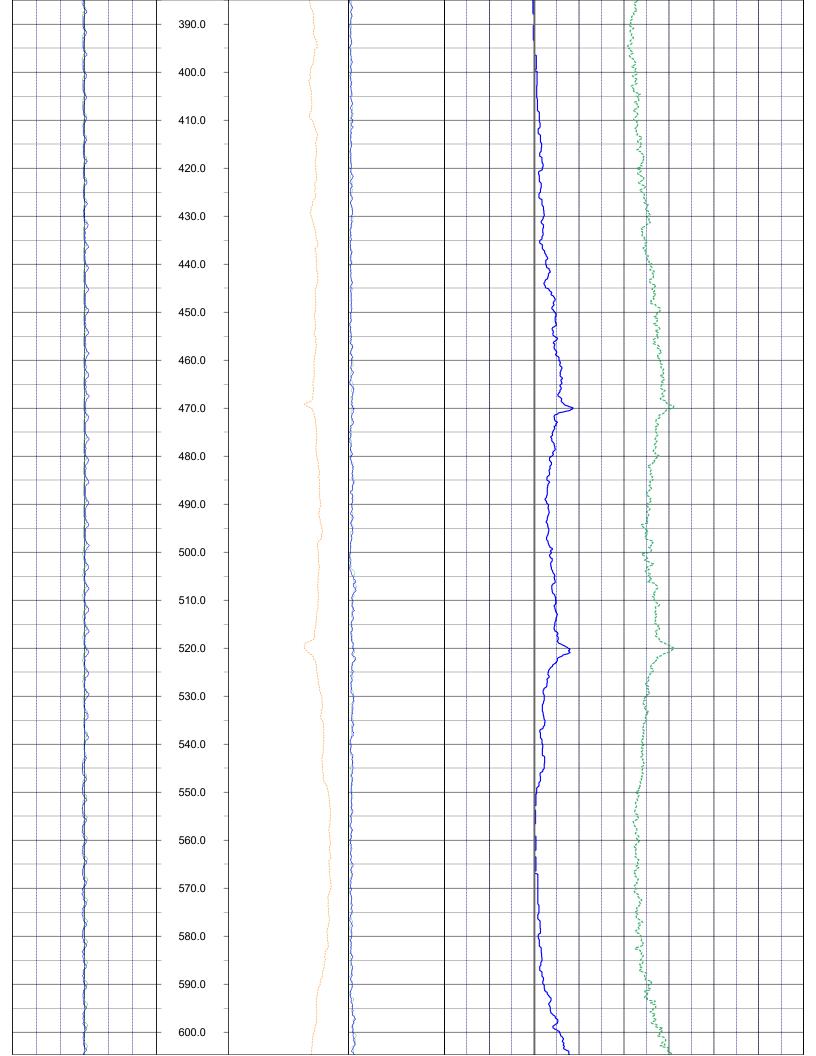
**SR 60 SUMICA** 

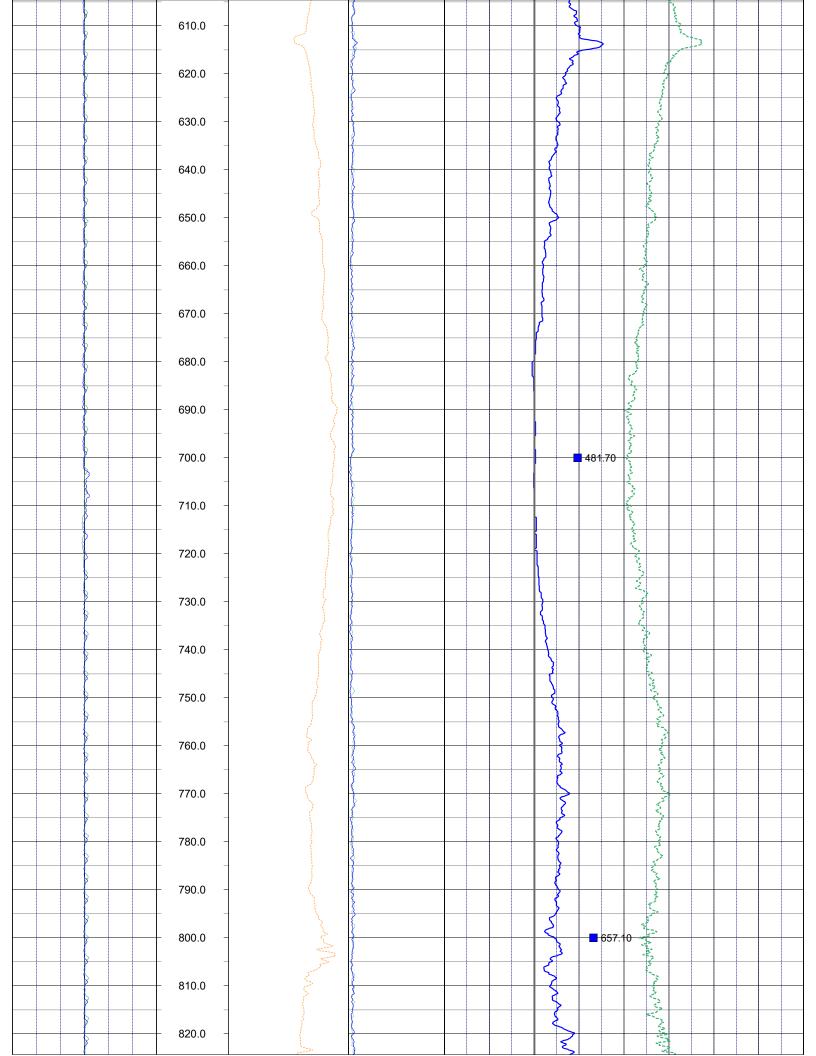
**HESPERIDES ROAD** 

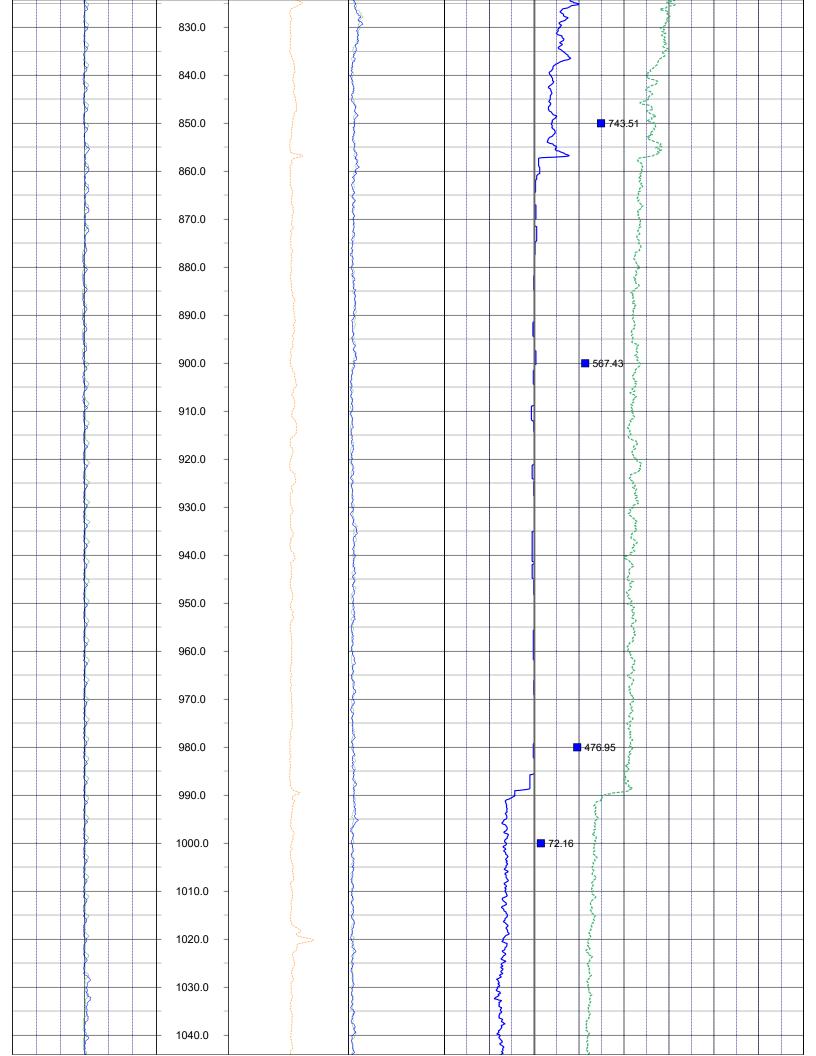
		FLOWMETER LOC	CODES		
down static spinner rate	FSD	down static line speed	LSSD	natural gamma (w/annot.)	GAMM
up static spinner rate	UTS	up static line speed	LSSU	caliper	CAL
down dynamic spinner rate	DYND	down dynamic line speed	LSDD	repeat designation	R
up dynamic spinner rate	DYNU	up dynamic line speed	LSDU	percent flow	PFLO
static station spinner rate	FSU	dynamic station spinner rate	FSP	GPM flow	GPMFLO

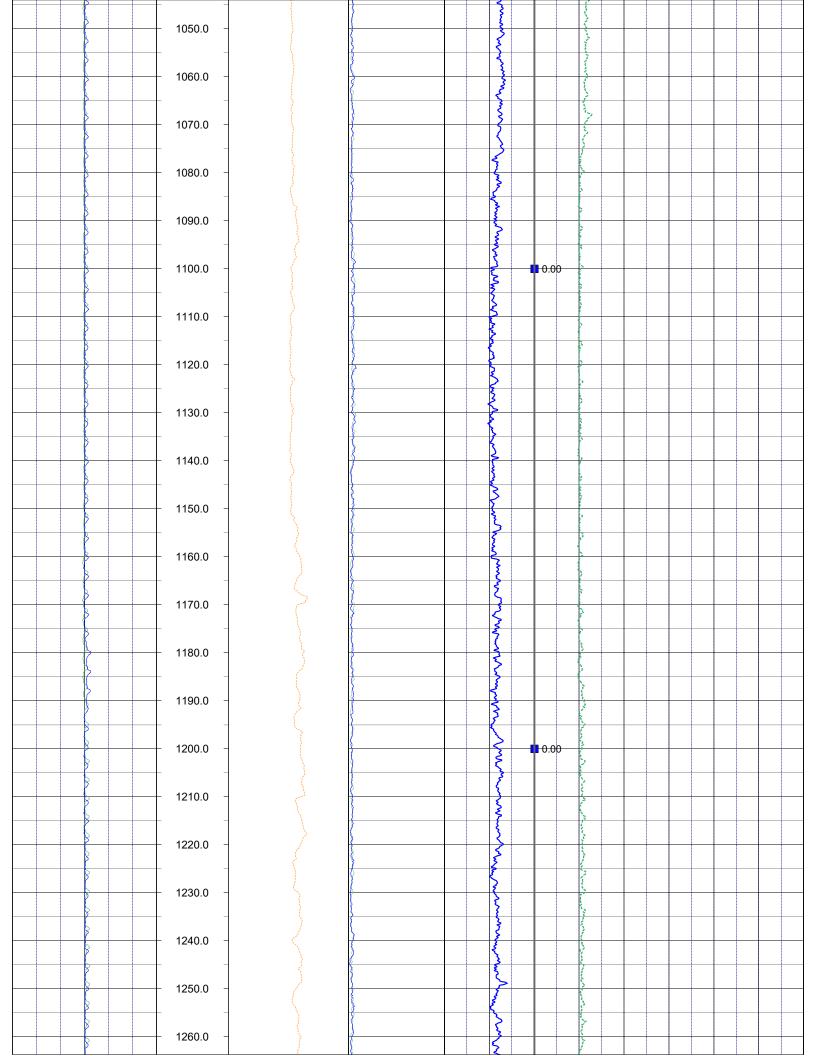


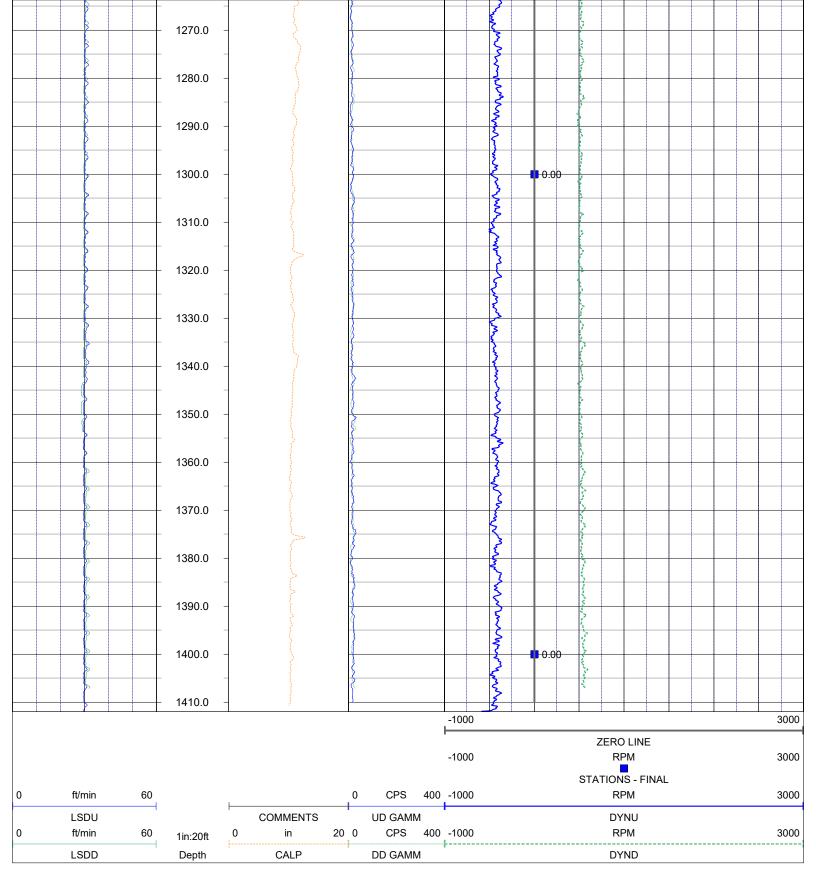










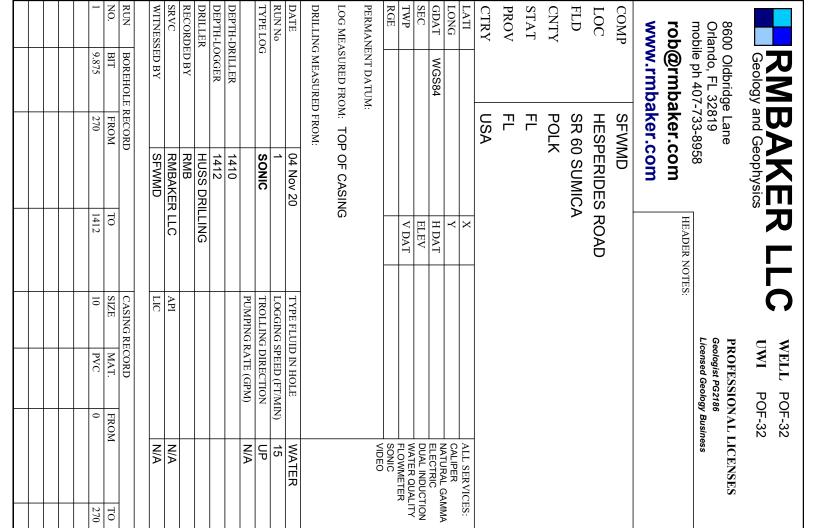


#### NOTES

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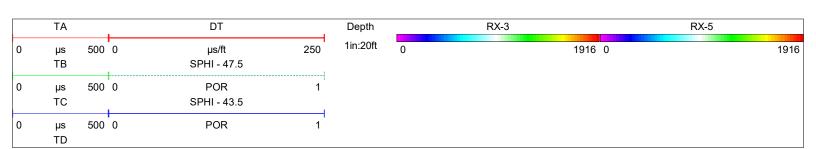
		LOG CODE	S		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

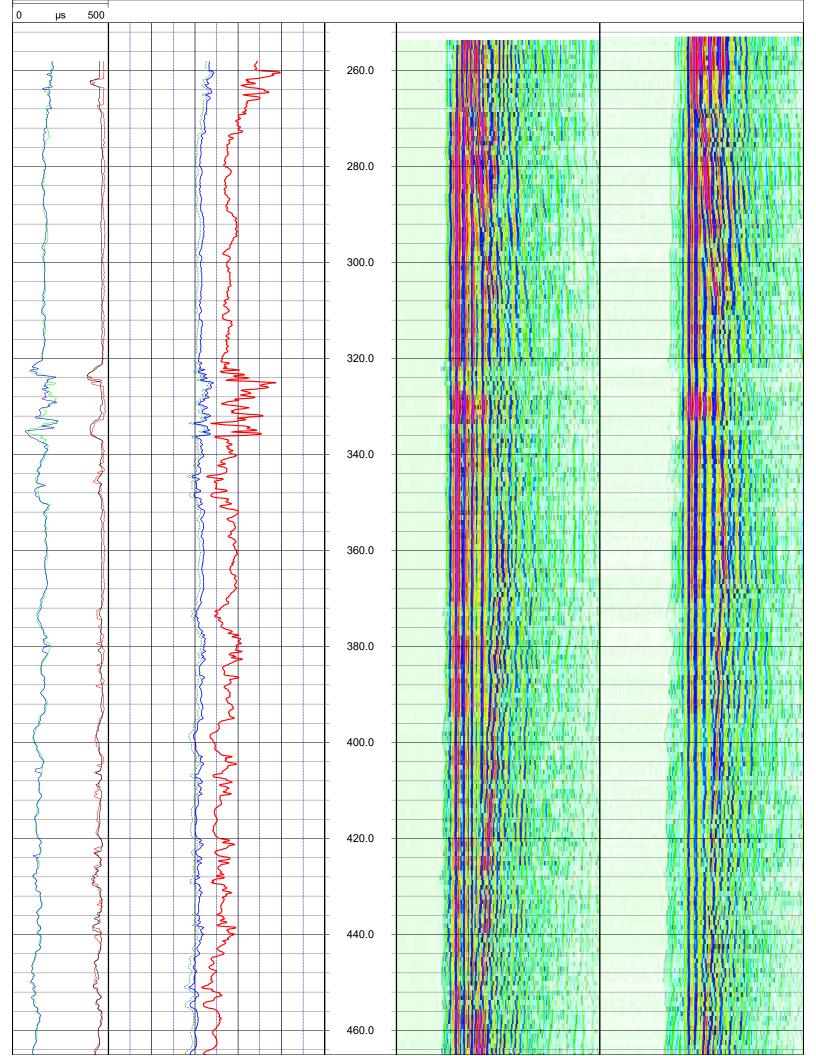
#### SONIC POROSITY:

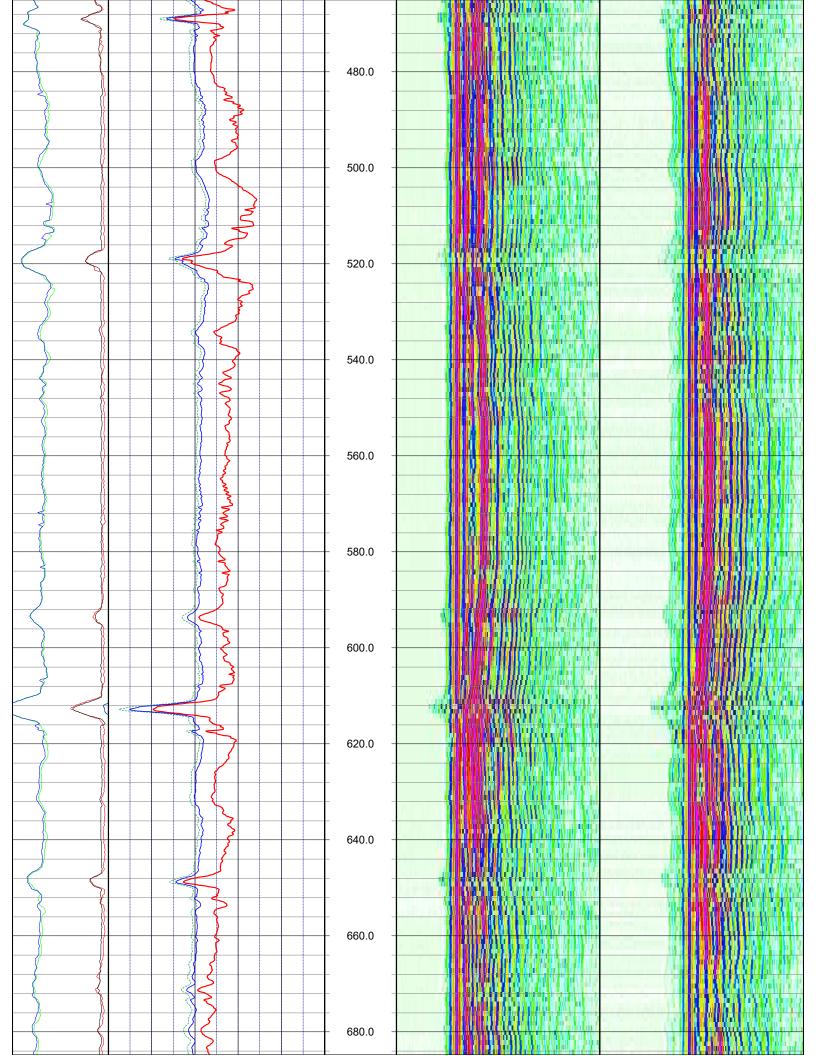
Assuming a carbonate formation, the porosity can be calculated using the Raymer-Hunt-Gardner (RHG) equation:

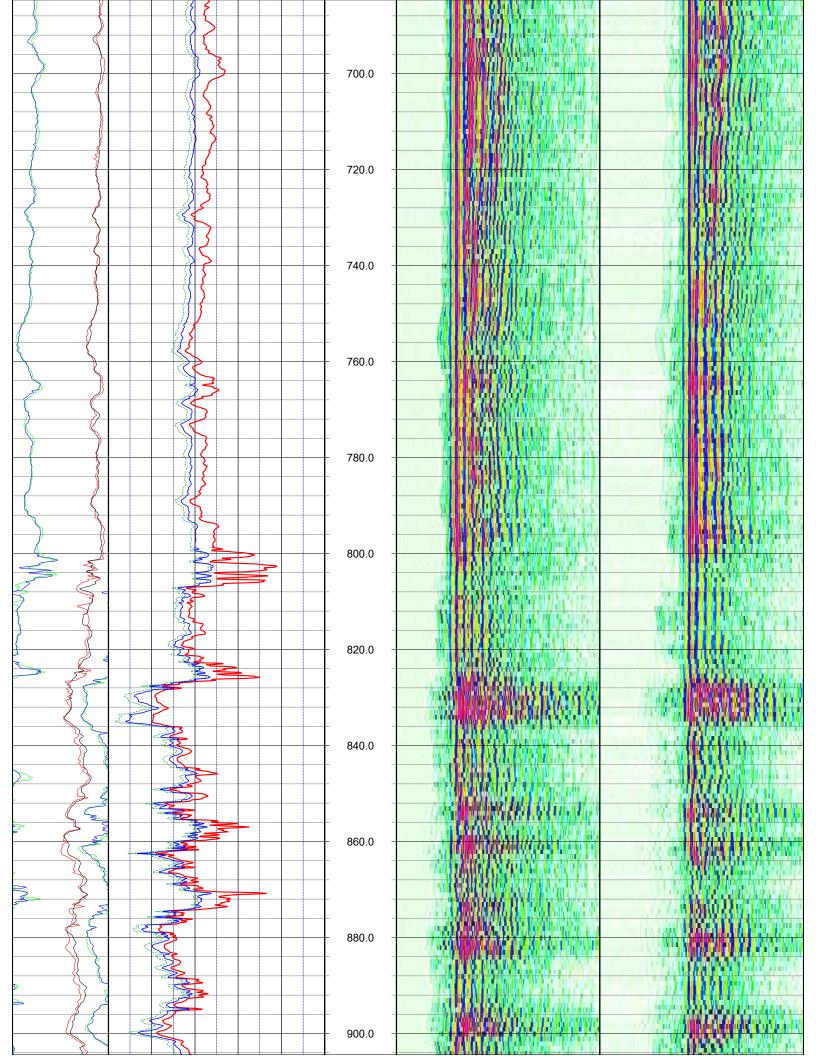
porosity= 5/8 x ([TT of log - TT of matrix] / TT of log), where "TT of log" is the measured sonic value and the "TT of matrix" is a constant.

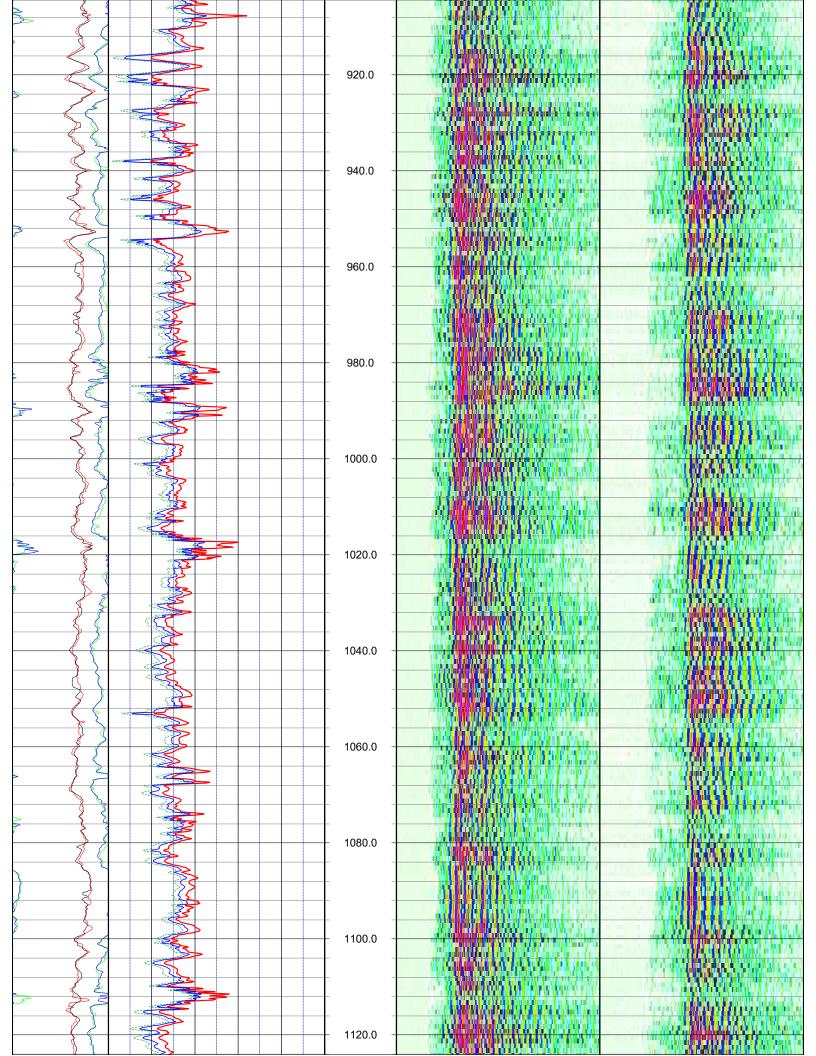
The TT of matrix for dolostone is 43.5 microseconds per foot, and for limestone is 47.5 microseconds per foot.

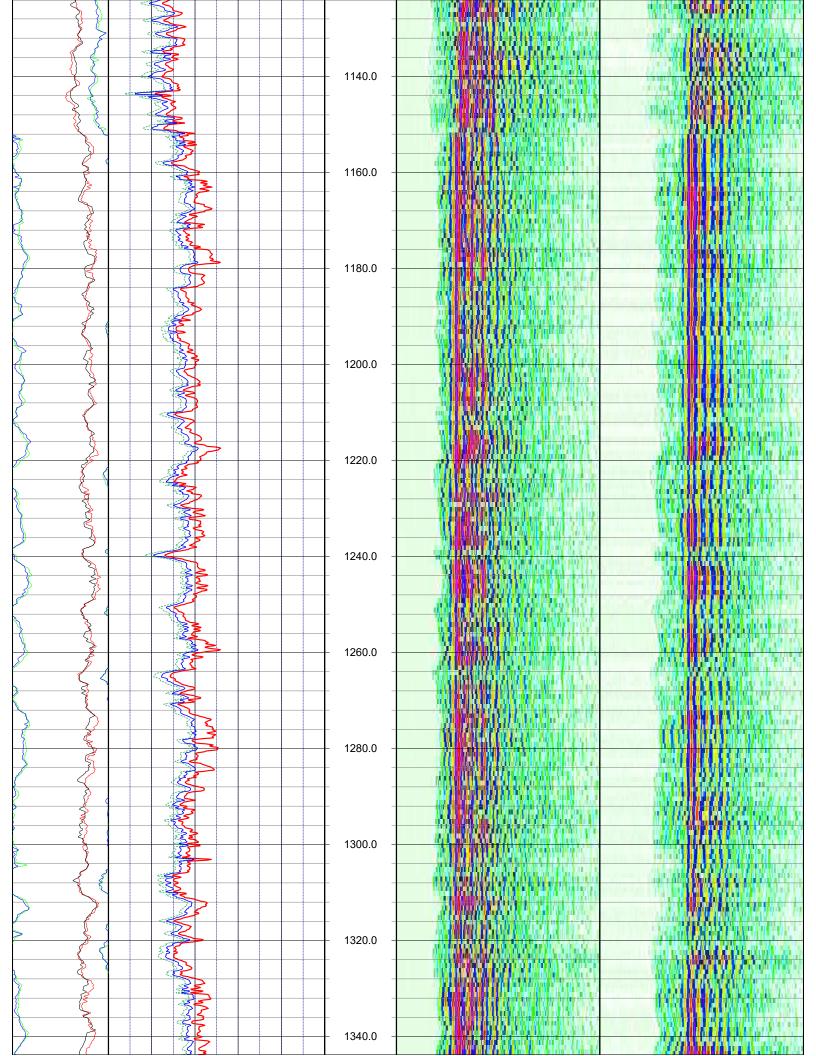


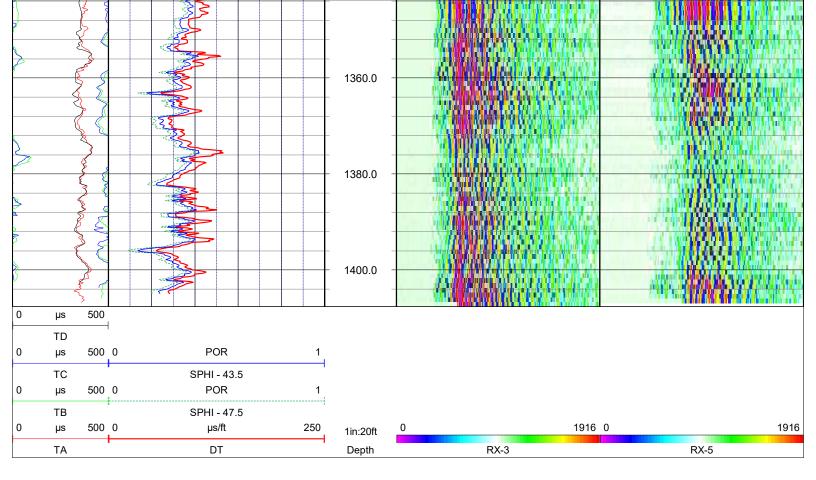












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8600 Oldbridge Lane Orlando, FL 32819 mobile ph 407-733-8958

www.rmbaker.com rob@rmbaker.com

COMP

SFWMD

LOC

WELL POF-32 POF-32

PROFESSIONAL LICENSES

HEADER NOTES: Geologist PG2186 Licensed Geology Business

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	9.875	BIT	30REHOL	SED BY		EDBY		OGGER	ORILLER					MEASURI	URED FR	ENT DATUM:				WGS84								
	270	FROM	BOREHOLE RECORD											G MEASURED FROM:	ом: ТО	Ĭ.							-	USA	꾸	끋	POLK	
			D	SFWMD	RMBAKER LLC	RMB	HUSS DR	1412	1410		WATER QUALITY	_	02 Nov 20		ASURED FROM: TOP OF CASING												<b>X</b>	
	1412	TO			R LLC		DRILLING				UALITY				ดิ			V DA1	ELEV	H DAT	3	<b>X</b>	×					
	10	SIZE	CASING RECORD	LIC	API					PUMPING	TROLLING	LOGGING	TYPE FLU															
	PVC	MAT.	ECORD							PUMPING RATE (GPM)	TROLLING DIRECTION	LOGGING SPEED (FT/MIN)	TYPE FLUID IN HOLE															
	0	FROM										<u>Z</u>																
		1		N/A	N/A					N/A	DOWN	30	WATER				SONIC	FLOWMETER	WATER QUALITY	ELECTRIC	NATURAL GAMMA	CALIBER	ALL SERVICES:					
	270	TO																Z)	FITY FITON		AMMA	CES.	CFS:					
																												_
														WA	TER	QU	AL	IT	Y L	0	G	C	OE	DES		1		_
static fluid tem	npe	ratı	ıre					TE	U			-	dyna	amic 1	fluid c	ondu	ctiv	ity					F	LCP	)		cali	ρe
									_			- 1								1			_					

RUN No DATE DRILLING MEAS LOG MEASUREI

TYPE LOG

NO. RUN WITNESSED BY

RECORDED BY DRILLER DEPTH-LOGGER DEPTH-DRILLEI

SRVC

		WATER QUALITY LO	OG CODES		
static fluid temperature	TEU	dynamic fluid conductivity	FLCP	caliper	CAL
dynamic fluid temperature	TEP	static differential cond.	DCOU	repeat designation	R
static differential temperature	DTEU	dynamic differential cond.	DCOP	natural gamma	GAMM
dynamic differential temp.	DTEP	static specific conductance	C25U	calibration correction	С
static fluid conductivity	FLCU	dynamic specific conductance	C25P		

RGE SEC GDAT LONG LATI

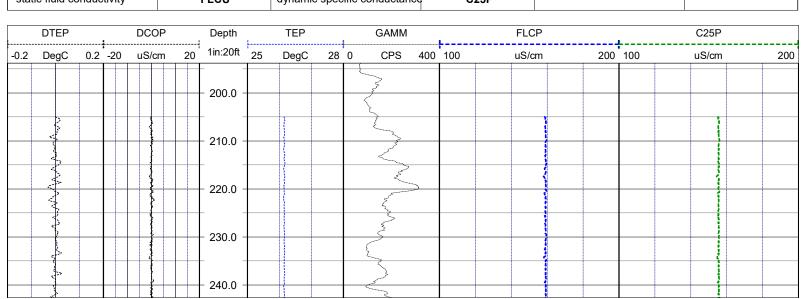
PERMANENT DA

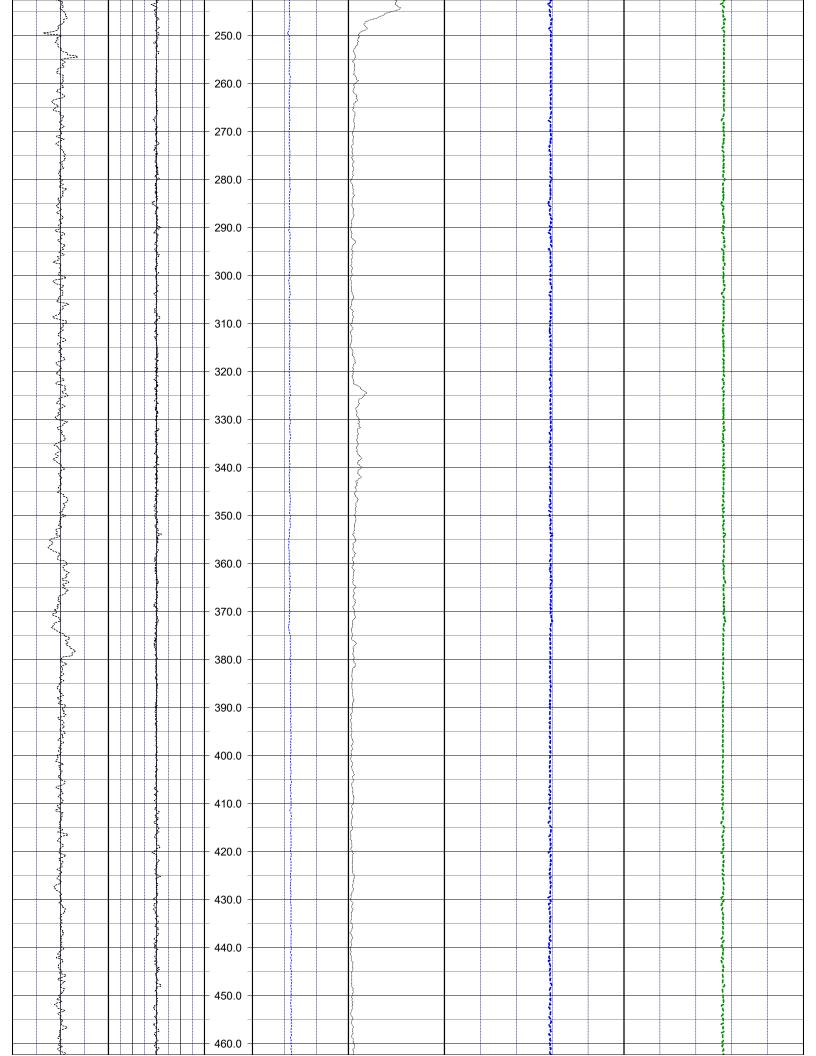
STAT CNTY FLD

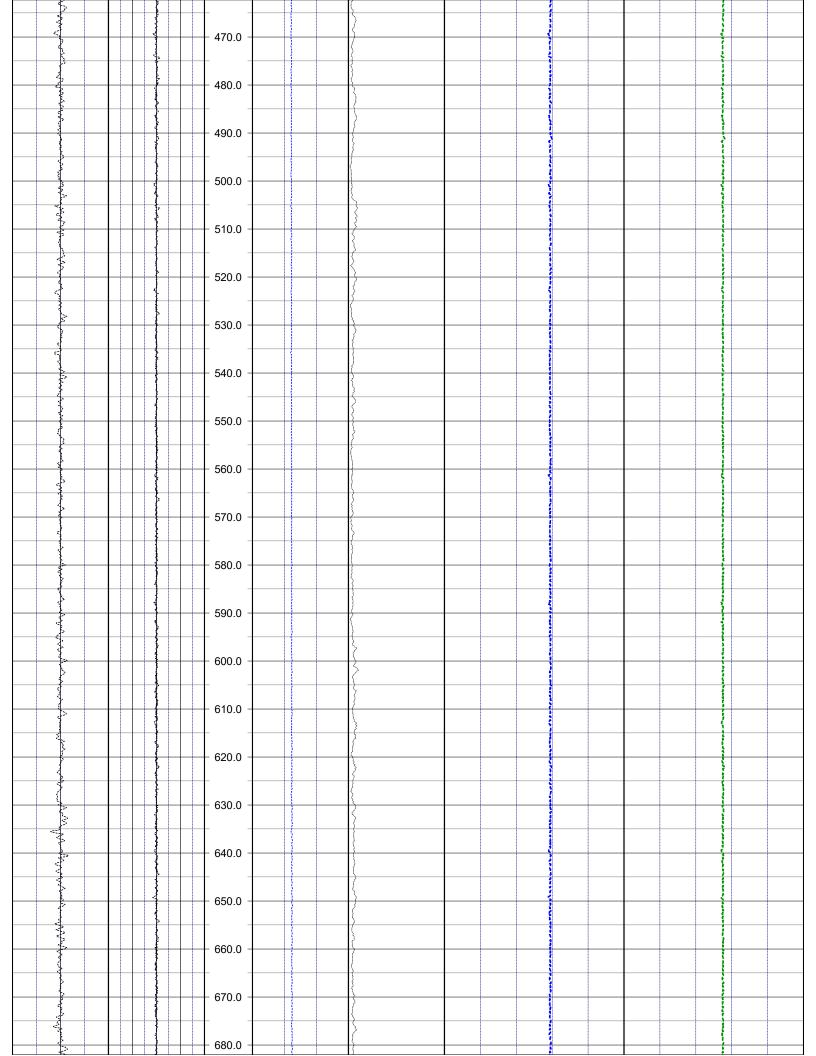
SR 60 SUMICA

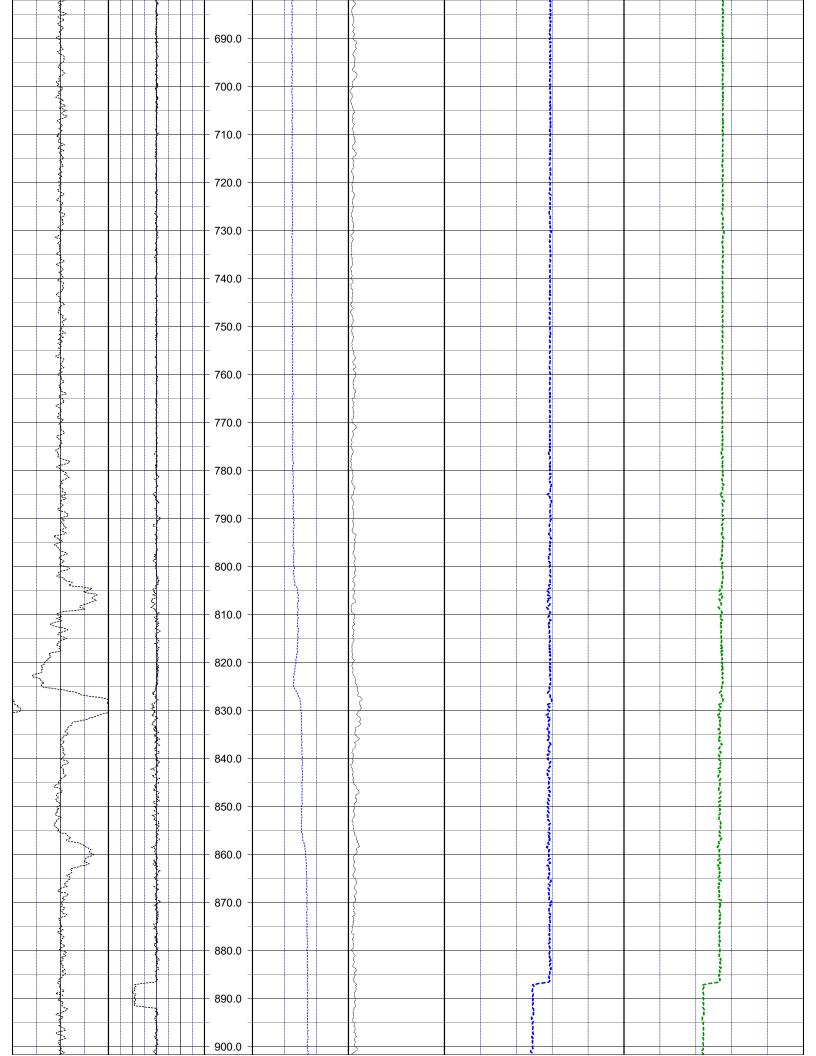
**HESPERIDES ROAD** 

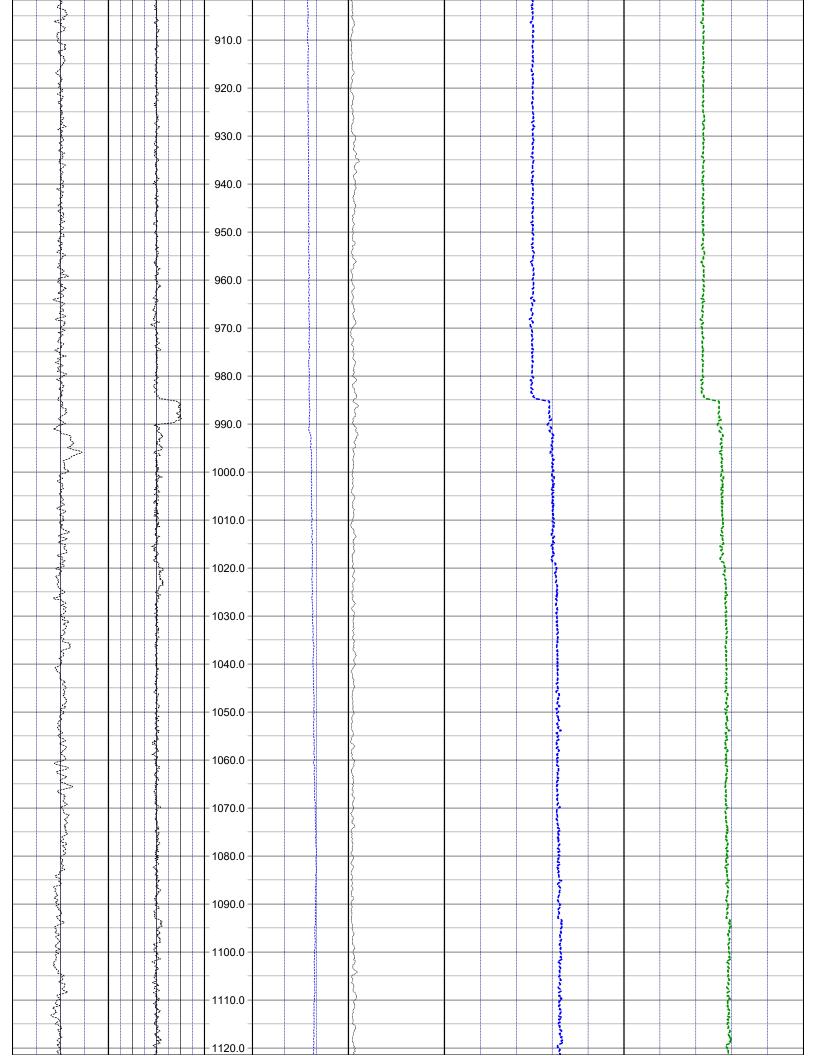
CTRY PROV

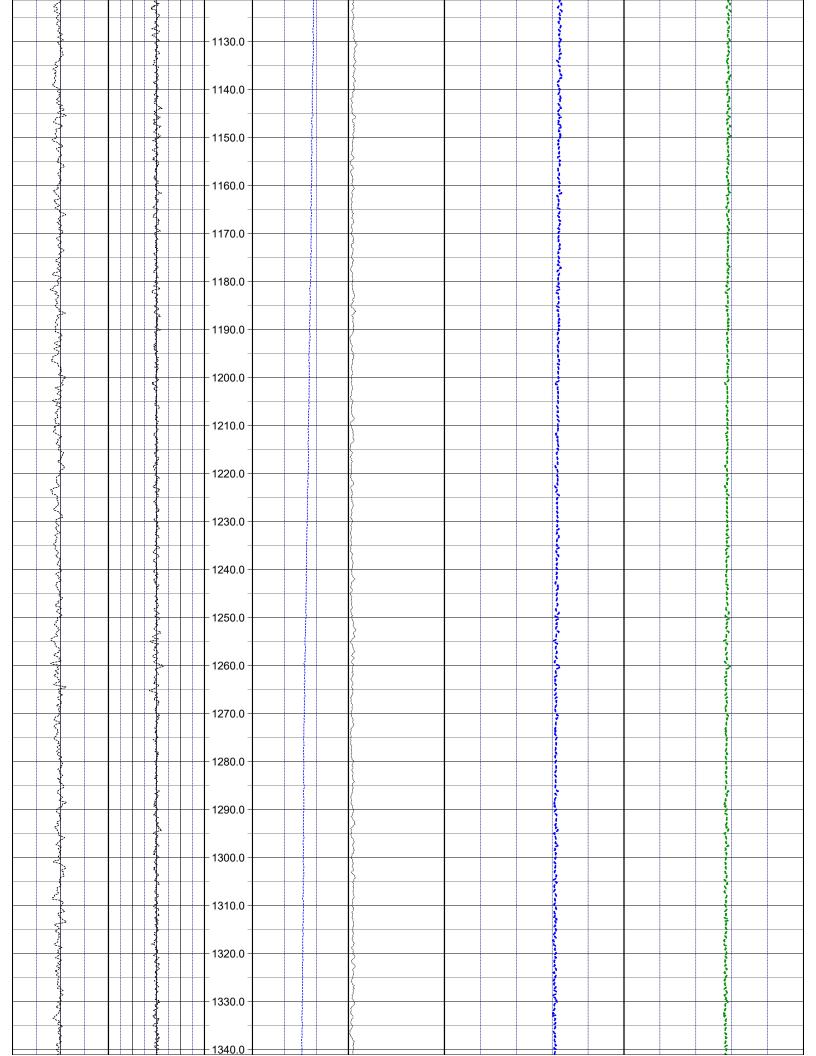


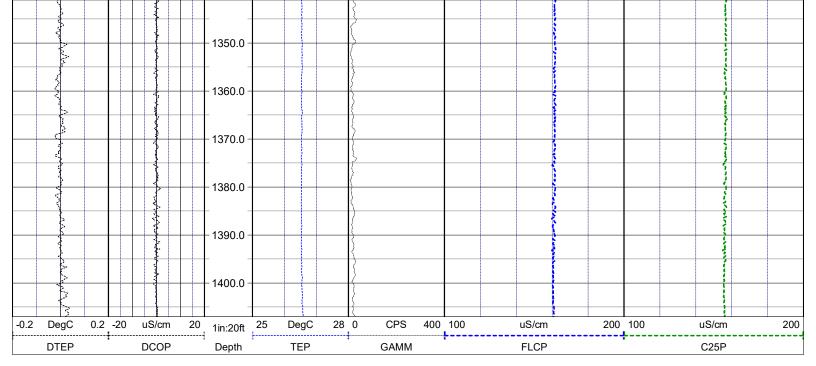












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8600 Oldbridge Lane Orlando, FL 32819 mobile ph 407-733-8958

www.rmbaker.com rob@rmbaker.com

COMP

LOC

WELL POF-32

	_	_	ᆜ策	<u> </u>										D \Z	:÷						_	_	_					<u> </u>	<u> </u>	. :	- 22 6	a)
1500	1407	FROM 270	FROM		SFWMD	RMBAKERIIC	HUSS DRILLING	1521-OBST.	2000		CALIPER	2	25 Dec 21	D FROM:							USA	끈	판	POLK	SR 60 SUMICA	HESPERIDES ROAD	SFWMD	aker.com	aker.com	-/	e Lane 2819	and Geophysics
2000	1500	1/1/2	7		(	R	RILLING	ST.						RFACE			V DAT	ELEV	H DAT	×					À	S ROAD				HEADER NOTES:		SICS FIN
	6	SILE	CASING RECORD		LIC	ΔPI				PUMPING	TROLLING	LOGGING	TYPEFLU																		- L	
	STEEL	MA1.	ECORD							PUMPING RATE (GPM)	TROLLING DIRECTION	LOGGING SPEED (FT/MIN)	TYPE FLUID IN HOLE																		PROFESSIONAL LIC Geologist PG2186 Licensed Geology Business	UWI PO
	0	n FKOM	3																												NAL 36 3y Bus	POF-32
		IM			N/A	N/A				N/A	UP	40	WATER			SONIC	WATER QUAL	DUAL INDUC	NATURAL GAMMA	ALL SERVICES:											PROFESSIONAL LICENSES Geologist PG2186 Licensed Geology Business	20 10
	1407	270	ð													ĺ		TION	MMA	ES:												
															LO	G (	COI	DE	S													
3-arm calipe	er							CA	L			lo	ng r	normal re	esistivi	ity					RLN			dee	p inc	ductio	on co	nduct	ivity		ID	С
natural gam	ıma	(CF	PS)					3AN				8	inch	n resistiv	ity						R8			sha	llow	indu	ction	cond	uctivi	ity	IS	
spontaneou								ES						ch resisti							R32						l velo			+	D	
single point					_			RE						induction				_			ILD							HG me	ethod	d)	SP	
short norma	al re	cicti	wit	,	- 1			DC	NI			1 0	าอแก	w induct	ion re	cictiv	/itv/				II M			ren	aat d	PSIC	natini	n		- 1		•

RGE SEC TWP GDAT LONG LATI CTRY PROV STAT CNTY FLD

WGS84

PERMANENT DATUM:

NO. RUN

BOREHOLE RECORD

5.875 9.875 BIT WITNESSED BY

RECORDED BY

SRVC

DRILLER DEPTH-LOGGER DATE

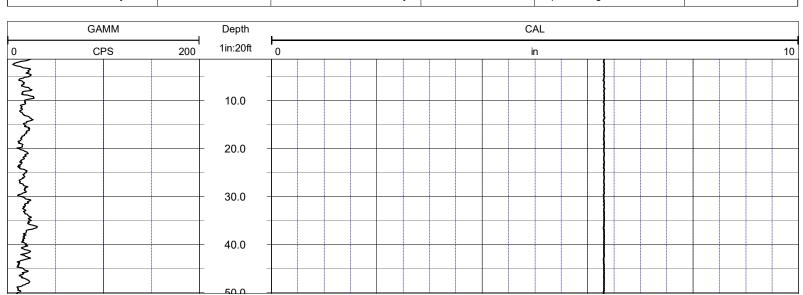
DRILLING MEASURED FROM:

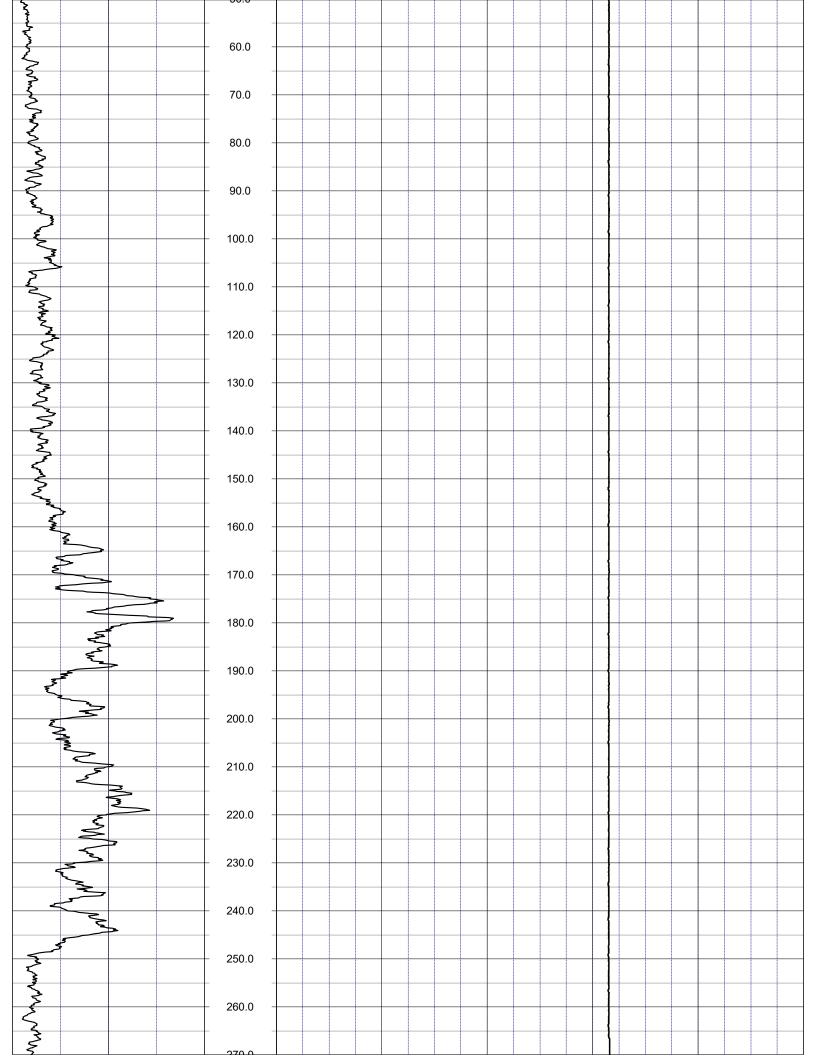
LOG MEASURED FROM: GROUND SU

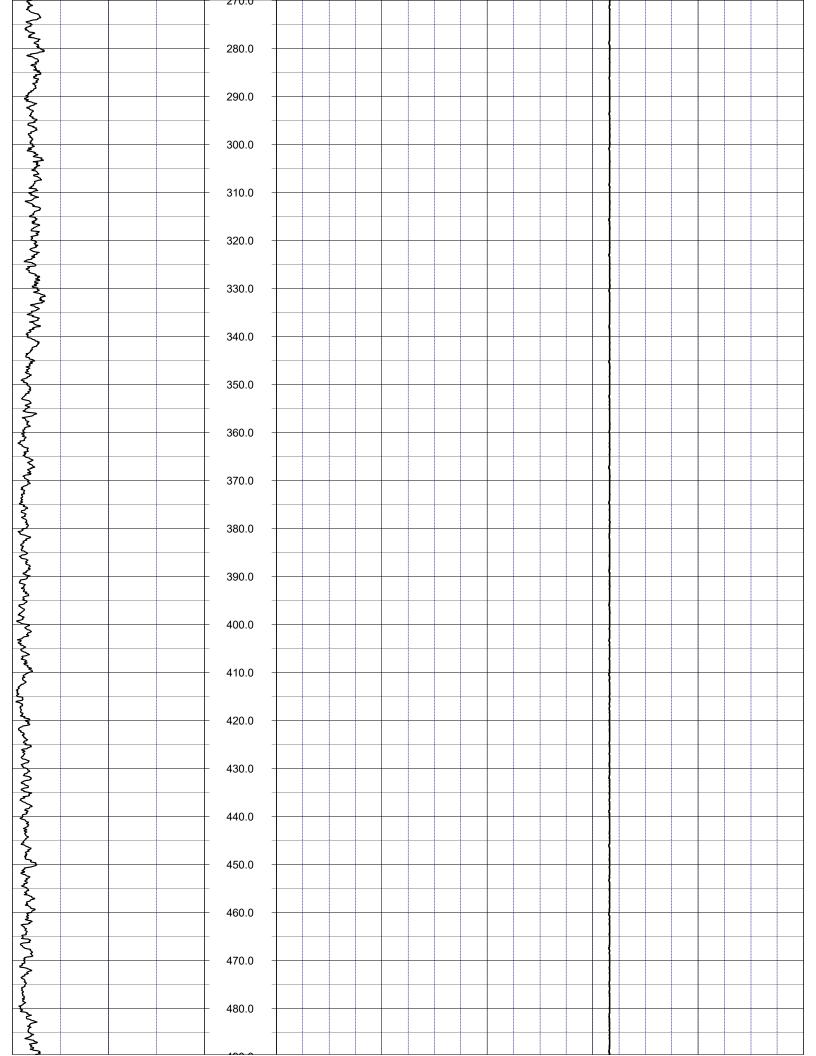
TYPE LOG RUN No

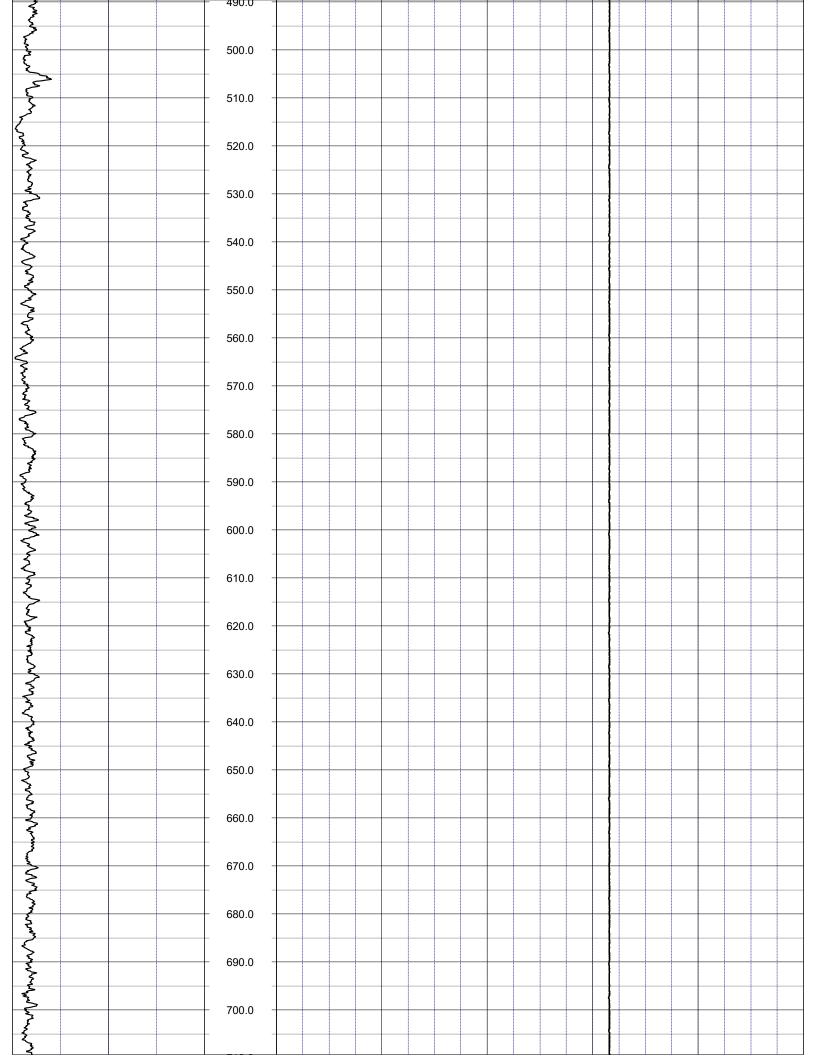
DEPTH-DRILLER

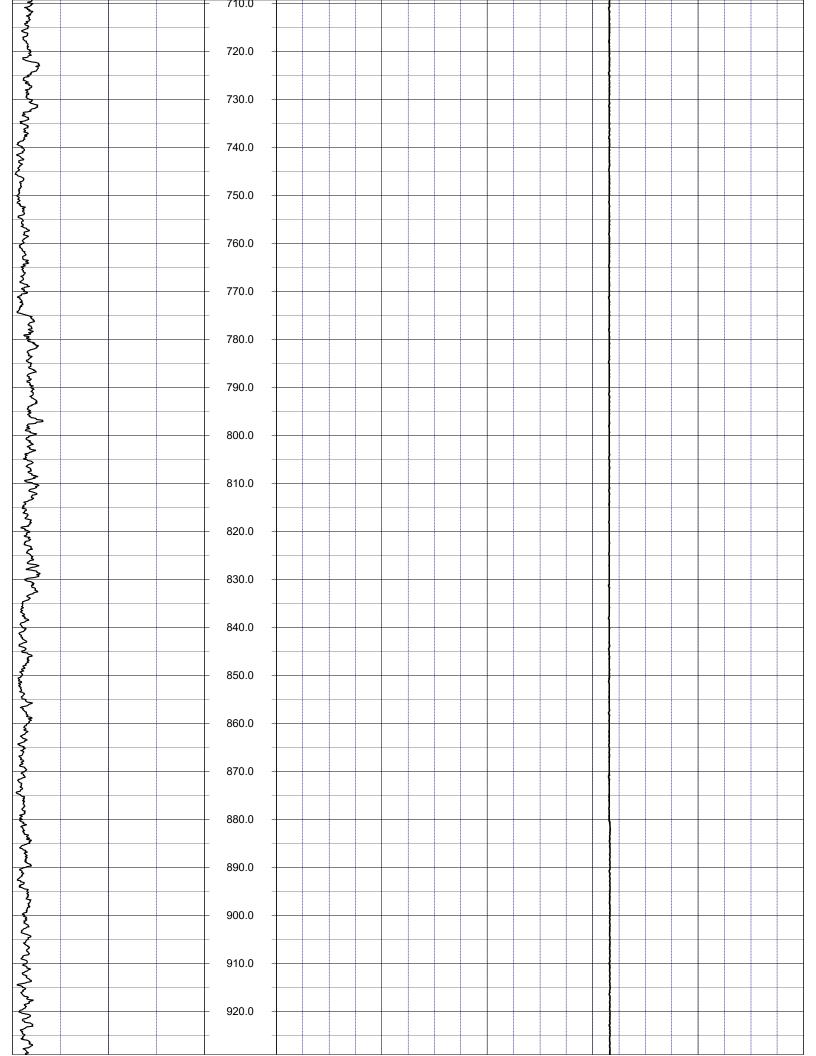
		LOG CODES			
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

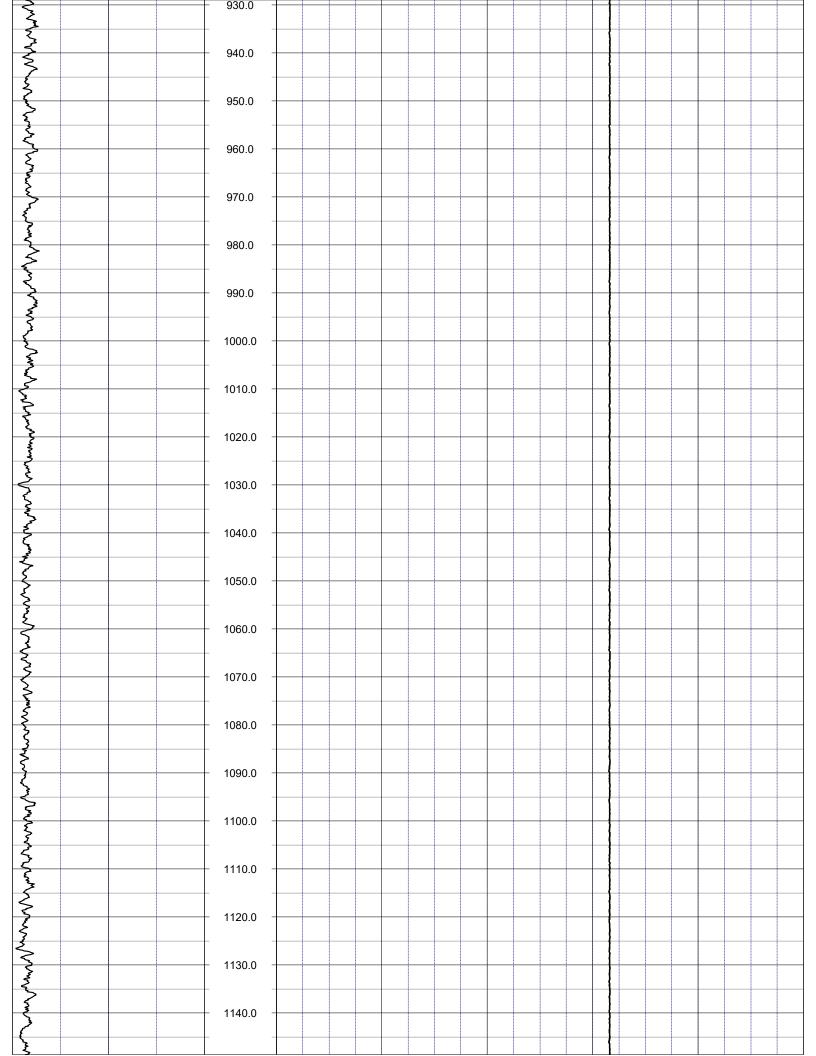


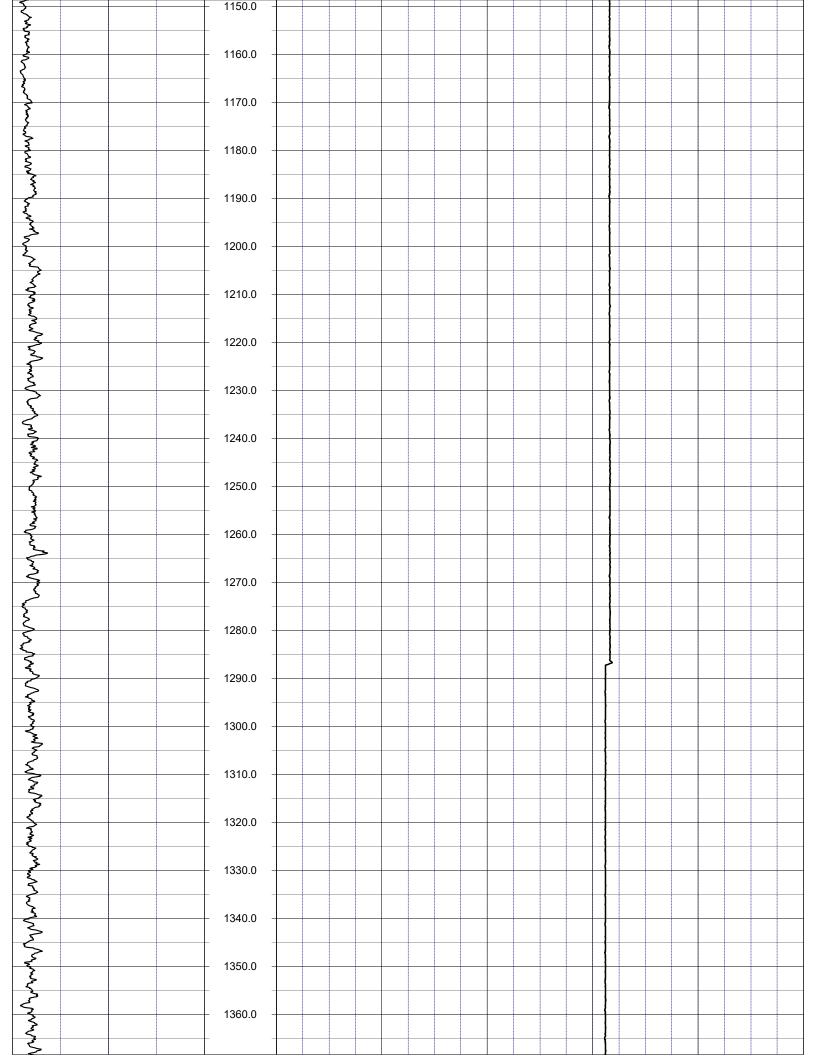


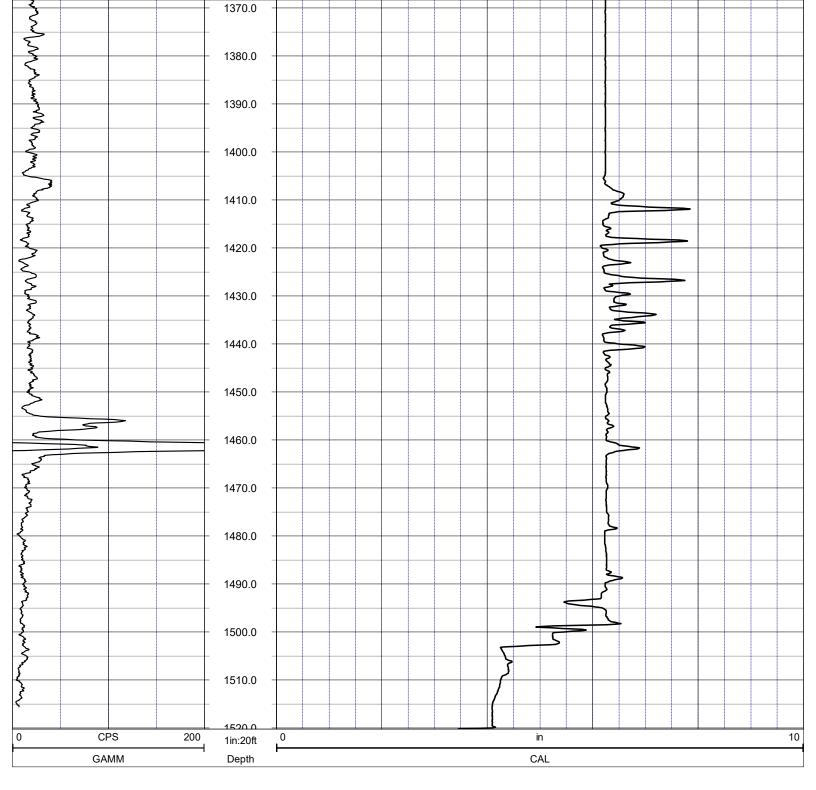












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COMP

SFWMD

WELL POF-32

1500

1500

1500

1500

R8

OHMM

RSN

OHMM

R32

OHMM

RLN

OHMM

2000	1500	1412	OT			₹ LLC	ILLING	Ä		C+DUIN			FACE	<u> </u>	:   ~	×	. >	RC	HE		· -
		10					JG			Ξ			V DAT V DAT	H DA1	3			ROAD	HEADER NOTES:		Γ
	6	10	SIZE	CASING RECORD	LIC	API			PUMPING	TROLLIN	LOGGING	TYPE FLU							OTES:		[
	STEEL	PVC	MAT.	ECORD					PUMPING RATE (GPM)	TROLLING DIRECTION	LOGGING SPEED (FT/MIN)	TYPE FLUID IN HOLE								PROFESSIONAL LICENSES Geologist PG2186 Licensed Geology Business	UWI PC
	0	0	FROM								<u>N</u>									NAL   6 y Busin	POF-32
			I I		N/A	N/A			Z	UP	30	WATER	WATER QUALITY FLOWMETER SONIC	ELECTRIC	NATURAL G	ALL SERVICES:				LICENSES	
	1407	270	ТО										2 TIV	H D N	AMMA	CES:					
													LOG COD	ES	3						
3-arm cali	iper						(	CAL			I	ong	normal resistivity				RLN deep indu	ction co	nductivity	ID	C
natural ga	mm	a (C	CPS	3)			G	AMI	М		3	3 inc	ch resistivity				R8 shallow in	duction	conductivity	IS	C
spontaneo	ous	pote	enti	ial				ESP			+		nch resistivity				R32 sonic inte		-		Т
single poir	nt re	sist	an	се				RES			-	deep	o induction resistivity				ILD sonic por	osity (RF	IG method)	SP	PHI
short norn	nal r	esi	stiv	ity			I	RSN			5	shal	low induction resistivity				ILM repeat de	signatior	1	F	₹

ILM

OHMM

ILD

OHMM

ILM#1

OHMM

ILD#1

OHMM

10000 0

10000 0

10000 0

10000 0

RGE SEC GDAT LONG

PERMANENT DATUM:

LOG MEASURED FROM: GROUND SURFACE

DRILLING MEASURED FROM:

STAT

**PROV** 

CNTY

POLK

**SR 60 SUMICA** 

**HESPERIDES ROAD** 

FLD LOC

LATI CTRY

USA

WGS84

N0. RUN

BOREHOLE RECORD

FROM

270

**ESP** 

RES

 $\mathsf{OHM}$ 

**EGAMM** 

CPS

DGAMM

CPS

DGAMM#1

CPS

0

0

0

Depth

1in:5ft

1400.0

1000

700

400

400

400

0.1

0.1

0.1

0.1

5.875 9.875 BIT

1407 1500

RUN No DATE

TYPE LOG

**ELECTRIC+DUIN** 

25 Dec 21

DRILLER

RMB

**HUSS DRILLING** 

1521-OBST

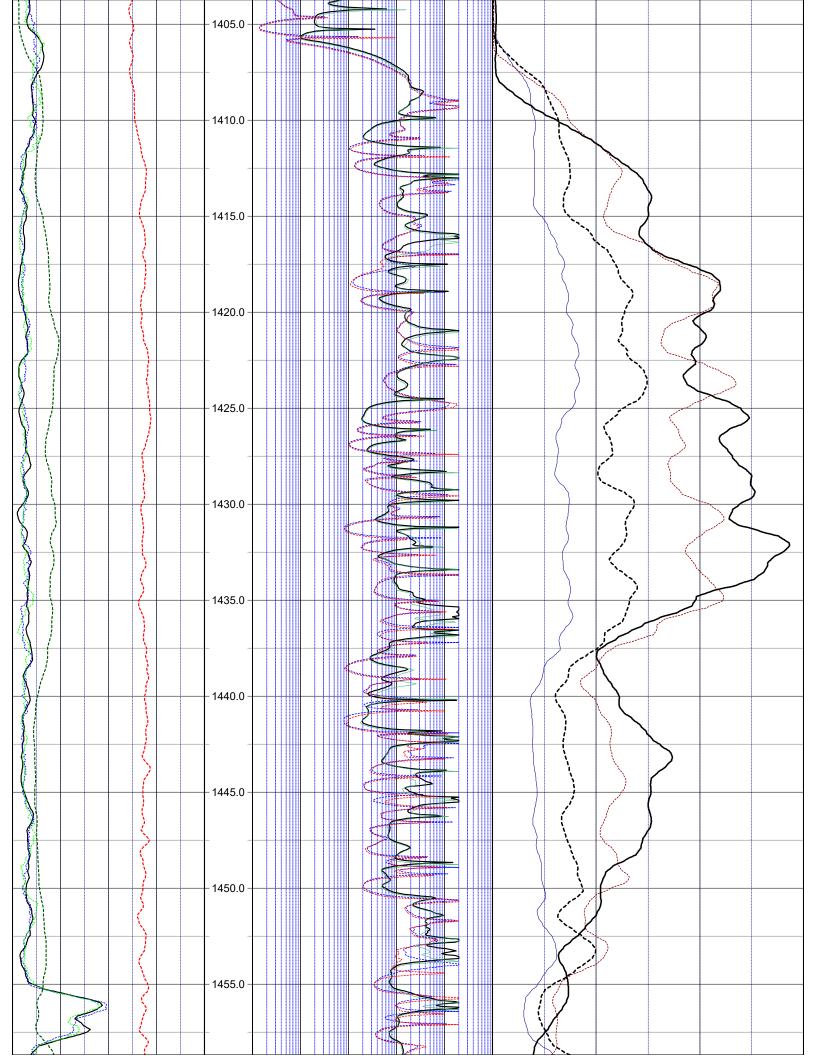
2000

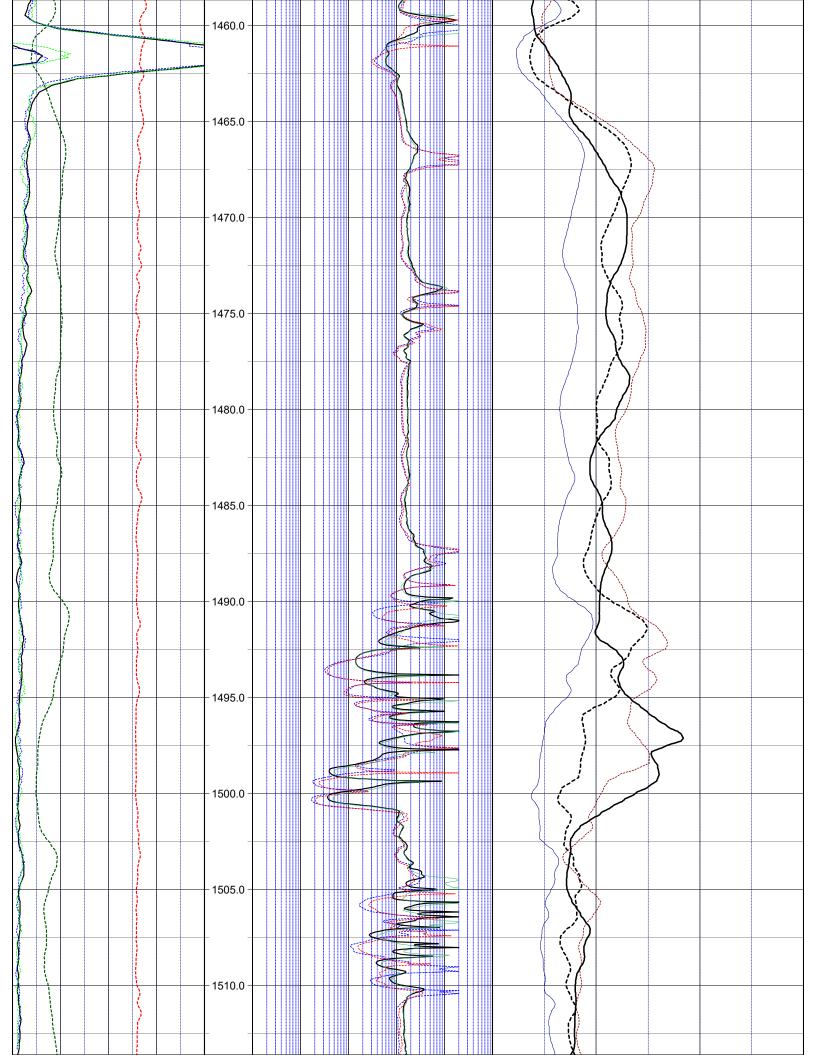
RMBAKER LLC

DEPTH-LOGGER **DEPTH-DRILLER** 

WITNESSED BY

SRVC RECORDED BY





(			- 1515.0 -				-		
0	CPS	400							
	DGAMM#1								
0	CPS	400		0.1	OHMM	10000	0	OHMM	1500
	DGAMM				ILD#1			RLN	
0	CPS	400		0.1	OHMM	10000		OHMM	1500
	EGAMM	1		ļ	ILM#1			R32	
0	OHM	700		0.1	OHMM	10000	0	OHMM	1500
	RES	i		1	ILD			RSN	
0	mV	1000	1in:5ft	0.1	ОНММ	10000	0	ОНММ	1500
	ESP	i	Depth		ILM			R8	

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POF-32

mobile ph 407-733-8958

Licensed Geology Business Geologist PG2186 PROFESSIONAL LICENSES

**SR 60 SUMICA HESPERIDES ROAD** HEADER NOTES:

		LOG CODES			
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

 $_{\mathrm{dML}}$ SEC GDAT

RGE

LONG

WGS84

ELEV H DAT 4  $|\times$ 

ALL SERVICES:
CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
WATER QUALITY
FLOWMETER

V DAT

LATI CTRY **PROV** 

USA

STAT CNTY FLD

POLK

COMP

**SFWMD** 

LOC

RUN No DATE

TYPE LOG

**ELECTRIC+DUIN** 

PUMPING RATE (GPM)

N/A

UР

LOGGING SPEED (FT/MIN) TYPE FLUID IN HOLE

30

WATER

TROLLING DIRECTION

25 Dec 21

DEPTH-DRILLER

2000

DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

N0. RUN

BOREHOLE RECORD

5.875 9.875 BIT

1407 270 FROM

1500

2000

1412 1500

TO

SIZE 10

MAT.

FROM

STEEL PVC

1407 270 To CASING RECORD

WITNESSED BY

SFWMD

LIC API

N N

Z X

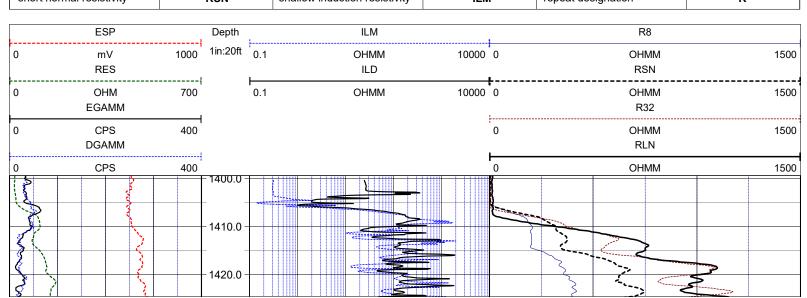
RMBAKER LLC

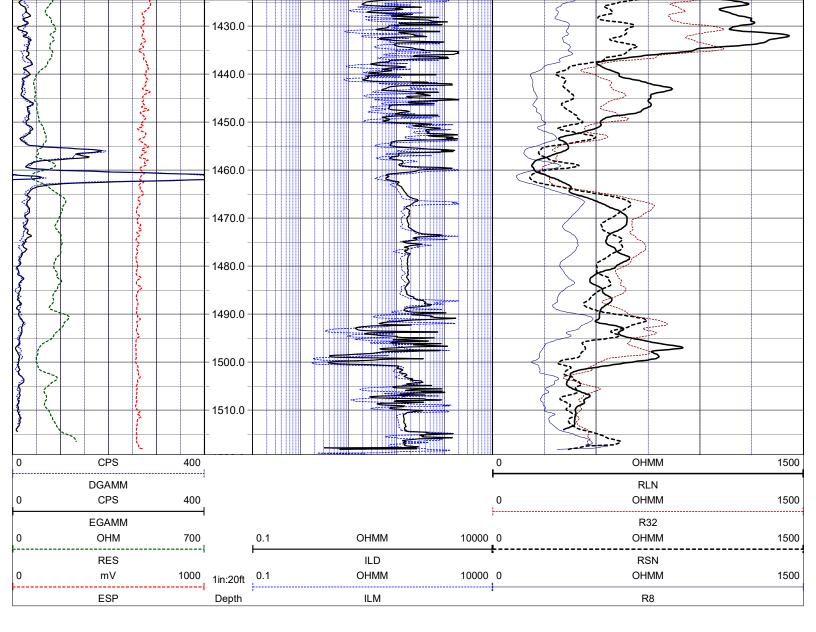
SRVC RECORDED BY DRILLER DEPTH-LOGGER

RMB

**HUSS DRILLING** 

1521-OBST





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COMP

**SFWMD** 

LOC

POF-32 POF-32

# Licensed Geology Business Geologist PG2186 PROFESSIONAL LICENSES

- PROJECT NOTES: -The spinner rate curves deflect to the positive direction with increasing flow from the well.
- -The spinner rate curves are not corrected for borehole diameter.

N/A

Z X

-The well was not pumped and did not flow at the surface.

RUN

BOREHOLE RECORD

SRVC RECORDED BY DRILLER DEPTH-LOGGER

RMB

RMBAKER LLC

LIC API **HUSS DRILLING** 

1521-OBST

WITNESSED BY

NO.

5.875 9.875 BIT

1407 1500

2000

270 FROM

1412 1500

To

SIZE 10

MAT.

STEEL PVC

> 0 FROM

270 TO

1407

CASING RECORD

		FLOWMETER LO	G CODES		
down static spinner rate	FSD	down static line speed	LSSD	natural gamma (w/annot.)	GAMM
up static spinner rate	UTS	up static line speed	LSSU	caliper	CAL
down dynamic spinner rate	DYND	down dynamic line speed	LSDD	repeat designation	R
up dynamic spinner rate	DYNU	up dynamic line speed	LSDU	percent flow	PFLO
static station spinner rate	FSU	dynamic station spinner rate	FSP	GPM flow	GPMFLO

TWP SEC GDAT

RGE

LONG

WGS84

ELEV H DAT  $\prec$ 

ALL SERVICES:
CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
WATER QUALITY
FLOWMETER

V DAT

LATI CTRY **PROV** 

**USA** 

STAT

CNTY FLD

POLK

**SR 60 SUMICA** 

**HESPERIDES ROAD** 

RUN No DATE DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

TYPE LOG

FLOWMETER

PUMPING RATE (GPM)

N/A

BOTH

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

20

WATER

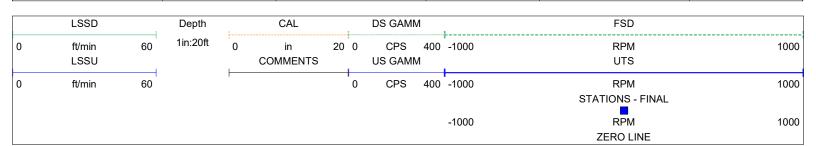
TYPE FLUID IN HOLE

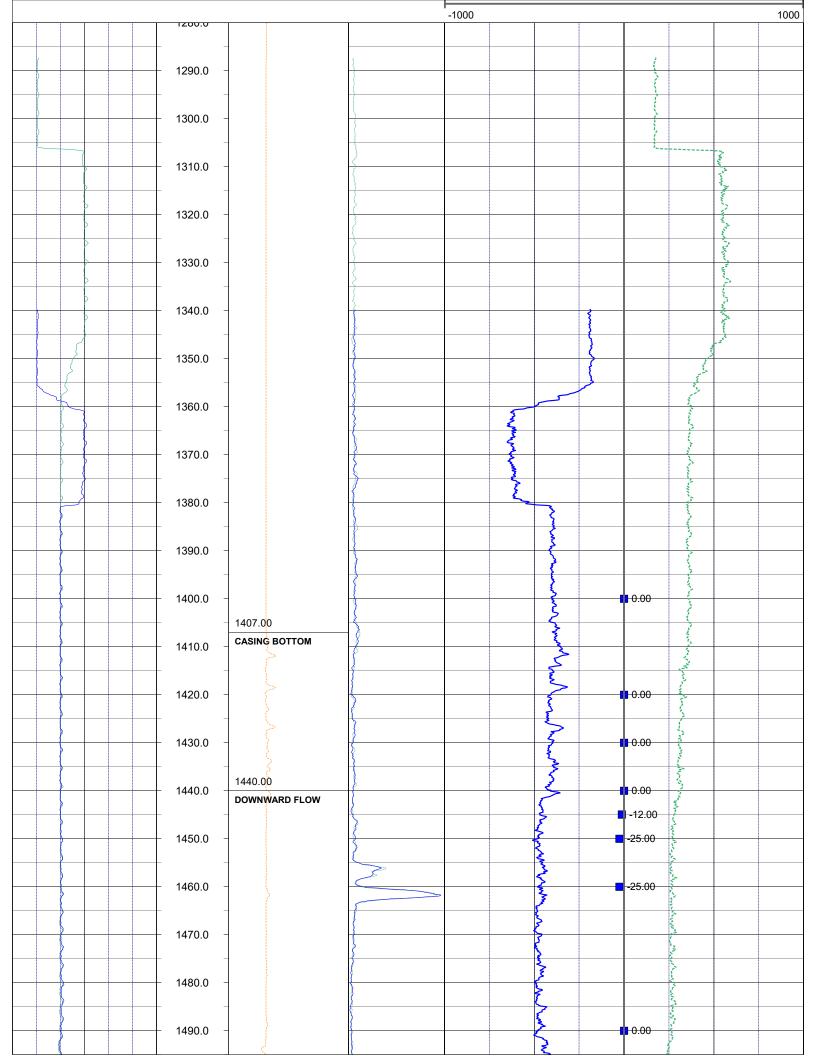
25

5 Dec 21

DEPTH-DRILLER

2000





			- 1500.0 -								5				
			- 1510.0 -												
			- 1520 0 -												
				_						-1000					1000
										4000			LINE		4000
										-1000		KI	PM		1000
												STATION	IS - FINAL	-	
0	ft/min	60					0	CPS	400	-1000		RF	PM		1000
	LSSU				COMMENTS		1	US GAMN	1			U <sup>-</sup>	TS		
0	ft/min	60	1in:20ft	0	in	20	0	CPS	400	-1000		RF	PM		1000
	LSSD		Depth	F	CAL		3	DS GAMN	1			FS	SD		

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Orlando, FL 32819 8600 Oldbridge Lane mobile ph 407-733-8958

HEADER NOTES:

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COMP

**SFWMD** 

LOC

POLK

**SR 60 SUMICA** 

**HESPERIDES ROAD** 

POF-32 POF-32

Geologist PG2186 PROFESSIONAL LICENSES

Licensed Geology Business

		LOG CODES			
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natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

SEC GDAT LONG

WGS84

HDAT 4  $|\times|$ 

CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
WATER QUALITY
FLOWMETER

ALL SERVICES:

VDATELEV LATI CTRY **PROV** STAT CNTY FLD

USA

TWP

RGE

RUN No DATE

TYPE LOG

SONIC

DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

## SONIC POROSITY:

RUN

BOREHOLE RECORD

FROM

270 1407 1500

> 1412 1500

> > 10 SIZE

> > 0 FROM

270 TO

1407

STEEL PVC MAT. CASING RECORD

TO

WITNESSED BY

SFWMD

LIC API

N/A

Z X

RMBAKER LLC

SRVC

RECORDED BY DRILLER DEPTH-LOGGER

RMB

**HUSS DRILLING** 

1521-OBST

DEPTH-DRILLER

2000

PUMPING RATE (GPM)

N/A

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

15

WATER

 $\subseteq$ 

TYPE FLUID IN HOLE

NO.

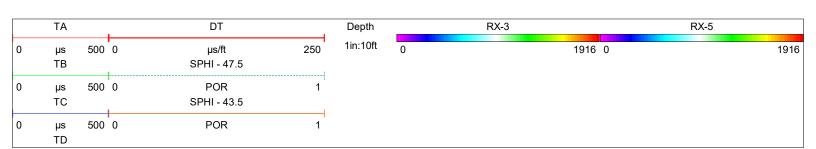
5.875 9.875 BIT

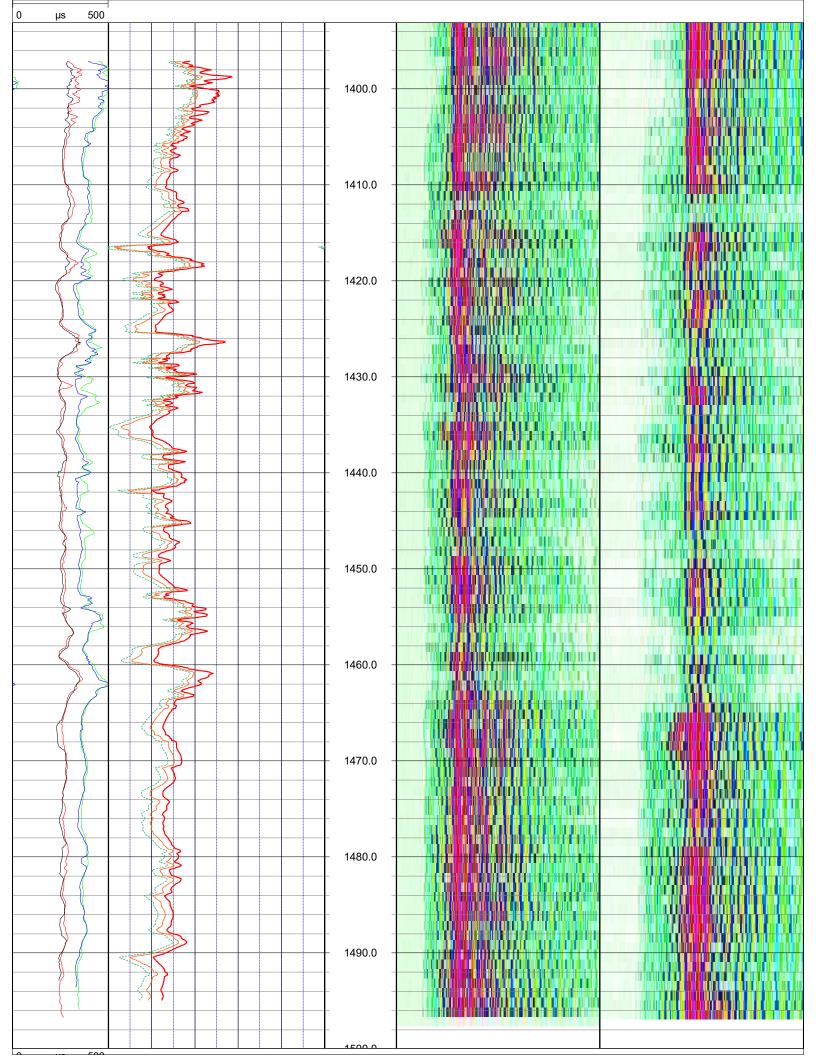
2000

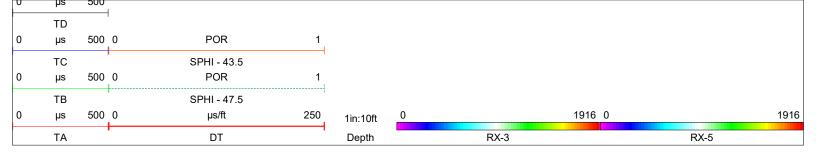
Assuming a carbonate formation, the porosity can be calculated using the Raymer-Hunt-Gardner (RHG) equation:

porosity= 5/8 x ([TT of log - TT of matrix] / TT of log), where "TT of log" is the measured sonic value and the "TT of matrix" is a constant.

The TT of matrix for dolostone is 43.5 microseconds per foot, and for limestone is 47.5 microseconds per foot.







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LOC COMP

HESPERIDES ROAD

SFWMD

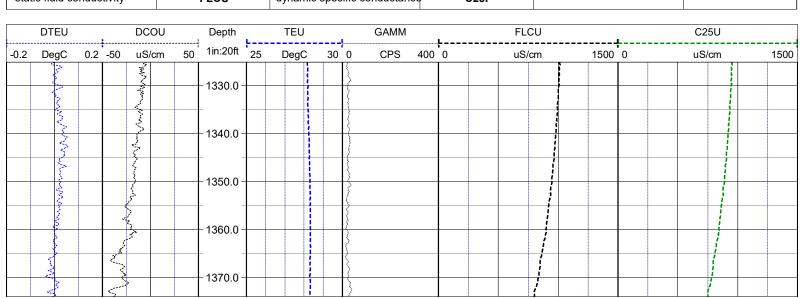
IWU WELL POF-32 POF-32

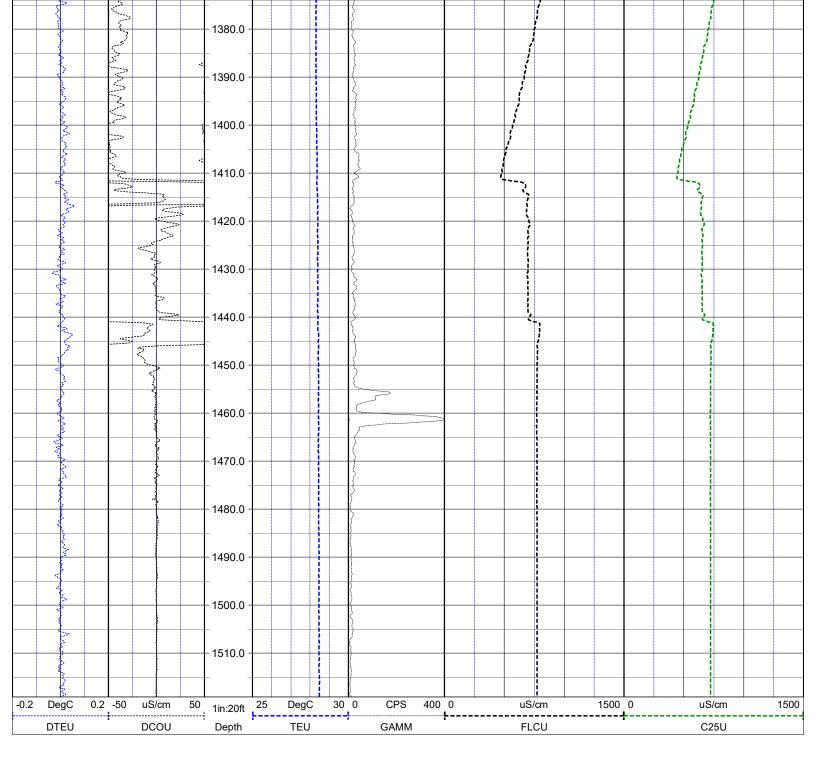
PROFESSIONAL LICENSES

HEADER NOTES: Licensed Geology Business Geologist PG2186

FLD	SR 60 SUMICA	JMICA				
CNTY	POLK					
STAT	끋					
PROV	끋					
CTRY	USA					
LATI		X			ALL SERVICES:	VICES:
LONG		Y			CALIPER	
GDAT WGS84		H DAT			ELECTRIC	- GAMMA
SEC		ELEV			DUAL INDUCTION	UCTION
TWP		V DAT			WATER QUALITY	TER TER
RGE					SONIC	į
PERMANENT DATUM:	•••					
LOG MEASURED FROM: GROUND SURFACE	M: GROUNI	SURFACE				
DRILLING MEASURED FROM:	) FROM:					
DATE	25 J	25 Jan 21	TYPE FLUID IN HOLE	IN HOLE	WATER	
RUN No	2		LOGGING SPEED (FT/MIN)	PEED (FT/M	IN) 30	
TYPE LOG	WA:	WATER QUALITY	TROLLING DIRECTION PUMPING RATE (GPM)	DIRECTION ATE (GPM)	DOWN	
DEPTH-DRILLER	2000			,		
DEPTH-LOGGER	152	1521-OBST.				
DRILLER	HUS	HUSS DRILLING				
RECORDED BY	RMB	L.				
SRVC	RME	RMBAKER LLC	API		N/A	
WITNESSED BY	SFWMD	MD	LIC		N/A	
	NECOND		NO A	COND		
NO. BIT	FROM	ТО	SIZE	MAT.	FROM	ТО
9.875	270	1412	10	PVC	0	270
2 5.875	1407	1500	6	STEEL	0	1407
4	1500	2000				

		WATER QUALITY L	OG CODES		
static fluid temperature	TEU	dynamic fluid conductivity	FLCP	caliper	CAL
dynamic fluid temperature	TEP	static differential cond.	DCOU	repeat designation	R
static differential temperature	DTEU	dynamic differential cond.	DCOP	natural gamma	GAMM
dynamic differential temp.	DTEP	static specific conductance	C25U	calibration correction	С
static fluid conductivity	FLCU	dynamic specific conductance	C25P		





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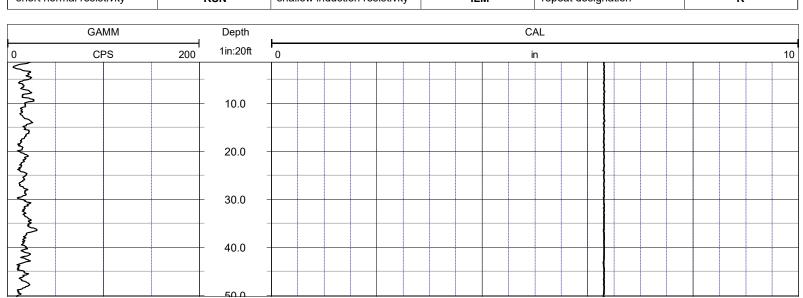
> UWI WELL POF-32 POF-32

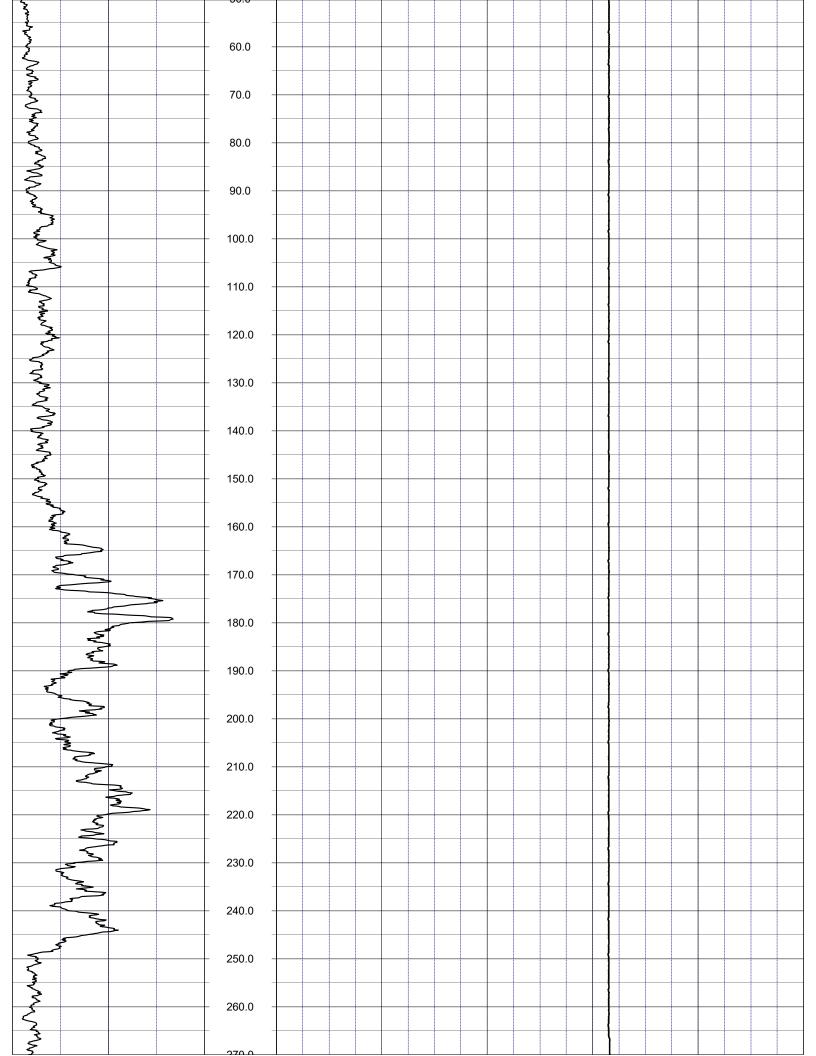
PROFESSIONAL LICENSES

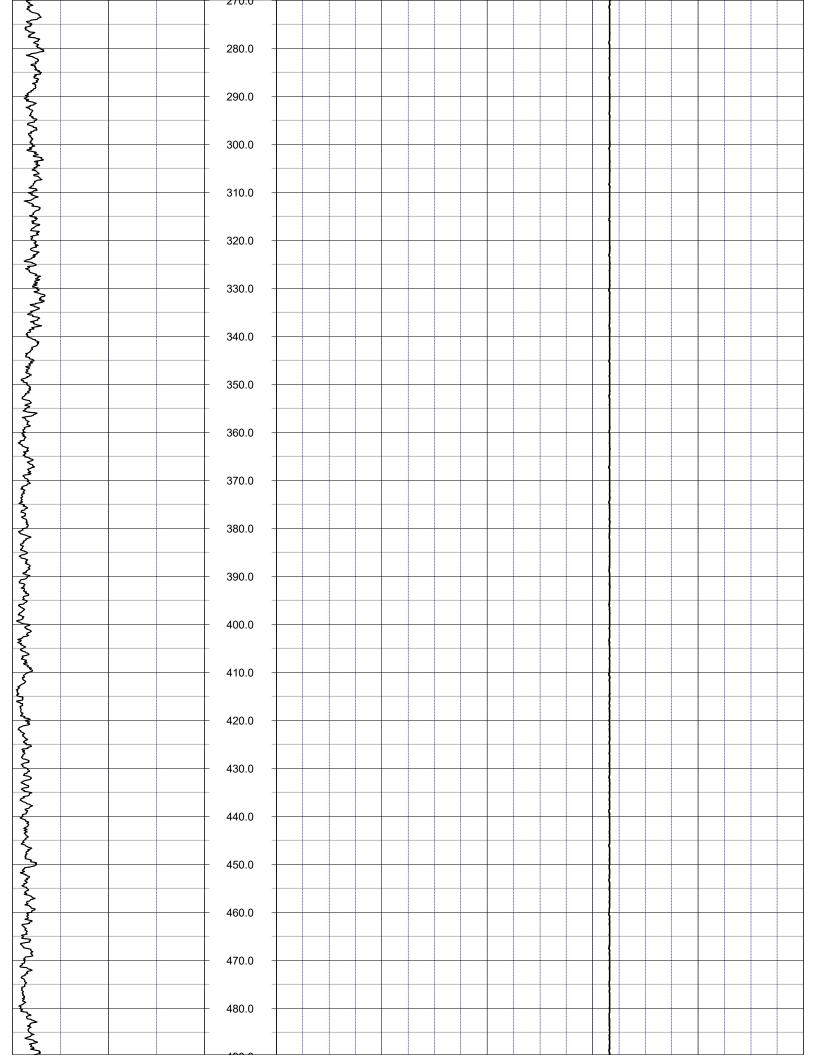
HEADER NOTES: 1407-1521ft logged Jan 25; 1520-2000 ft logged Jan 28 Geologist PG2186 Licensed Geology Business

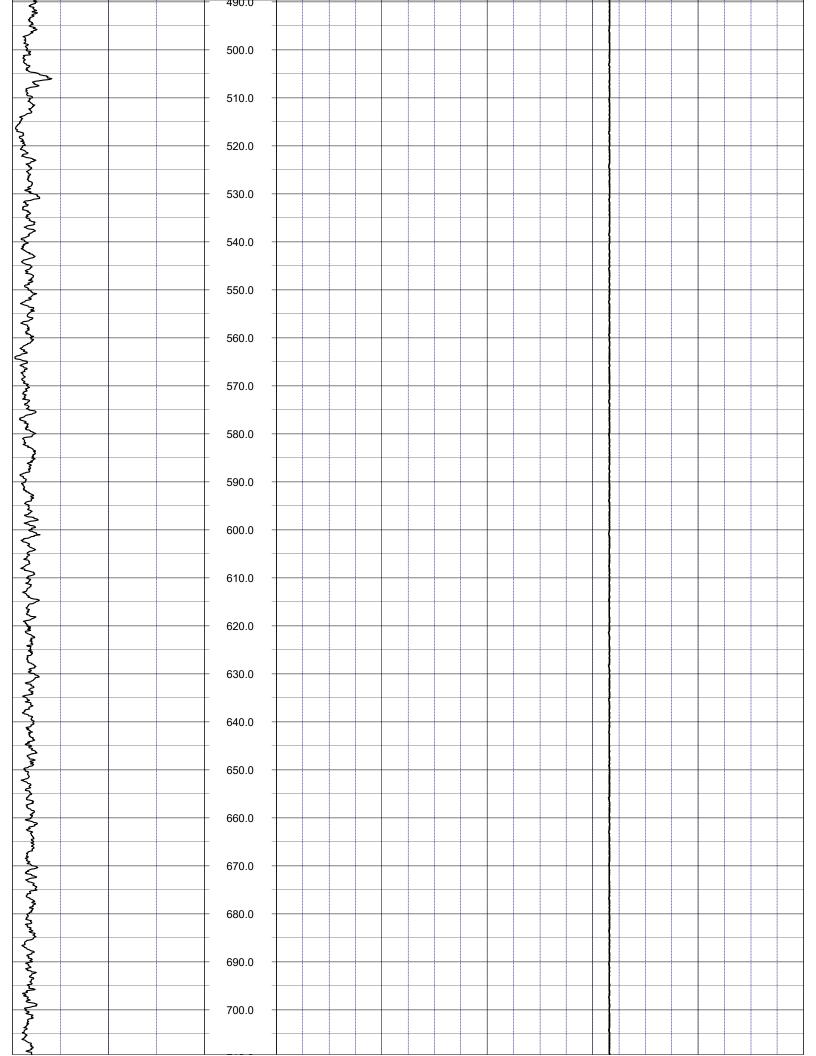
COMP	SFWMD	J				
LOC	HESPE	HESPERIDES ROAD				
FLD	SR 60 SUMICA	SUMICA				
CNTY	POLK					
STAT	핃					
PROV	핃					
CTRY	USA					
LATI		X			ALL SERVICES:	
LONG		Y			CALIPER	
GDAT WO	WGS84	H DAT			ELECTRIC	
SEC		ELEV			DUAL INDUCTION	
TWP		VDAT			FLOWMETER	
RGE					SONIC	
PERMANENT DATUM:	DATUM:					
LOG MEASUR	LOG MEASURED FROM: GROUND SURFACE	ND SURFACE				
Didt blind into	DIMEDIAN MELANOCKED I KOM.					
DAIE	22	730/70 Jali 7 I	I YPE FLUID IN HOLE	D IN HOLE	WAIRZ	
RUN No	2		LOGGING	LOGGING SPEED (FT/MIN)	40	
TYPE LOG	Ç	CALIPER	TROLLING	TROLLING DIRECTION	UP	
DEPTH-DRILLER		2000				
DEPTH-LOGGER		1997.4				
DRILLER	Ħ	HUSS DRILLING				
RECORDED BY		RMB				
SRVC	공	RMBAKER LLC	API		N/A	
WITNESSED BY		SFWMD	LIC		N/A	
RUN BOR	BOREHOLE RECORD		CASING RECORD	CORD		
NO. BIT	FROM	TO	SIZE	MAT.	FROM TO	
1 9.875	5 270	1412	10	PVC	0 270	
2 5.875	5 1407	1500	6	STEEL	0 1407	
4	1500	2000				
	-		-			

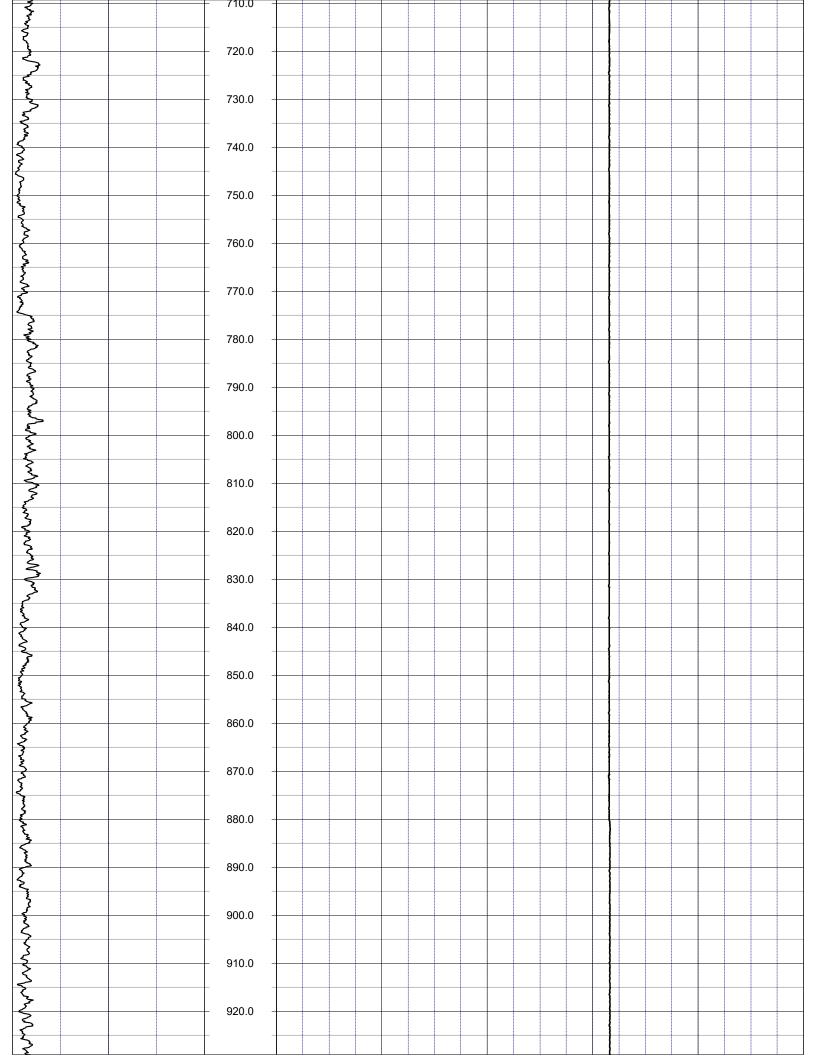
		LOG CODI	ES		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

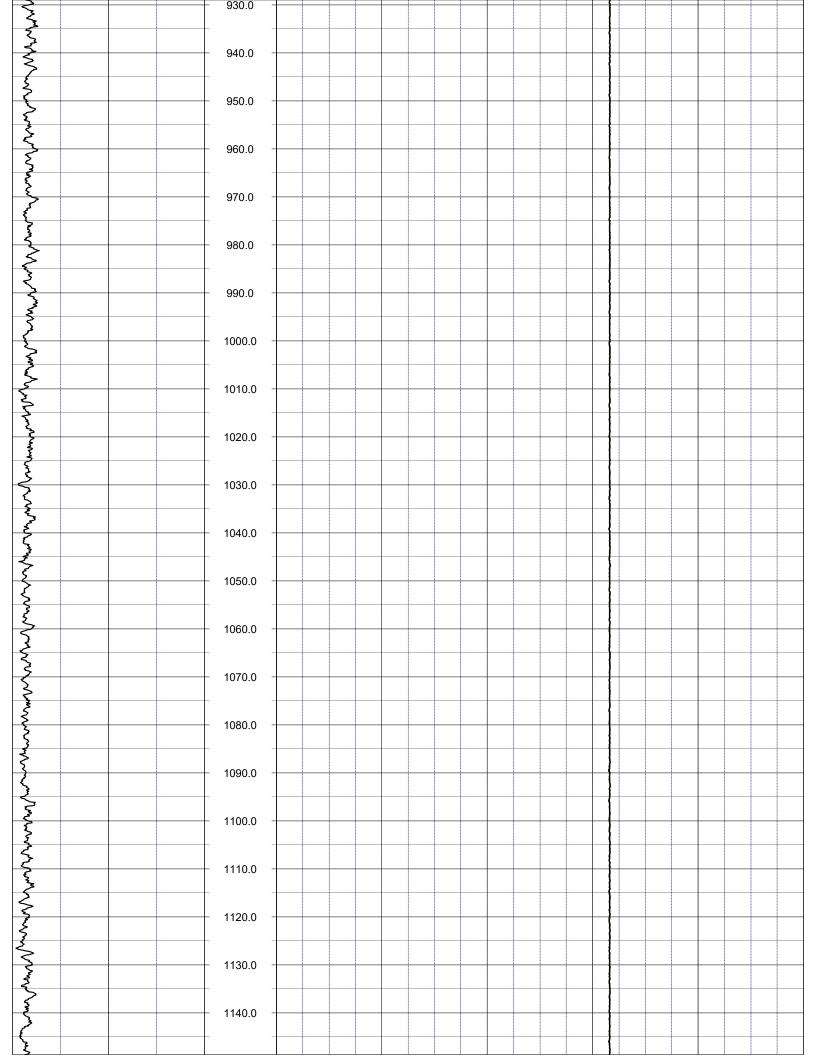


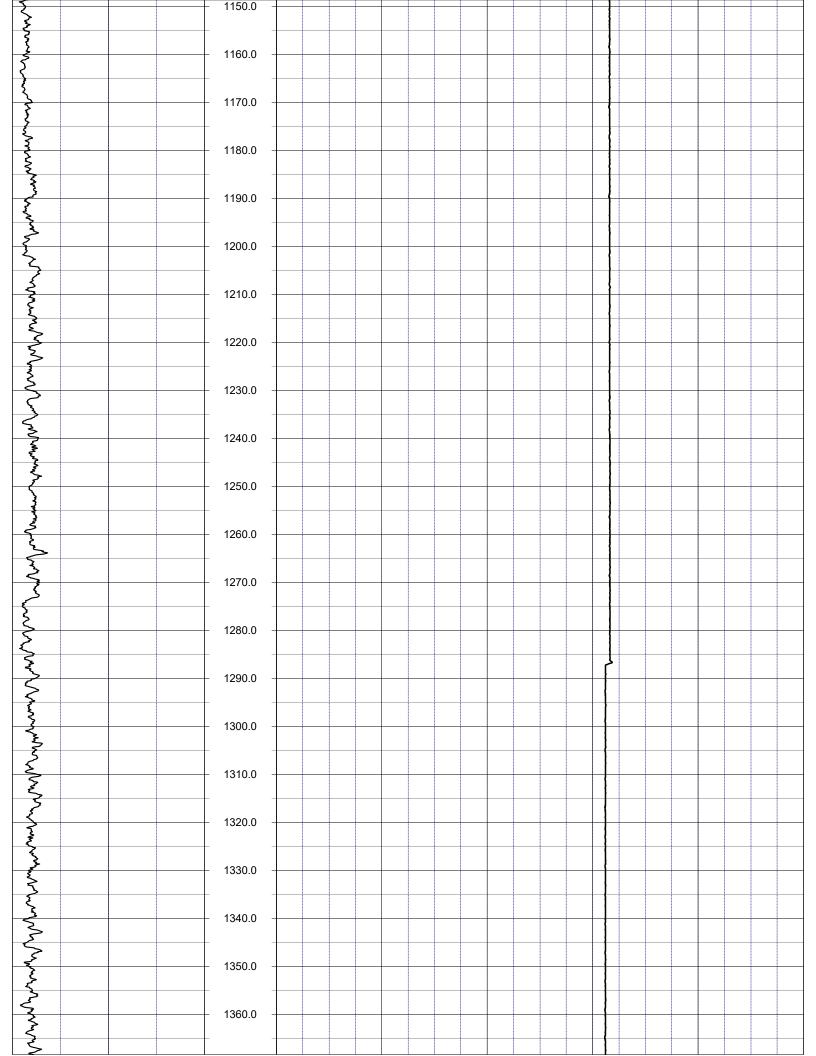


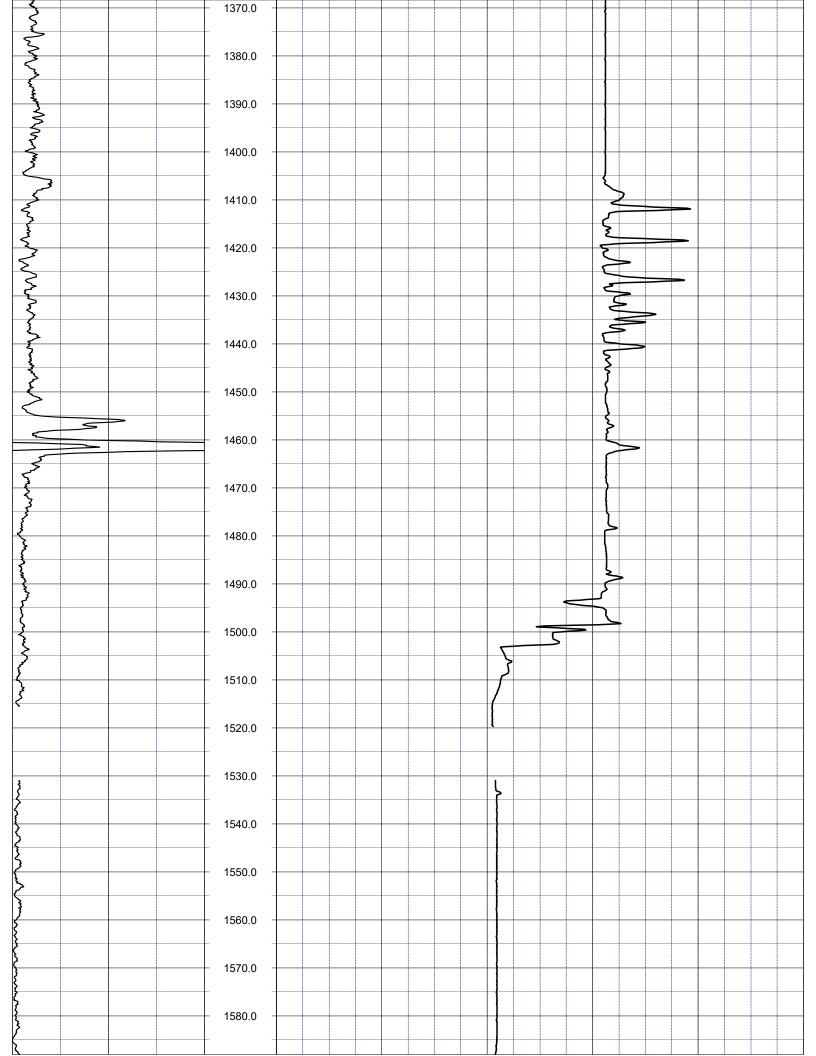


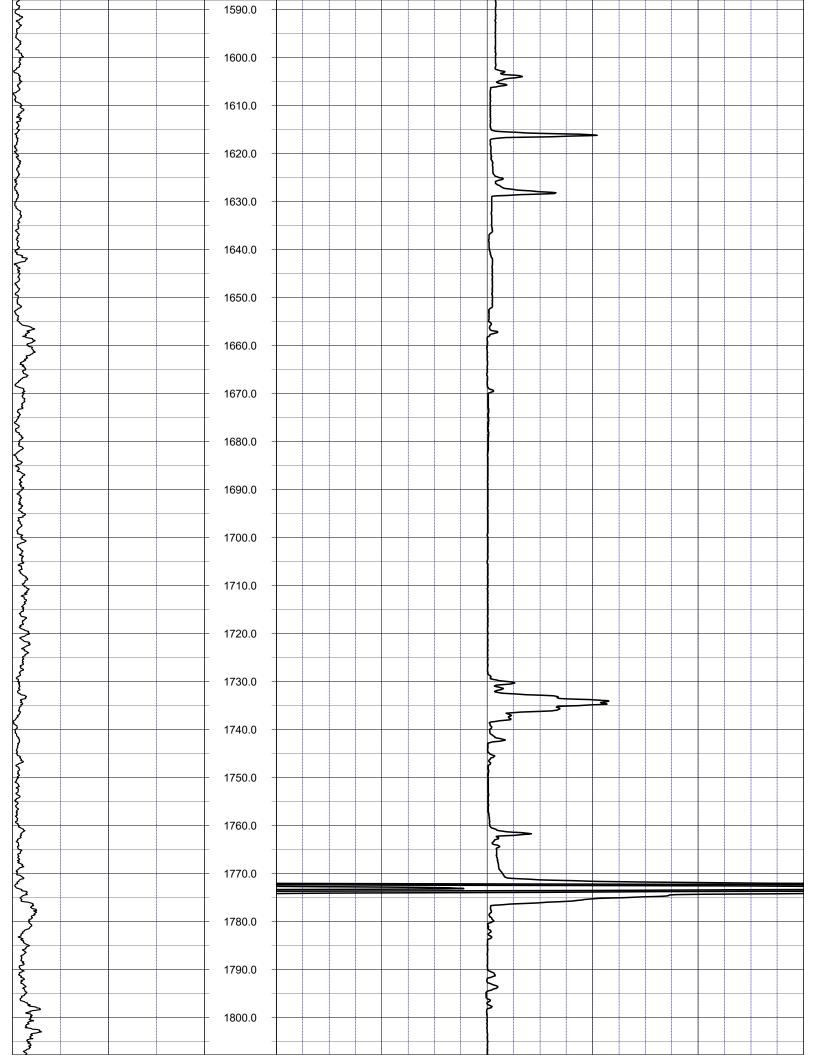


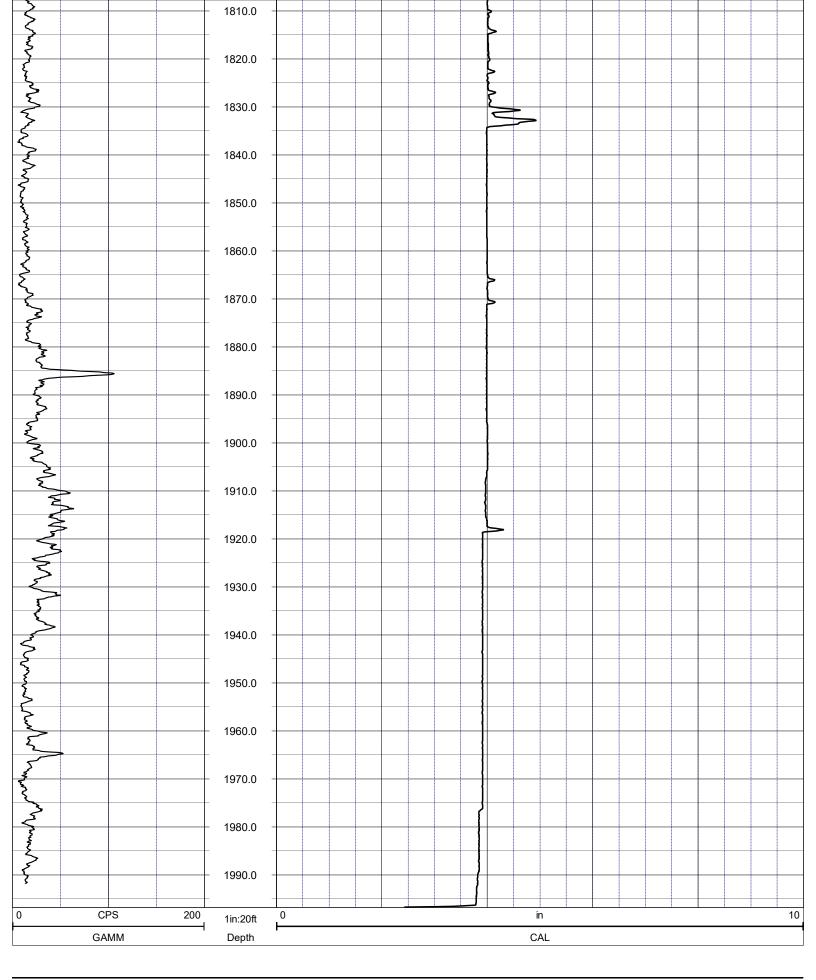












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8600 Oldbridge Lane Orlando, FL 32819

mobile ph 407-733-8958

www.rmbaker.com rob@rmbaker.com

> WELL POF-32 POF-32

PROFESSIONAL LICENSES

Geologist PG2186

Licensed Geology Business

1407-1521 ft logged Jan 25; 1520-2000 ft logged Jan 28

HEADER NOTES:

COMP		SFWMD	
LOC		HESPERIDES ROAD	ROAD
FLD		SR 60 SUMICA	
CNTY		POLK	
STAT		끈	
PROV		끈	
CTRY		USA	
LATI			X
LONG			Y
GDAT	WGS84		HDAT
SEC			ELEV
TWP			VDAT
RGE			
PERMANENT DATUM:	NT DATUN	f:	

N0. RUN

BOREHOLE RECORD

5.875 9.875 BIT

1407 270 FROM

1412

TO

SIZE 10

MAT.

STEEL PVC

1407 270 TO

0 FROM CASING RECORD

1500

2000 1500 WITNESSED BY

SFWMD

LIC API

N N

N N

RMBAKER LLC

RMB

**HUSS DRILLING** 

2000

1997.4

ELECTRIC+DUIN

PUMPING RATE (GPM)

N/A UP

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

35

WATER

TYPE FLUID IN HOLE

25&28 Jan 21

SRVC RECORDED BY DRILLER DEPTH-LOGGER **DEPTH-DRILLER**  RUN No

DATE

TYPE LOG

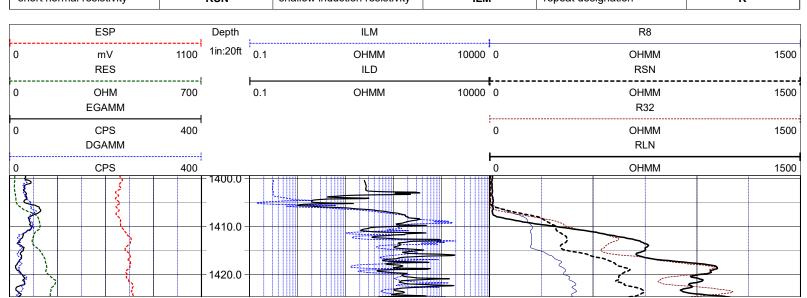
DRILLING MEASURED FROM:

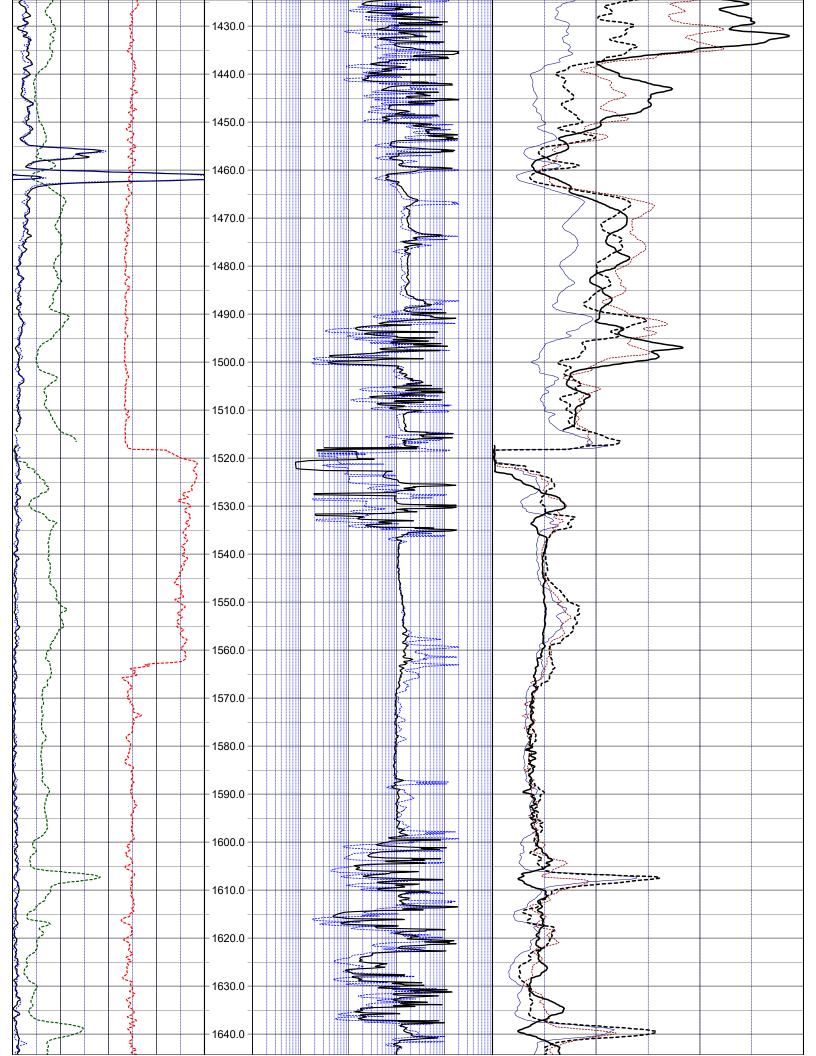
LOG MEASURED FROM: GROUND SURFACE

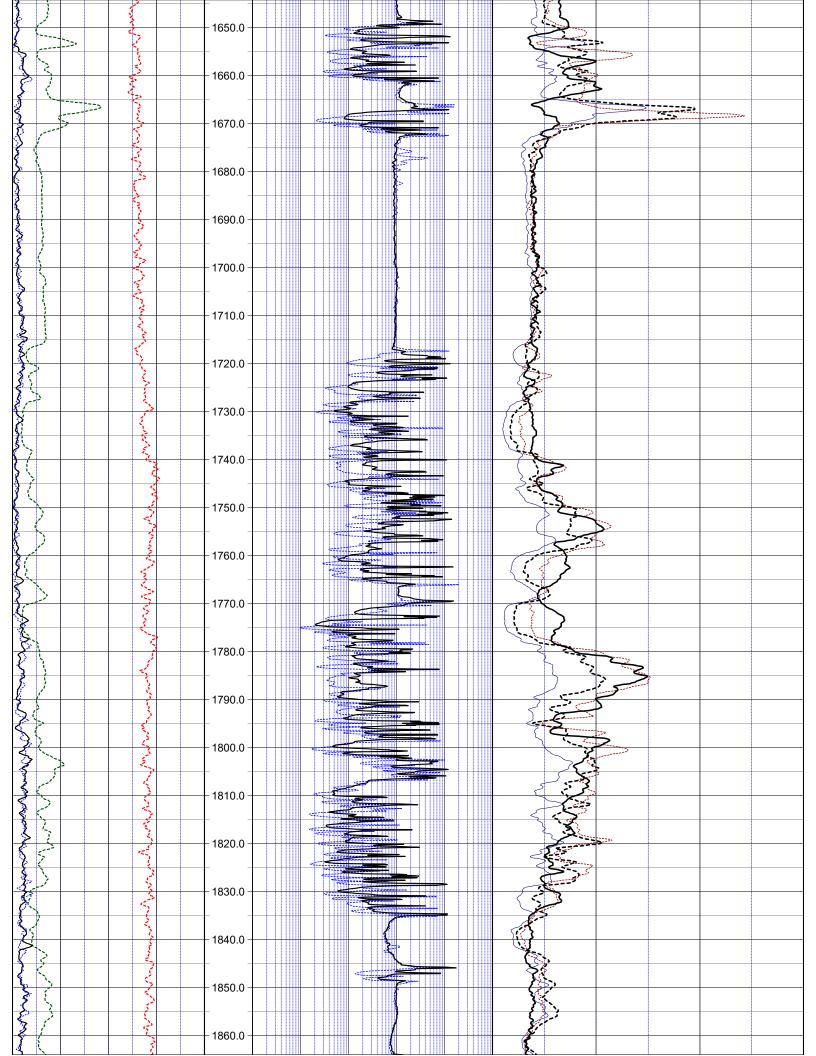
		LOG COD	ES		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

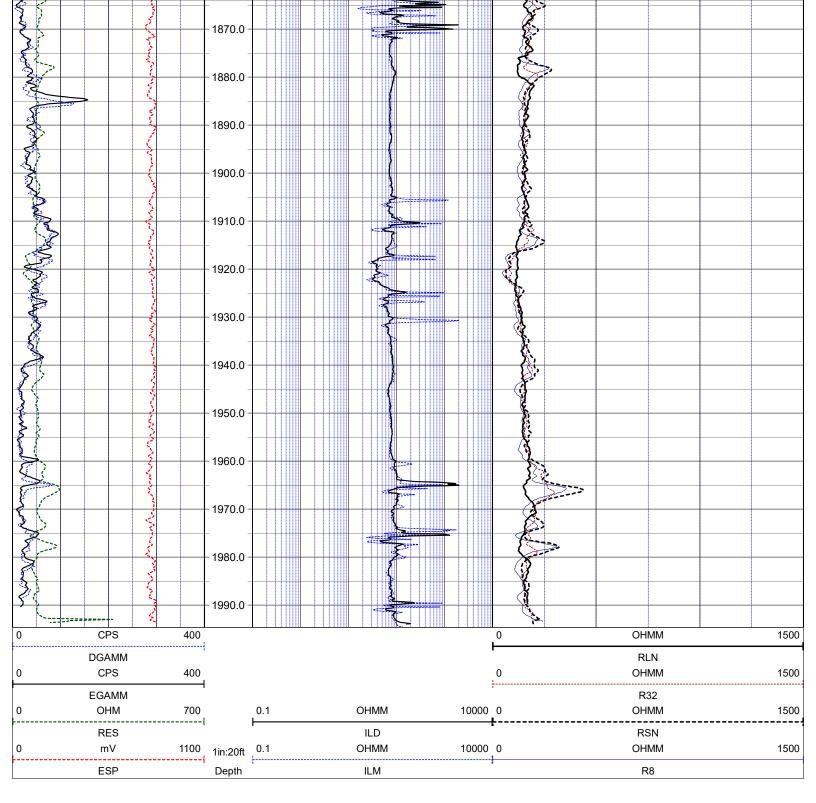
CALIPER
NATURAL GAMMA
ELECTRIC
DUAL INDUCTION
WATER QUALITY
FLOWMETER

ALL SERVICES:









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> IWU WELL POF-32

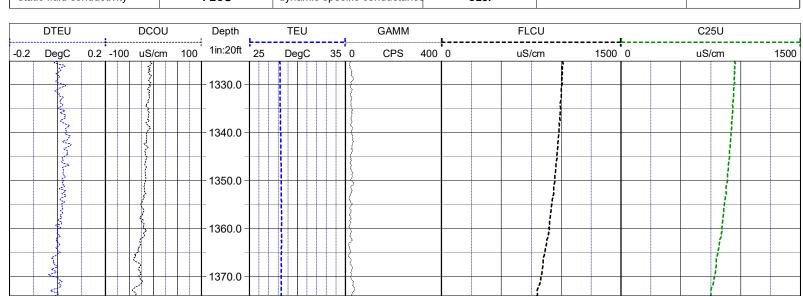
PROFESSIONAL LICENSES

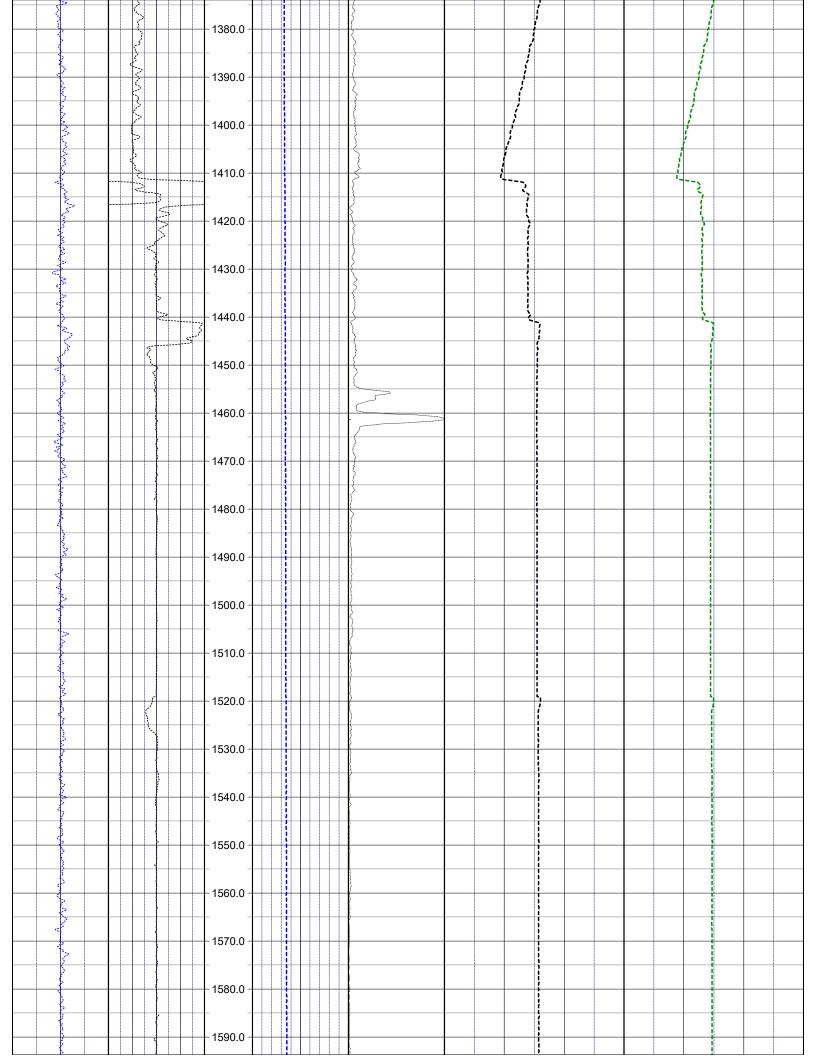
Geologist PG2186

HEADER NOTES: 1407-1521 ft logged Jan 25; 1520-2000 ft logged Jan 28 Licensed Geology Business POF-32

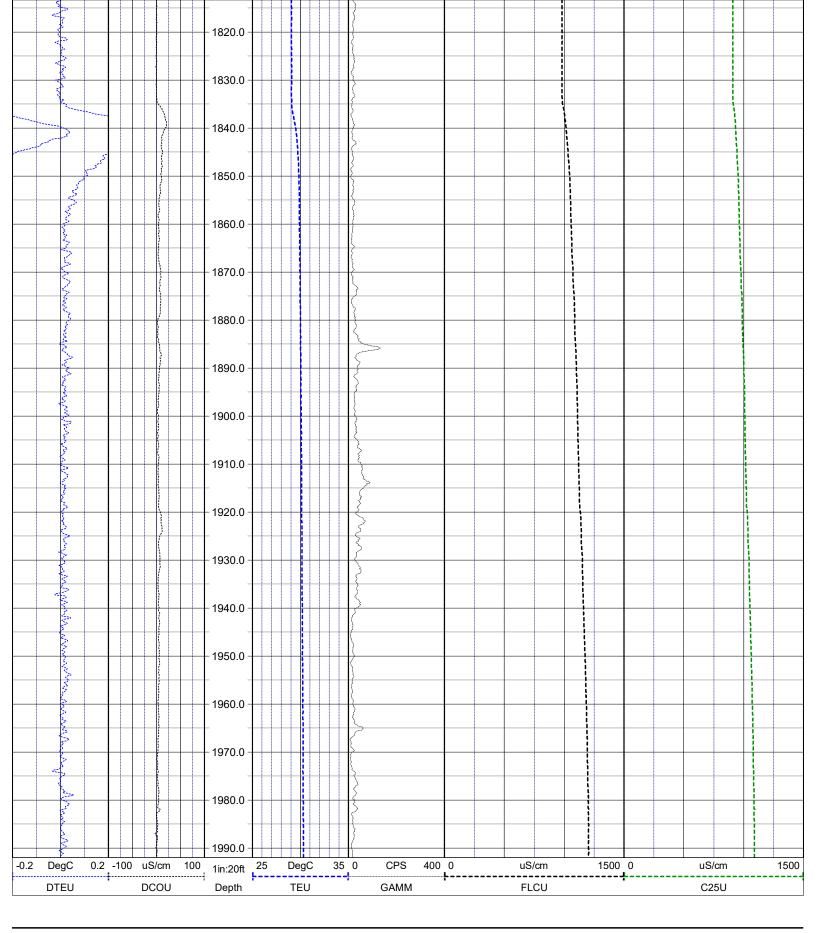
COMP		SFWMD						
LOC		HESPERIDES ROAD	RIDES	ROAD				
FLD		SR 60 SUMICA	SUMIC/					
CNTY		POLK						
STAT		卫						
PROV		끋						
CTRY		USA						
LATI	-			X			ALL SERVICES:	VICES:
LONG				Y			CALIPER	
GDAT	WGS84			H DAT			ELECTRIC	CGAMMA
SEC				ELEV			DUAL INDUCTION	JUCTION
TWP				V DAT			FLOWMETER	JUALIIY TER
RGE							SONIC	
PERMANI	PERMANENT DATUM:							
LOG MEA	LOG MEASURED FROM: GROUND SURFACE DRILLING MEASURED FROM:	1: GROUI	ND SURF	ACE				
DATE		25	25 Jan 21		TYPE FLUID IN HOLE	D IN HOLE	WATER	
RUN No		2			LOGGING S	LOGGING SPEED (FT/MIN)	N) 30	
TYPE LOG		8	WATER QUALITY	JALITY	TROLLING	TROLLING DIRECTION DI IMPING BATE (GDM)	DOWN	
DEPTH-DRILLER	RILLER	20	2000		I CIVIL III O	CATE (OLIVI)		
DEPTH-LOGGER	OGGER	19	1997.4					
DRILLER		H	HUSS DRILLING	LING				
RECORDED BY	DBY	R	RMB					
SRVC		R.	RMBAKER LLC	LLC	API		N/A	
WITNESSED BY	ED BY	SF	SFWMD		LIC		N/A	
RUN	BOREHOLE RECORD	RECORD			CASING RECORD	CORD		
	BIT	FROM		ТО	SIZE	MAT.	FROM	TO
1	9.875	270		1412	10	PVC	0	270
2	5.875	1407		1500	6	STEEL	0	1407
	4	1500		2000				

		WATER QUALITY LO	OG CODES		
static fluid temperature	TEU	dynamic fluid conductivity	FLCP	caliper	CAL
dynamic fluid temperature	TEP	static differential cond.	DCOU	repeat designation	R
static differential temperature	DTEU	dynamic differential cond.	DCOP	natural gamma	GAMM
dynamic differential temp.	DTEP	static specific conductance	C25U	calibration correction	С
static fluid conductivity	FLCU	dynamic specific conductance	C25P		









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HEADER NOTES:

COMP

**SFWMD** 

IWU WELL POF POF-

Geologist PG2186

The sonic sonde confirmed the total depth at 1 borehole became obstructed at 1775 feet, and performed below the obstruction Licensed Geology Bu PROFESSIONA

								so	1843	LLIC	32
1407 TO 1407	N/A	N/A	N/A	WATER 15	SONIC	ALL SERVICES: CALIPER NATURAL GAMMA ELECTRIC FLOWMETER		so no other logs were	3.3. During the video the	L LICENSES	
					LOG CO	DES					
3-arm caliper		C	AL	long norn	nal resistivity		RLN	deep induction conductiv	ity	IDO	С
natural gamma (CPS	5)	GA	ММ	8 inch res	sistivity		R8	shallow induction conduc	tivity	ISC	3
spontaneous potentia	al	E	SP	32 inch re	esistivity		R32	sonic interval velocity		DI	Г
single point resistand	e	R	ES	deep indu	uction resistivity		ILD	sonic porosity (RHG met	hod)	SPI	н
short normal resistivi	ty	R	SN	shallow ii	nduction resistivity	,	ILM	repeat designation		R	
TA		D.	Т		Depth		RX-3		R	X-5	

 $_{\rm dML}$ SEC GDAT

RGE

LONG

WGS84

ELEV H DAT 4  $|\times$ 

V DAT

LATI CTRY **PROV**  STAT CNTY

끋

USA

FLD LOC

POLK

**SR 60 SUMICA** 

**HESPERIDES ROAD** 

RUN No DATE DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

PERMANENT DATUM:

TYPE LOG

SONIC

PUMPING RATE (GPM)

LOGGING SPEED (FT/MIN) TROLLING DIRECTION

TYPE FLUID IN HOLE

09 Apr 21

N0. RUN

BOREHOLE RECORD

5.875

1407 1500 1407 270 FROM

2000

1500

STEEL PVC

1843.3

1412

TO

SIZE 10

MAT.

CASING RECORD

5.875 9.875 BIT WITNESSED BY

SFWMD

LIC API

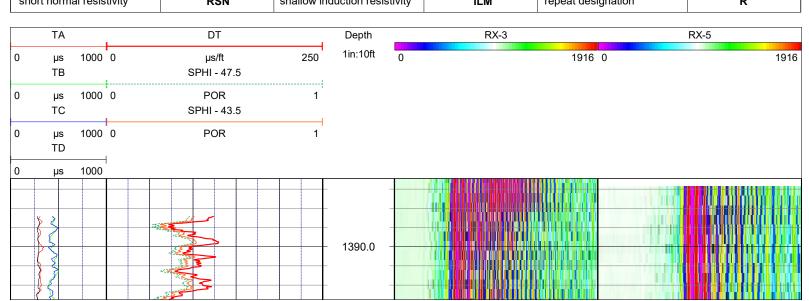
RMBAKER LLC

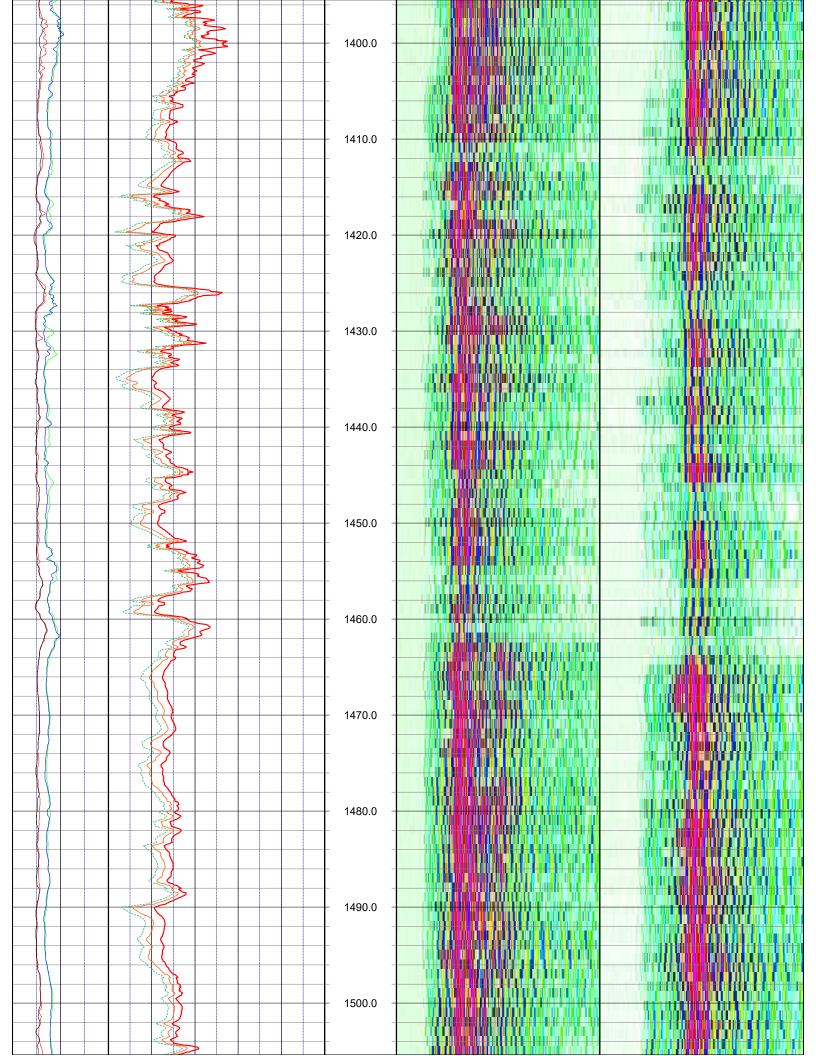
RMB

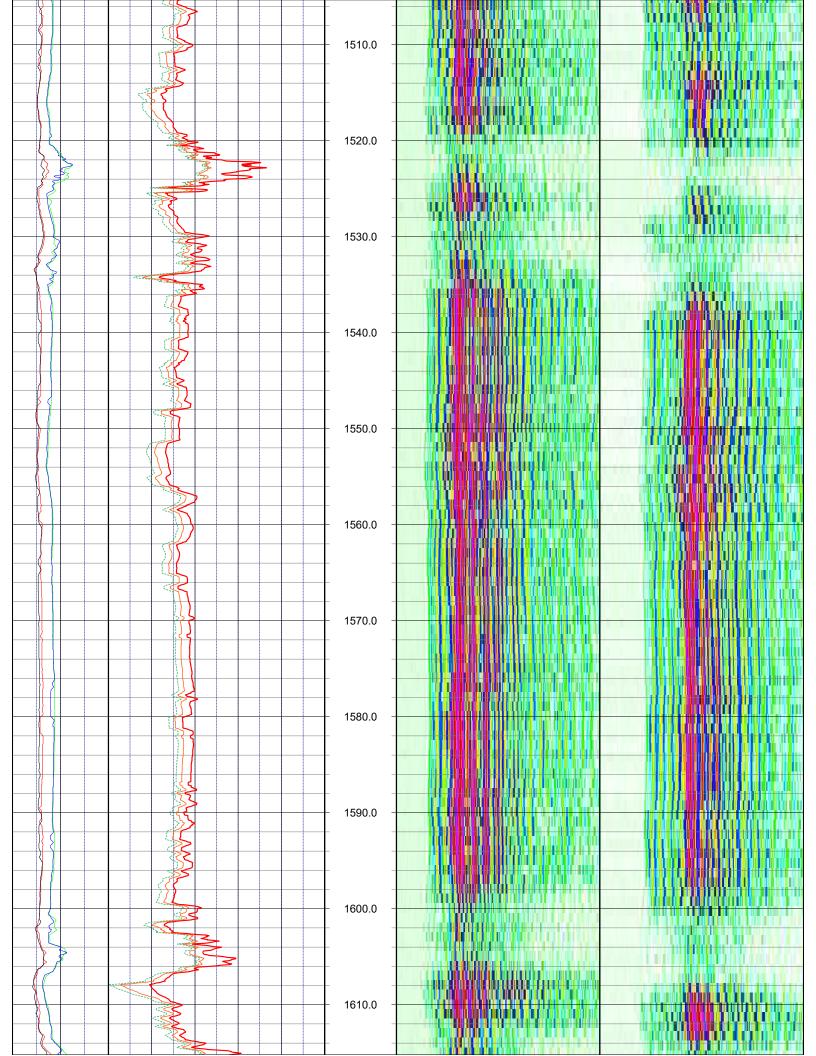
**HUSS DRILLING** 

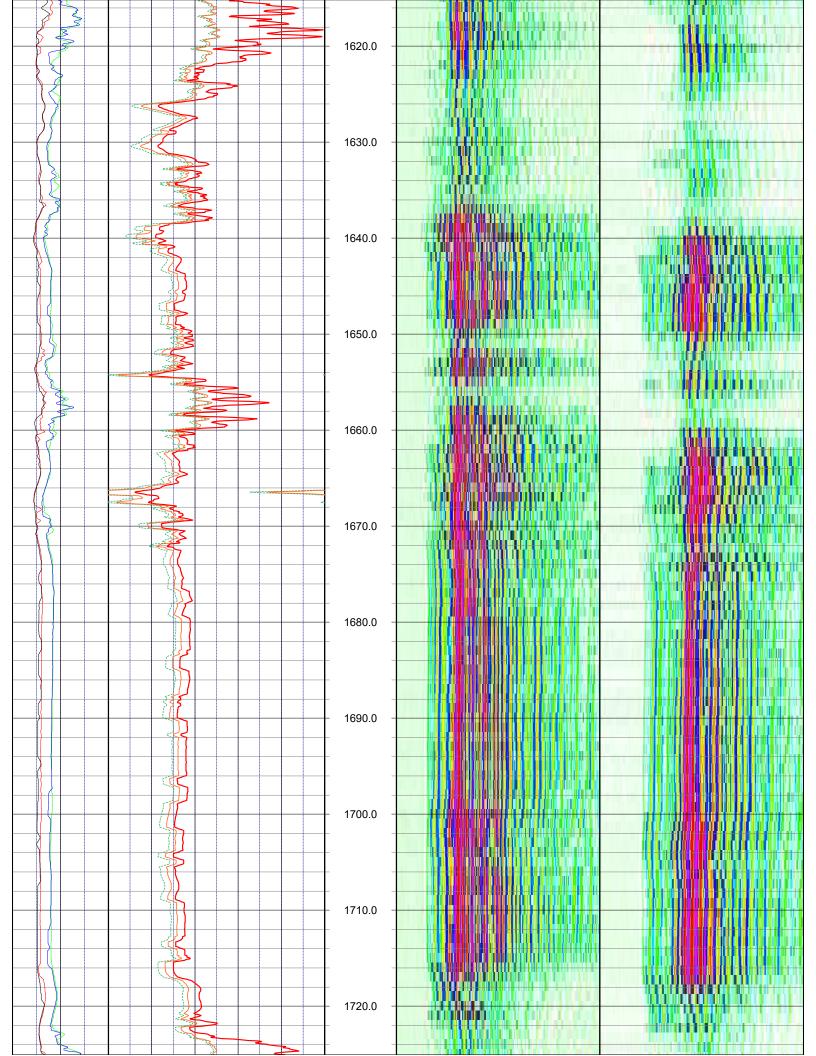
1843.3 1840

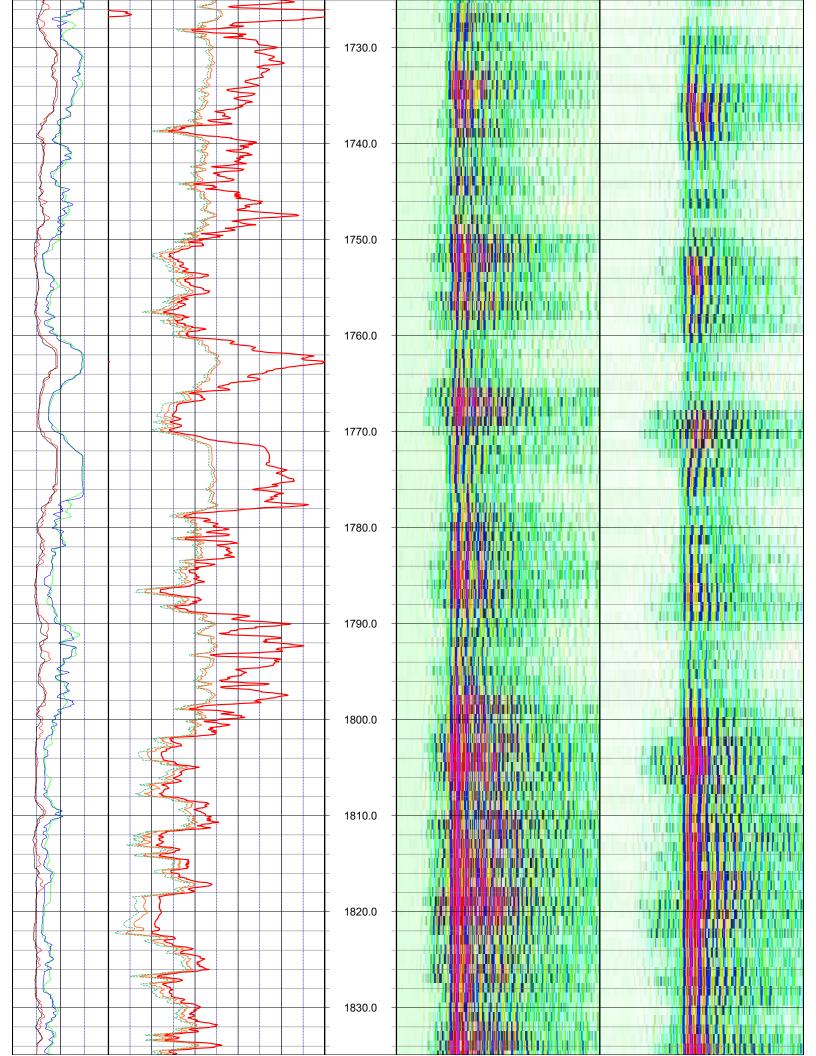
SRVC RECORDED BY DRILLER DEPTH-LOGGER DEPTH-DRILLER

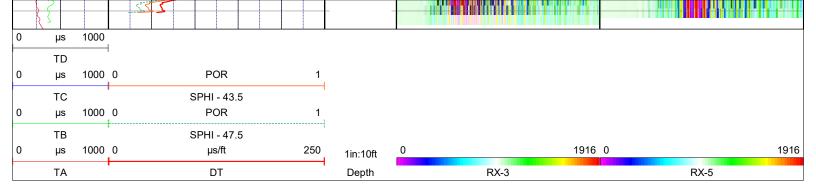












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### **END OF LOG**



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COMP

SFWMD

LOC

R LLC	WELL POF-32 UWI POF-32	
	PROFESSIONAL LICENSES Geologist PG2186 Licensed Geology Business	
HEADER NOTES: The sonic sonde confirmed the to borehole became obstructed at 1 performed below the obstruction.	HEADER NOTES:  The sonic sonde confirmed the total depth at 1843.3. During the video the borehole became obstructed at 1775 feet, and so no other logs were performed below the obstruction.	
ROAD		

		LOG COD	ES		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

 $_{\rm dML}$ SEC GDAT LONG

WGS84

H DAT 4  $|\times$ 

ALL SERVICES:
CALIPER
NATURAL GAMMA
ELECTRIC
FLOWMETER
SONIC

V DAT ELEV LATI CTRY PROV

USA

RGE

PERMANENT DATUM:

RUN No

DATE

DRILLING MEASURED FROM:

LOG MEASURED FROM: GROUND SURFACE

TYPE LOG

**CALIPER** 

PUMPING RATE (GPM)

TROLLING DIRECTION

UP 35

WATER

LOGGING SPEED (FT/MIN) TYPE FLUID IN HOLE

09 Apr 21

STAT CNTY FLD

POLK

**SR 60 SUMICA** 

**HESPERIDES ROAD** 

NO. RUN

BOREHOLE RECORD

5.875

1407

9.875 BIT

270 FROM

1412

TO

SIZE 10

MAT.

FROM

STEEL PVC

1407 270 To CASING RECORD

5.875

1407 1500

1843.3 2000 1500 WITNESSED BY

SFWMD

LIC API

N N

N N

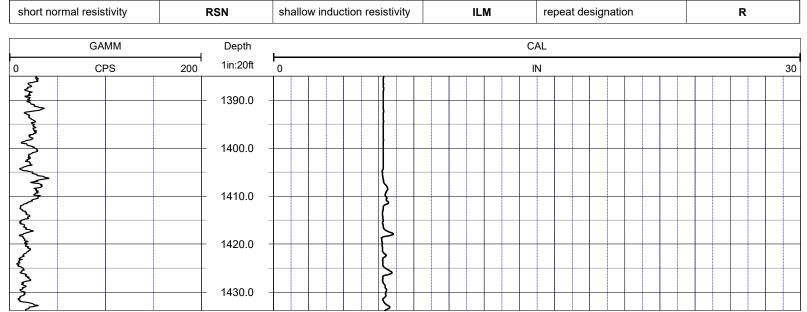
RMBAKER LLC

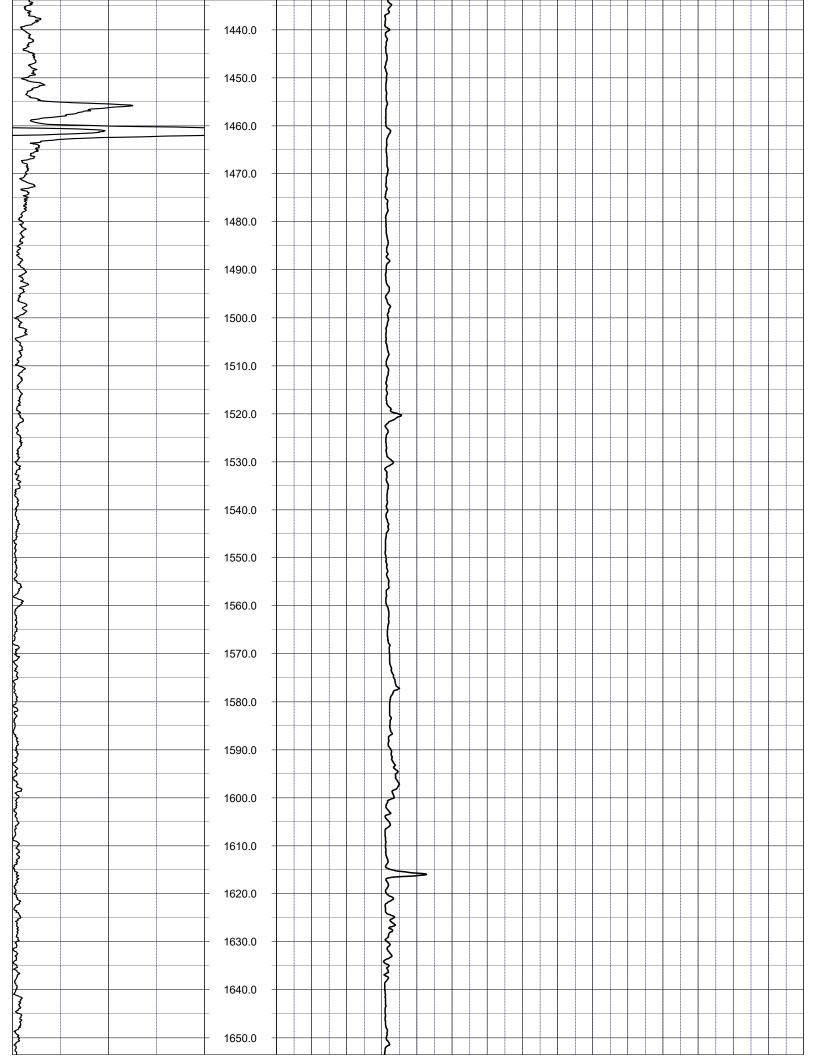
RMB

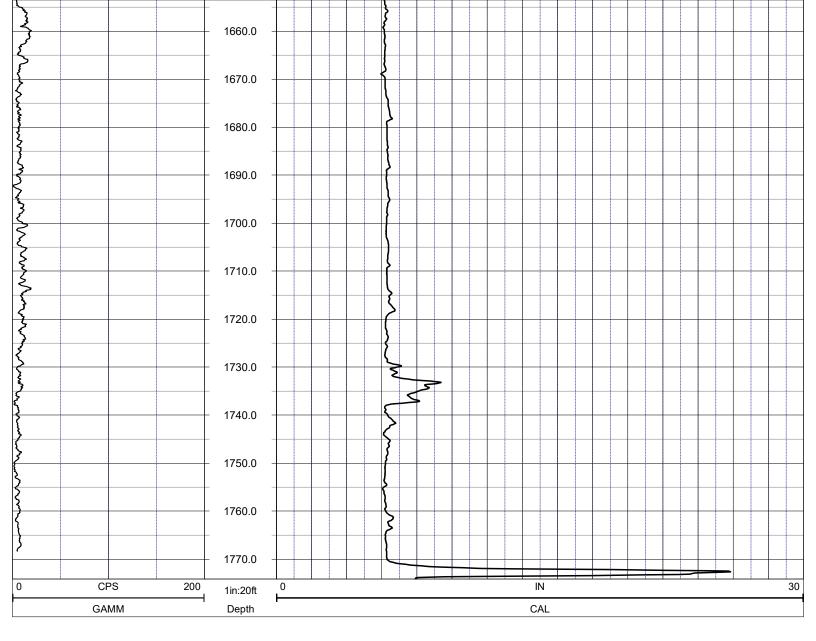
**HUSS DRILLING** 

1843.3 1840

SRVC RECORDED BY DRILLER DEPTH-LOGGER DEPTH-DRILLER







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### **END OF LOG**



## www.rmbaker.com rob@rmbaker.com

performed below the obstruction.

The sonic sonde confirmed the total depth at 1843.3. During the video the borehole became obstructed at 1775 feet, and so no other logs were

COMP

LOC

WELL IWU POF-32 POF-32

PROFESSIONAL LICENSES

Geologist PG2186

HEADER NOTES: Licensed Geology Business

5.875	4	5.875	9.875	BIT	BOREHOLE RECORD		SED BY		EDBY	~	OGGER	DRILLER		G			G MEASURED FROM:	ASURED FRO	ENT DATUM:			WGS84									
1407	1500	1407	270	FROM	RECORD	_	SFWMD	RMBAKER LLC	RMB	HUSS DRILLING	1843.3	1840		ELECTRIC	4	09 Apr 21	) FROM:	ASURED FROM: GROUND SURFACE							USA	핕	핃	POLK	SR 60 SUMICA	HESPERIDES ROAD	SFWMD
1843.3	2000	1500	1412	ТО				R LLC		RILLING				ิดิ				RFACE		V DAT	ELEV	H DAT	Y	X					A	S ROAD	_
		6	10	SIZE	CASING RECORD	-	LIC	API					PUMPING F	TROLLING	LOGGING S	TYPE FLUID IN HOLE															
		STEEL	PVC	MAT.	CORD								PUMPING RATE (GPM)	TROLLING DIRECTION	LOGGING SPEED (FT/MIN)	D IN HOLE															
		0	0	FROM		-	N/A	N/A					N/A	UP	35	WATER				SONIC	FLOWMETE	ELECTRIC	CALIPER	ALL SERVICES:							
		1407	270	ТО																	ZJ	AMMA		CES:							

DATE

DRILLING

TYPE LOC RUN No LOG MEA PERMANI RGE

NO. RUN RECORDI DRILLER DEPTH-LO DEPTH-D

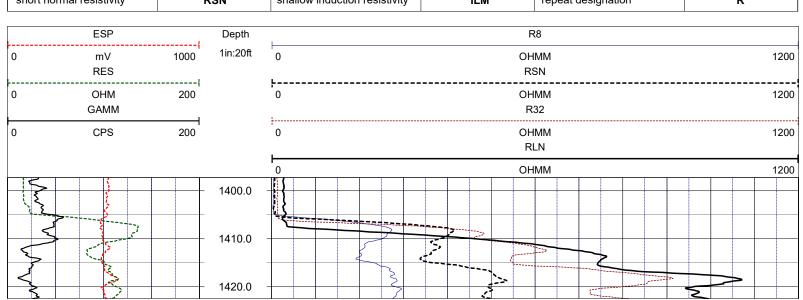
WITNESS SRVC

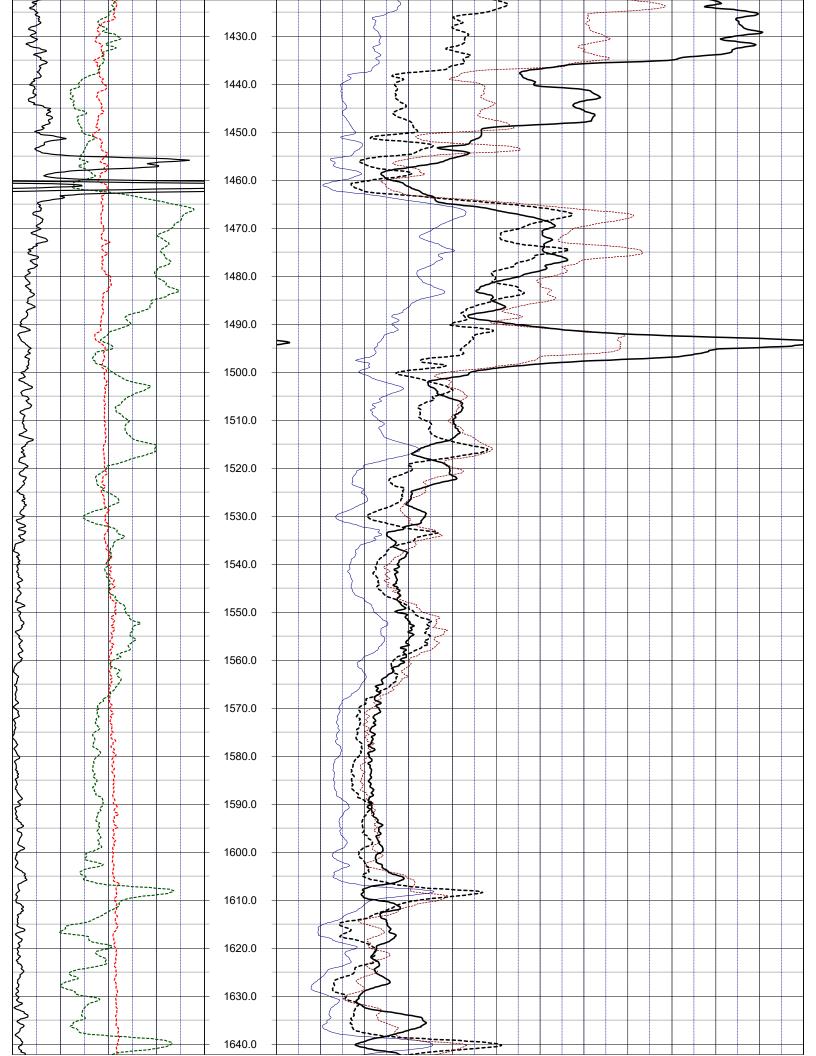
		LOG CODE	ES		
3-arm caliper	CAL	long normal resistivity	RLN	deep induction conductivity	IDC
natural gamma (CPS)	GAMM	8 inch resistivity	R8	shallow induction conductivity	ISC
spontaneous potential	ESP	32 inch resistivity	R32	sonic interval velocity	DT
single point resistance	RES	deep induction resistivity	ILD	sonic porosity (RHG method)	SPHI
short normal resistivity	RSN	shallow induction resistivity	ILM	repeat designation	R

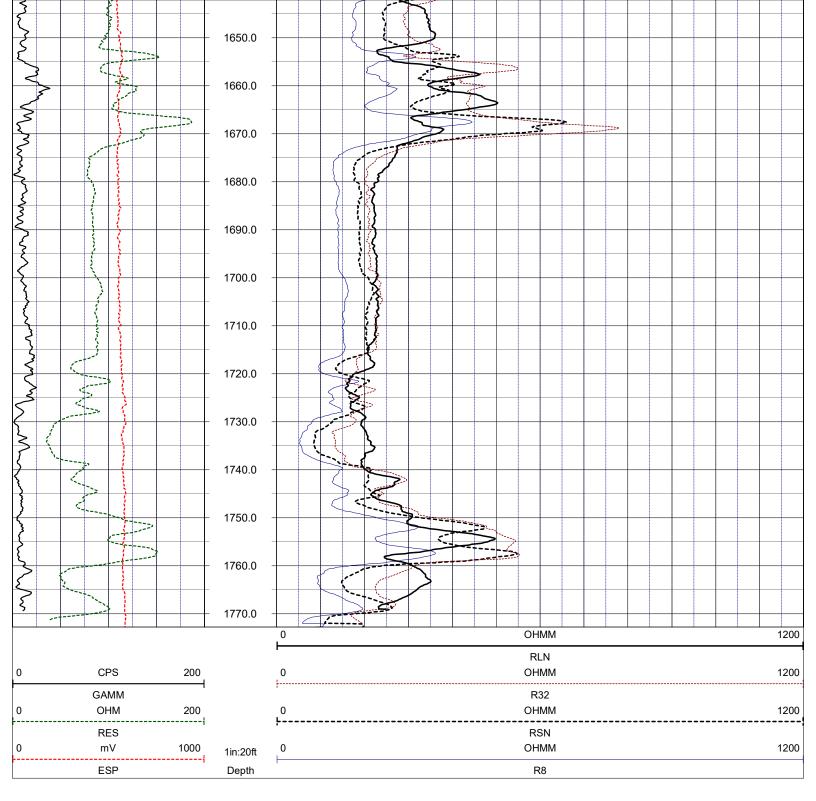
 $_{
m dWT}$ SEC GDAT LONG

LATI

CTRY PROV STAT CNTY FLD







While due care has been exercised in the performance of these measurements and observations, in accordance with methodologies utilized by the general practitioner, RMBAKER LLC can make no representations, warranties, or guarantees with respect to latent or concealed conditions that may exist, which may be beyond the detection capabilities of the methodologies used, or that may extend beyond the areas and depths surveyed.

The geophysical well logs show subsurface conditions as they existed at the dates and locations shown, and it is not warranted that they are representative of subsurface conditions at other locations and times. If, at any time, different subsurface conditions from those observed are determined to be present, we must be advised and allowed to review and revise our observations if necessary.

Florida Geology Business Licenced by PG2186



## www.rmbaker.com rob@rmbaker.com

COMP

LOC

WELL IWU POF-32 POF-32

PROFESSIONAL LICENSES

# Geologist PG2186

Licensed Geology Business

The sonic sonde confirmed the total depth at 1843.3. During the video the borehole became obstructed at 1775 feet, and so no other logs were HEADER NOTES: performed below the obstruction.

1407	1500	1407	270	FROM	RECORD											D FROM:	GR							USA	끋	끋	POLK	SR 6	HES	SFWMD
					D	OFWIND	RMBAKER LLC	RMB	HUSS DRILLING	1843.3	1840		FLOWMETER	4	09 Apr 21		M: GROUND SURFACE							-			<b>X</b>	SR 60 SUMICA	HESPERIDES ROAD	Ž
1843.3	2000	1500	1412	ТО			RLLC		ILLING				TER			:	FACE		V DAT	ELEV	H DAT	Υ	X					×	ROAD	
		6	10	SIZE	CASING RECORD	LIC	API					PUMPING	TROLLING	LOGGING	TYPE FLU															
		STEEL	PVC	MAT.	ECORD							PUMPING RATE (GPM)	TROLLING DIRECTION	LOGGING SPEED (FT/MIN)	TYPE FLUID IN HOLE															
		0	0	FROM										N)																
				1		N/A	N/A					N/A	вотн	08	WATER				SONIC	FLOWMETER	NATURAL GAMMA	CALIPER	ALL SERVICES:							
		1407	270	ТО																~	MMA		ŒS:							

RUN No DATE DRILLING MEASURED FROM: LOG MEASURED FROM: GRO

TYPE LOG

DEPTH-DRILLER

TWP SEC GDAT

RGE

PERMANENT DATUM:

LONG

WGS84

LATI CTRY **PROV**  STAT

CNTY FLD

#### PROJECT NOTES:

- -The spinner rate curves deflect to the positive direction with increasing flow from the well.

RUN

BOREHOLE RECORL

WITNESSED BY

SRVC RECORDED BY DRILLER DEPTH-LOGGER

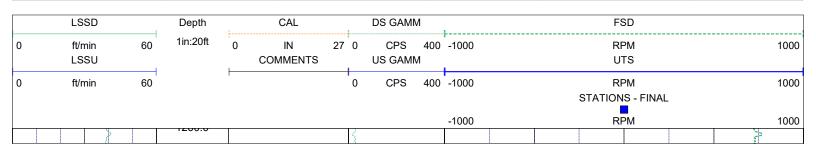
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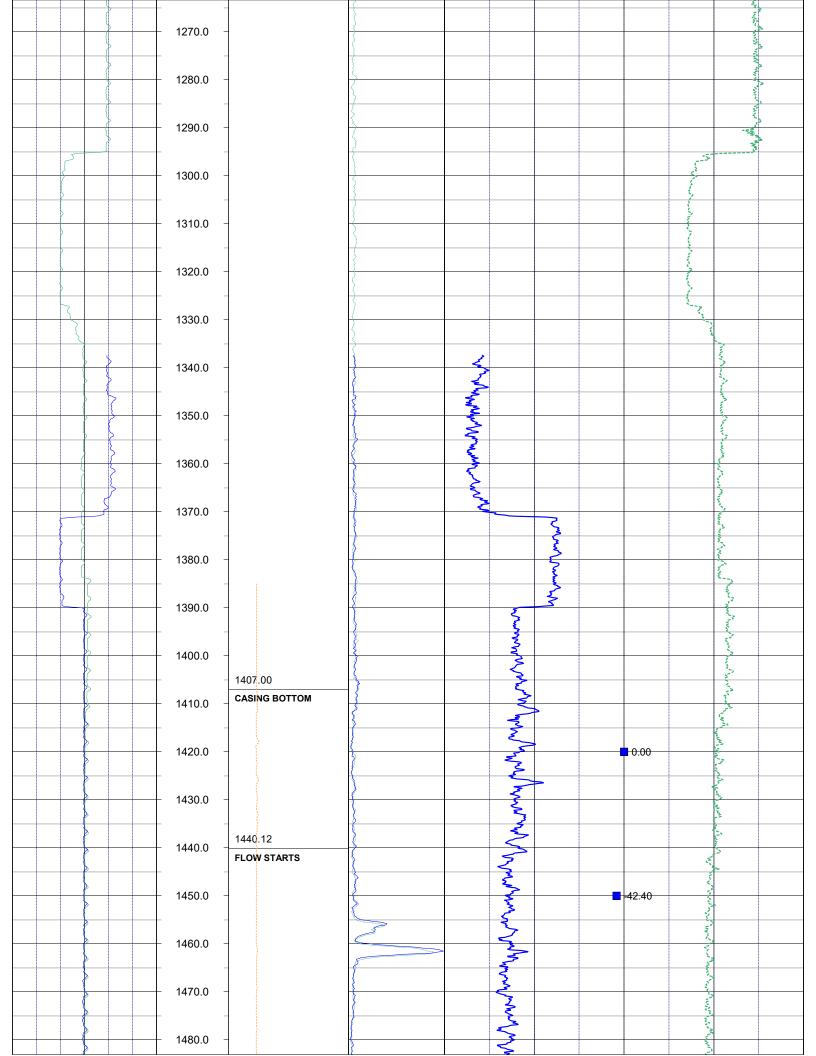
5.875

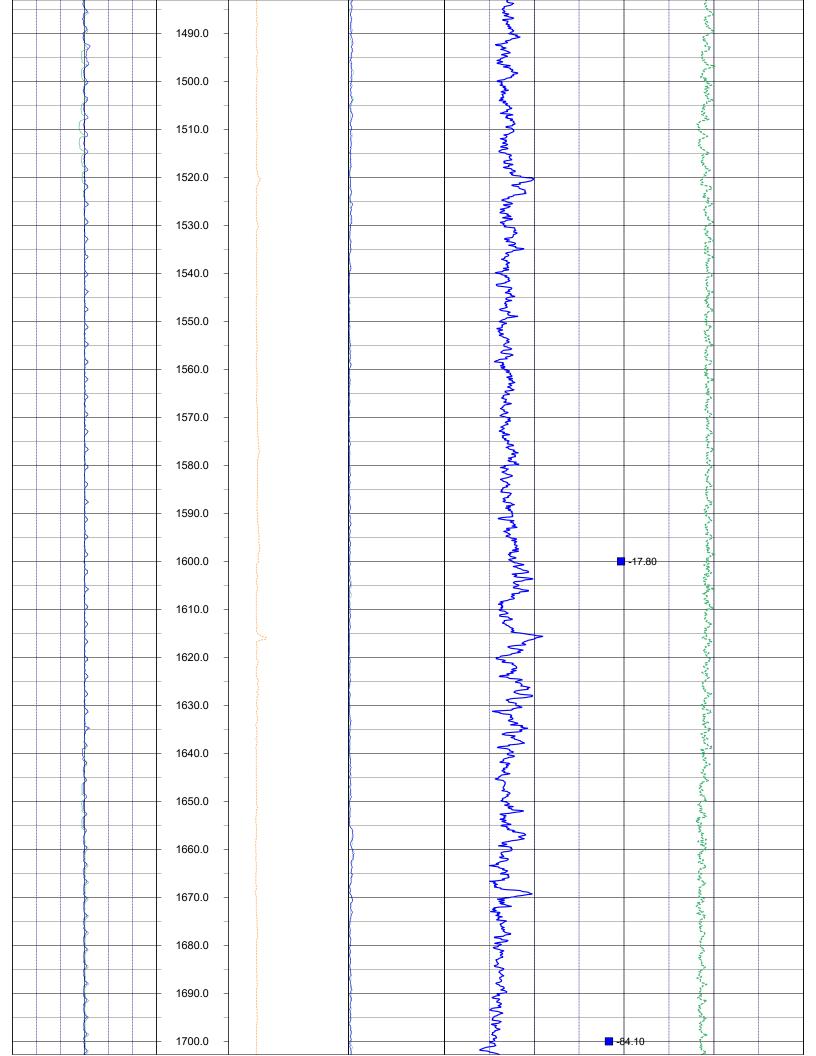
5.875 9.875 BIT

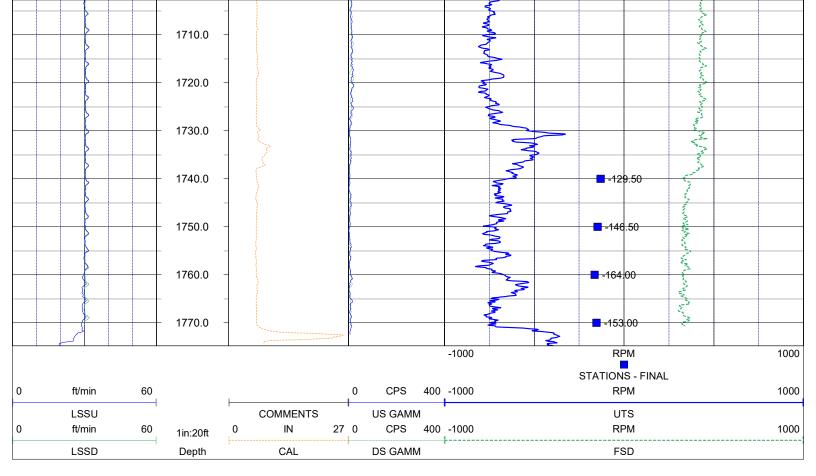
-The spinner rate curves are not corrected for borehole diameter. -The well was in a "static" condition; flow encountered was natural and uninduced.

		FLOWMETER LOG	CODES		
down static spinner rate	FSD	down static line speed	LSSD	natural gamma (w/annot.)	GAMM
up static spinner rate	UTS	up static line speed	LSSU	caliper	CAL
down dynamic spinner rate	DYND	down dynamic line speed	LSDD	repeat designation	R
up dynamic spinner rate	DYNU	up dynamic line speed	LSDU	percent flow	PFLO
static station spinner rate	FSU	dynamic station spinner rate	FSP	GPM flow	GPMFLO









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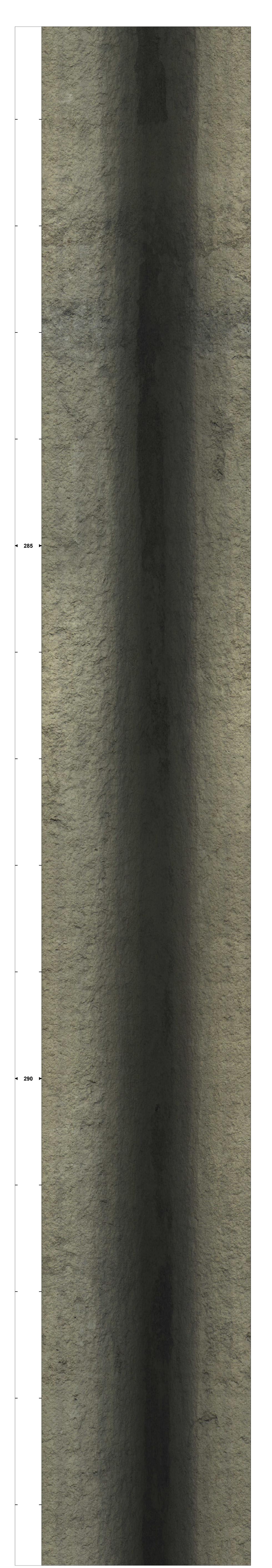
surveyed.

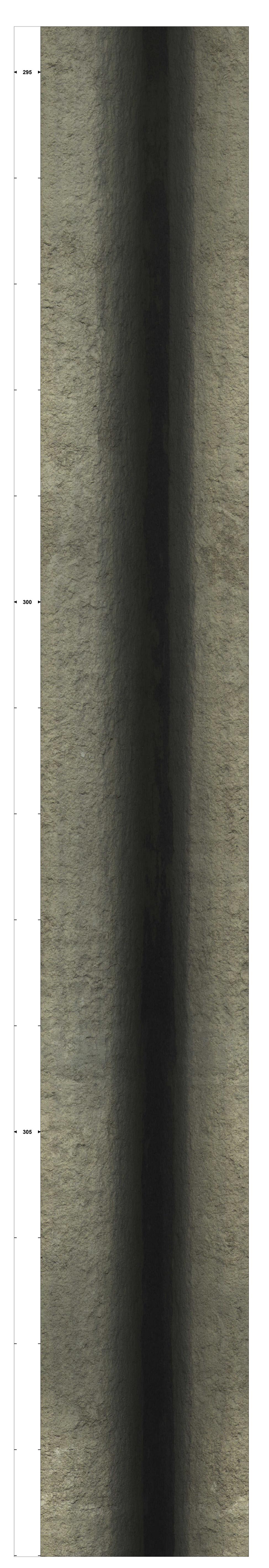
The geophysical well logs show subsurface conditions as they existed at the dates and locations shown, and it is not warranted that they are representative of subsurface conditions at other locations and times. If, at any time, different subsurface conditions if necessary.

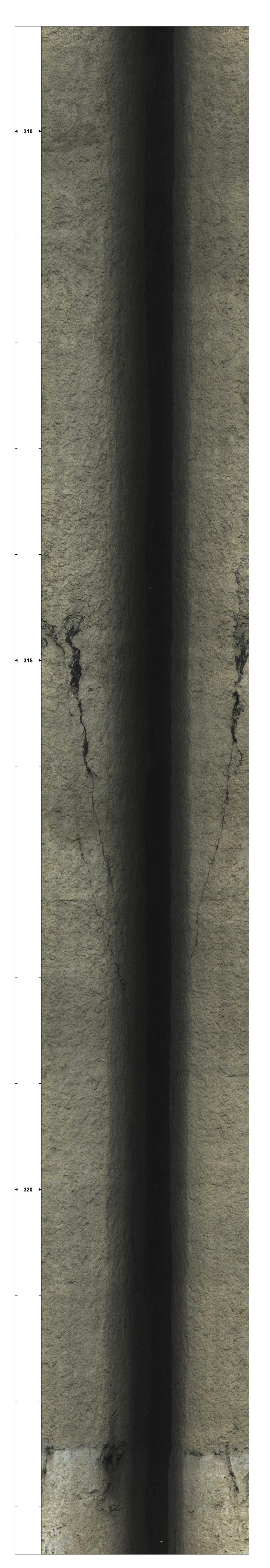
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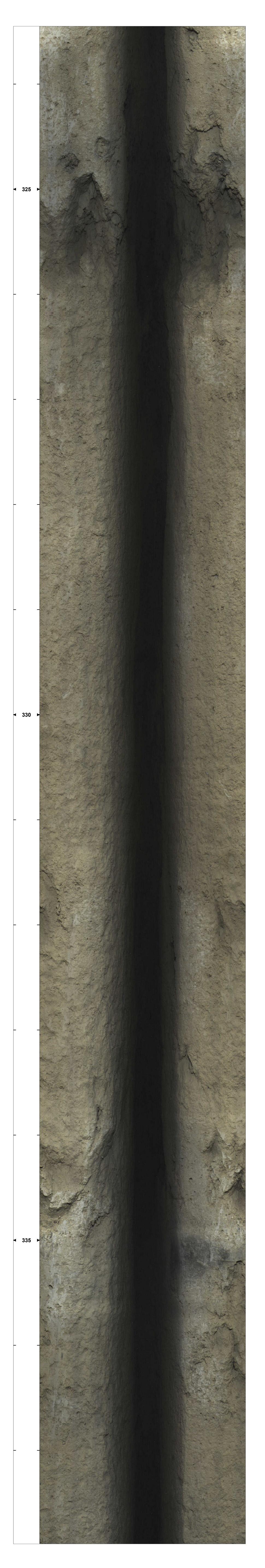
### APPENDIX E: OPTICAL BOREHOLE IMAGING LOGS

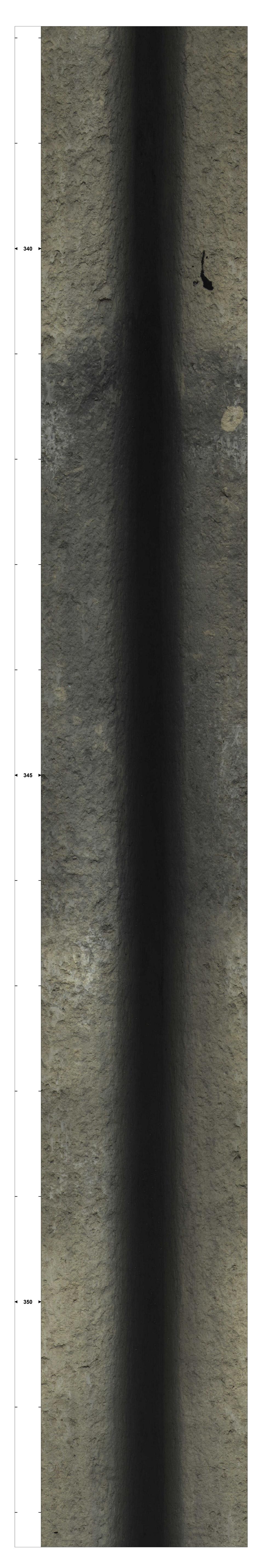


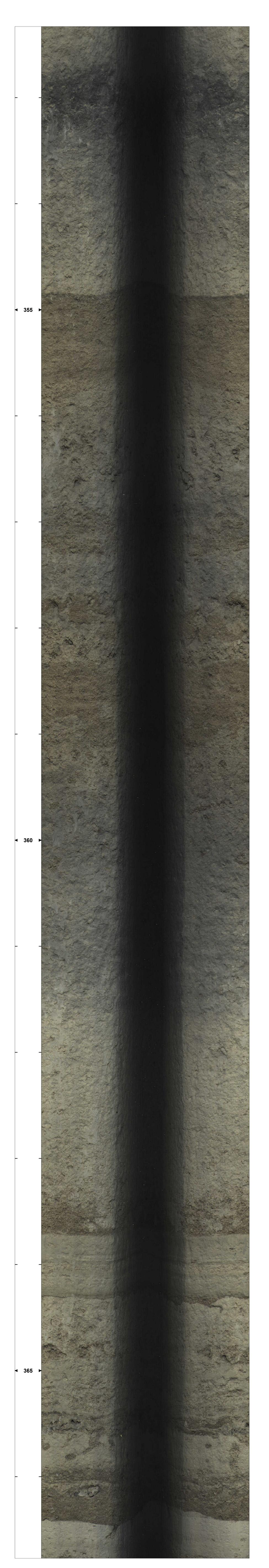


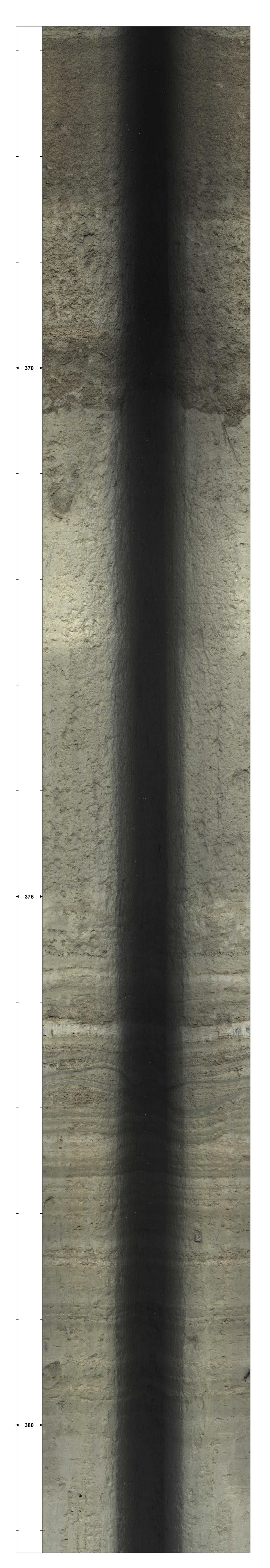


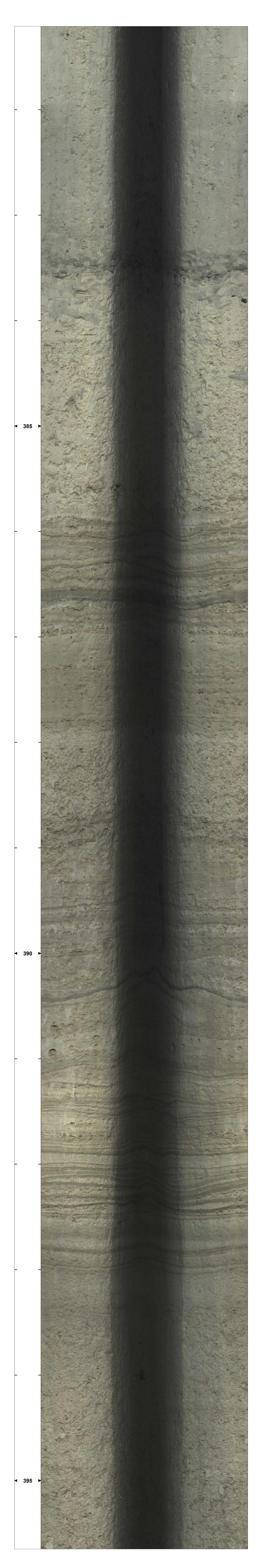


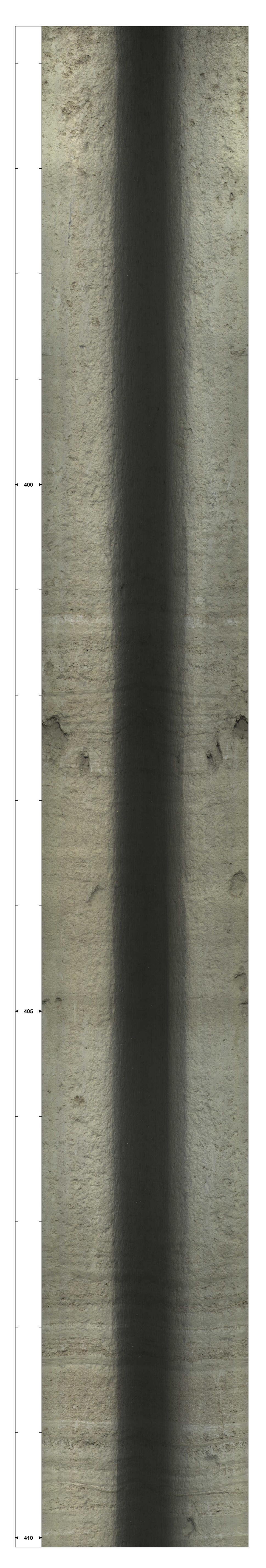


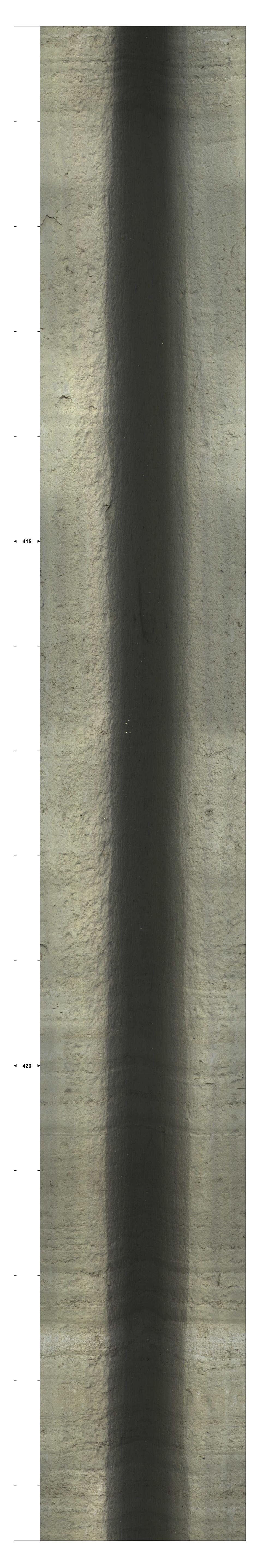


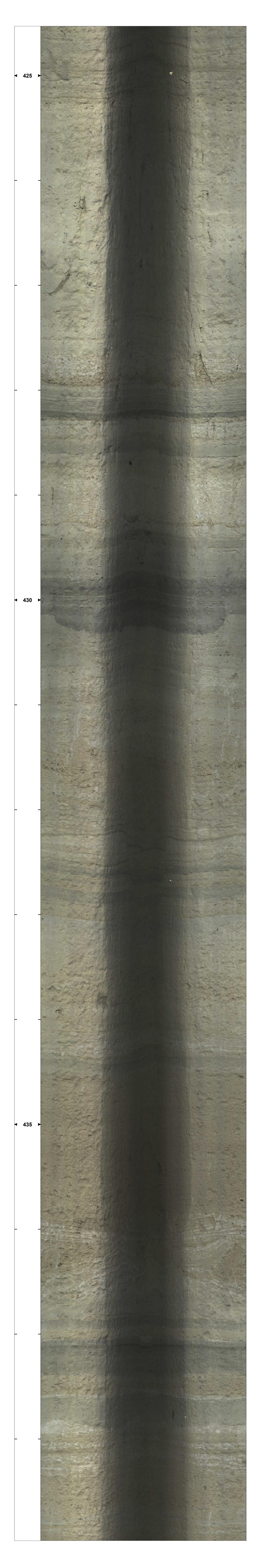




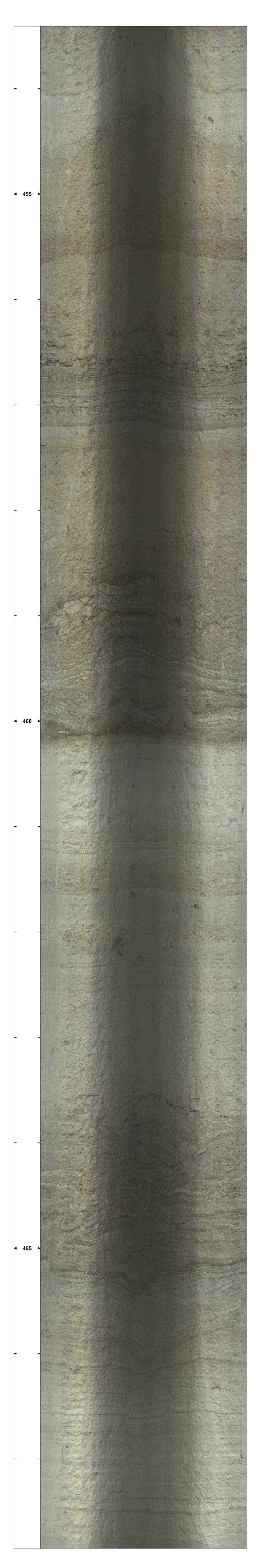


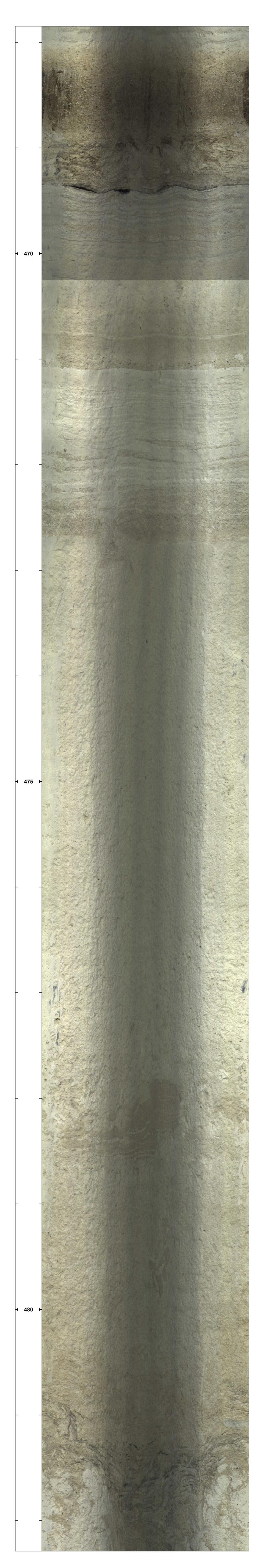


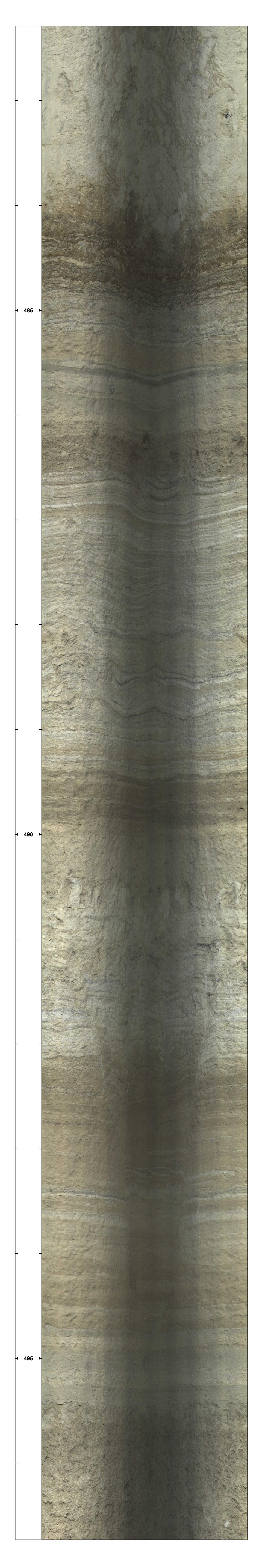


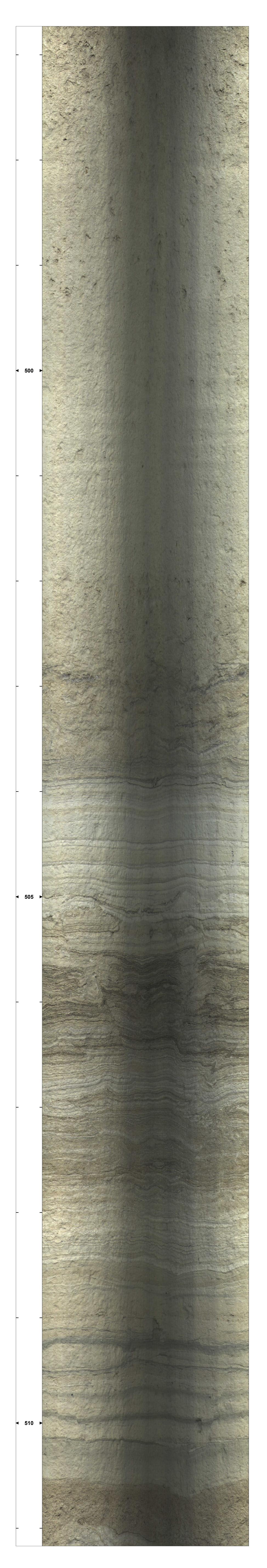


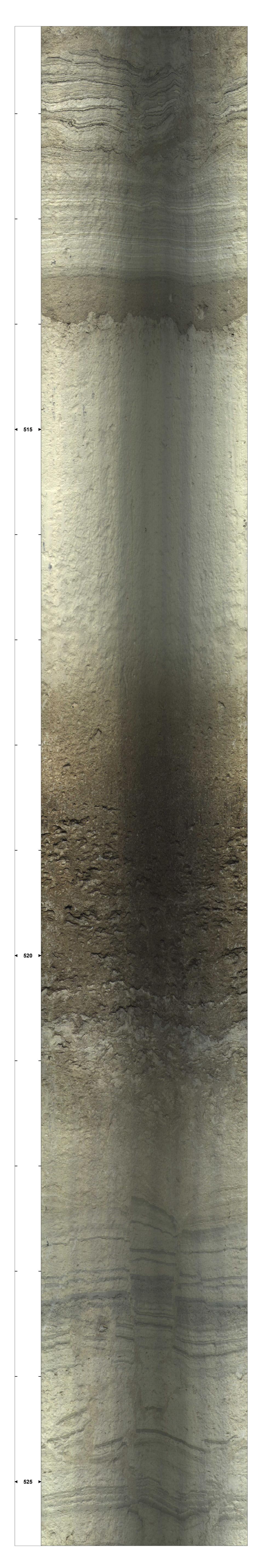


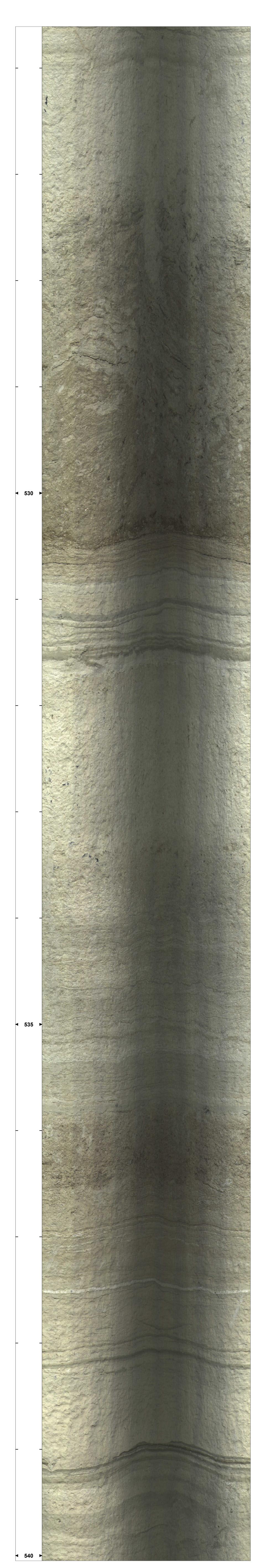






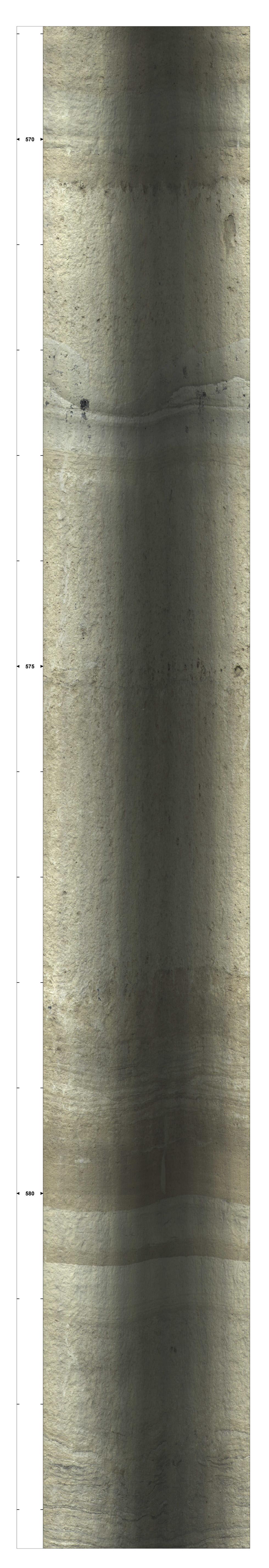


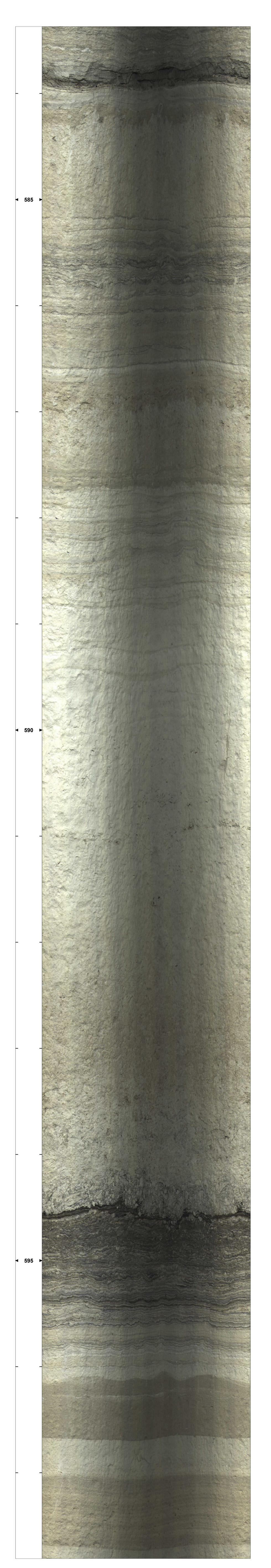


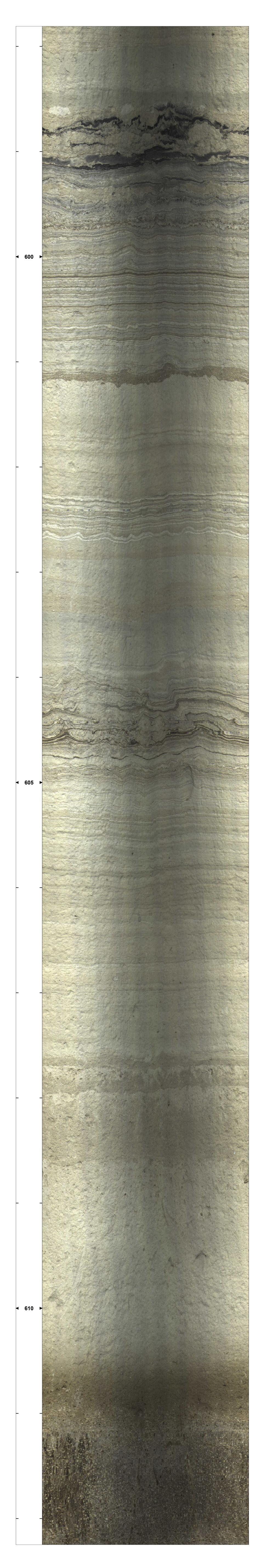




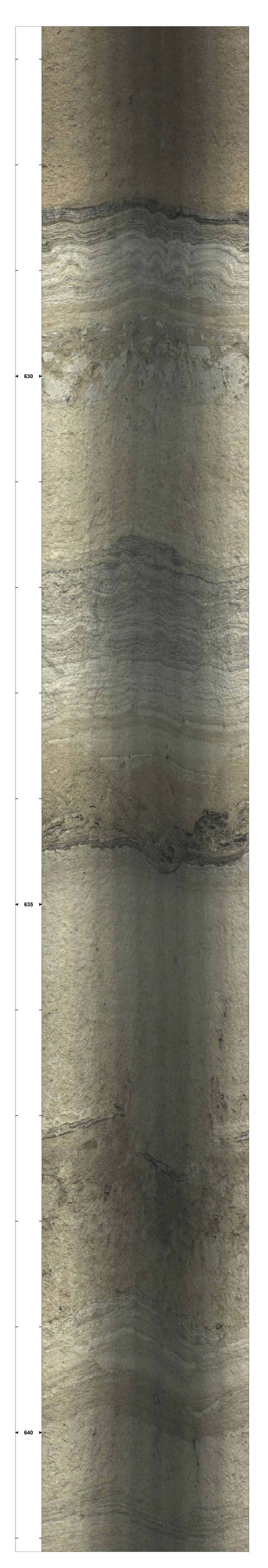


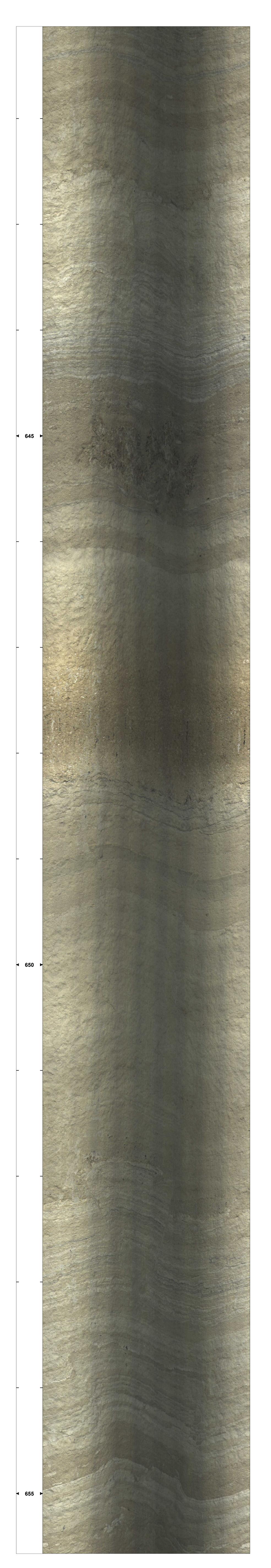






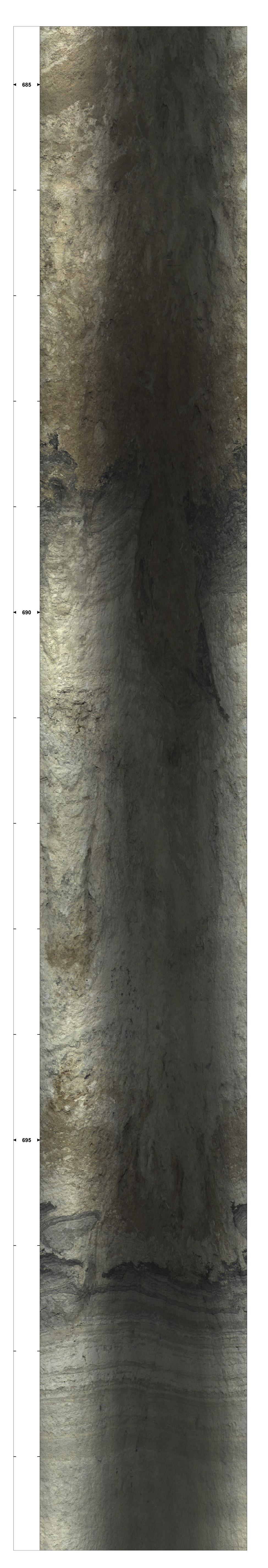


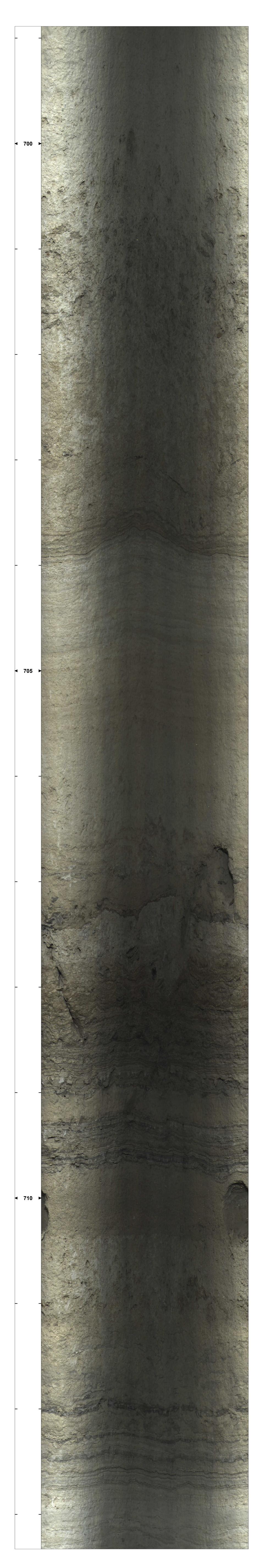




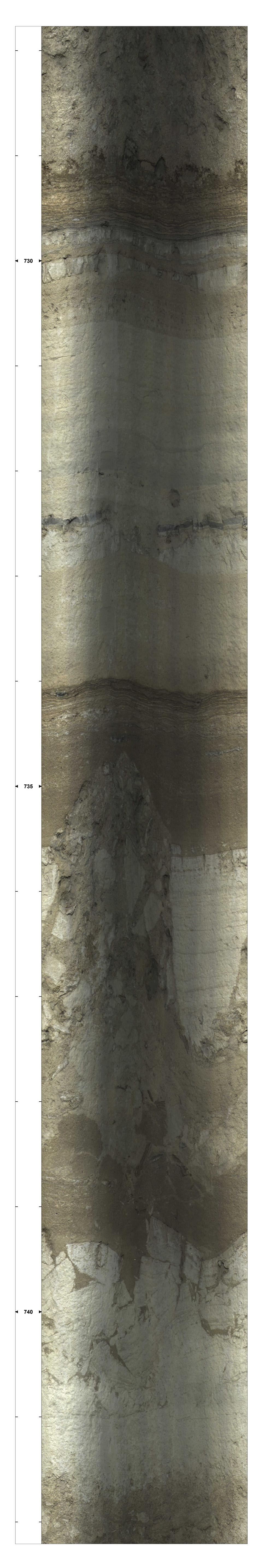


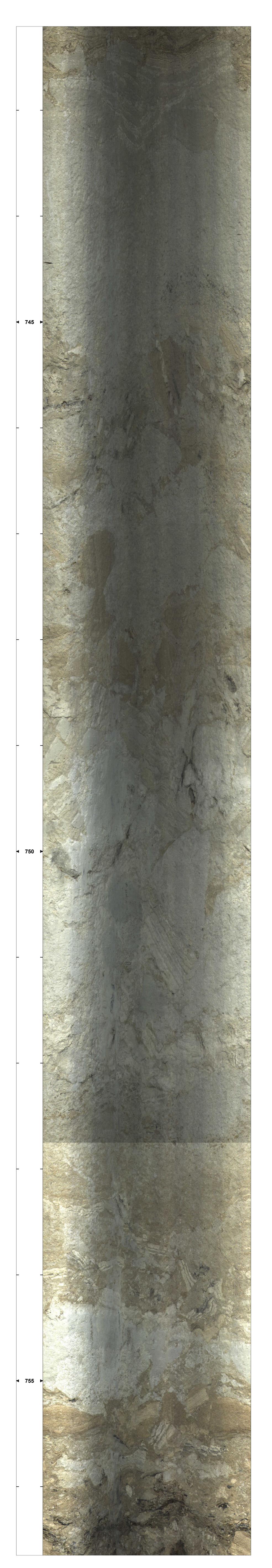




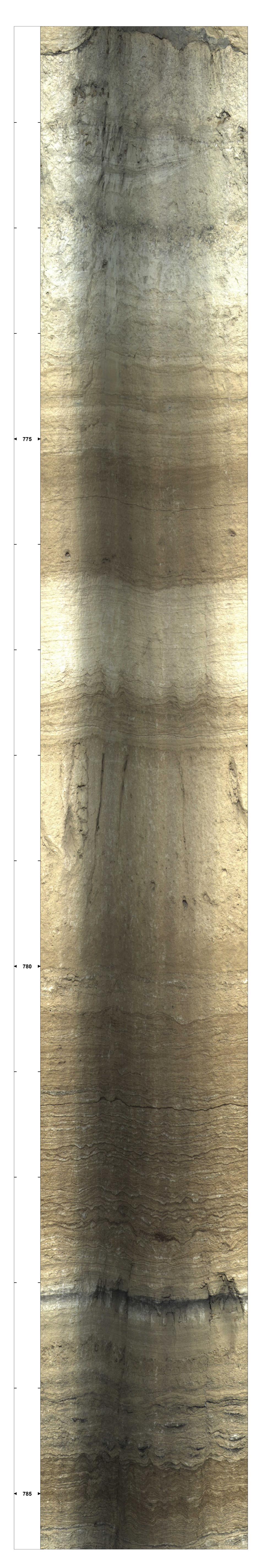








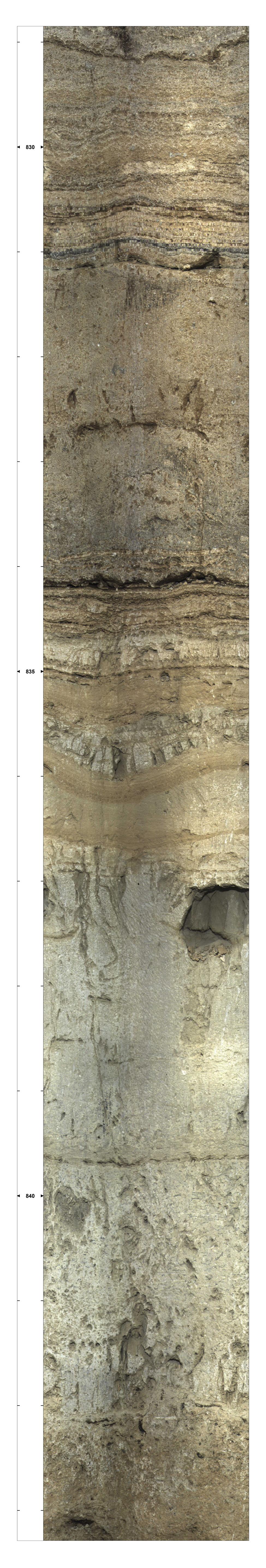




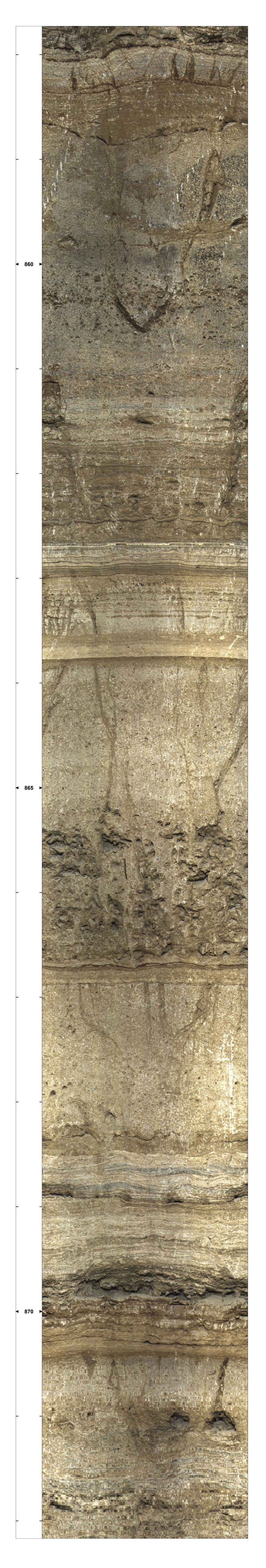






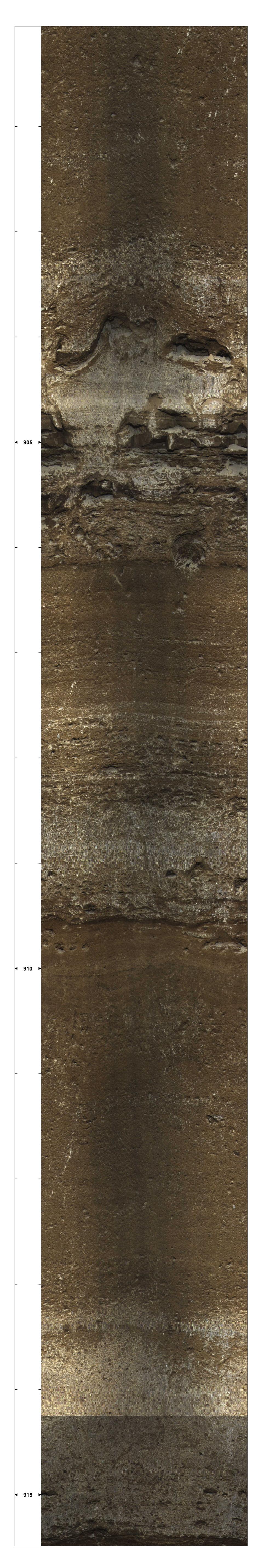


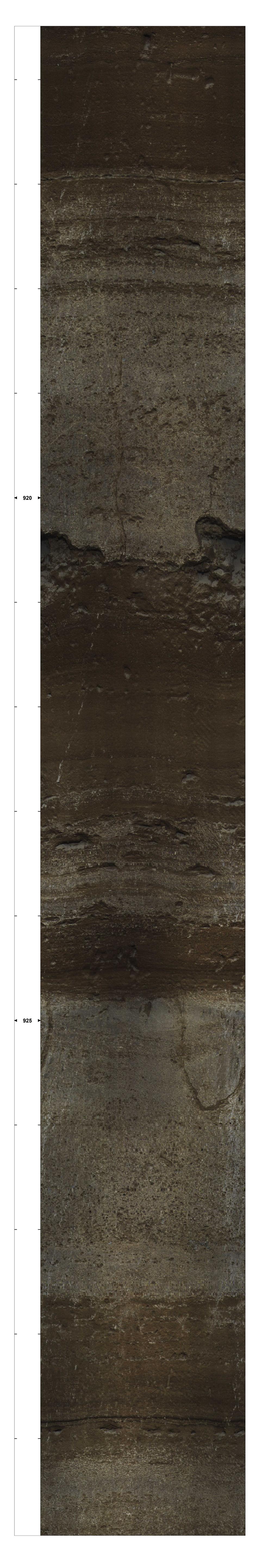






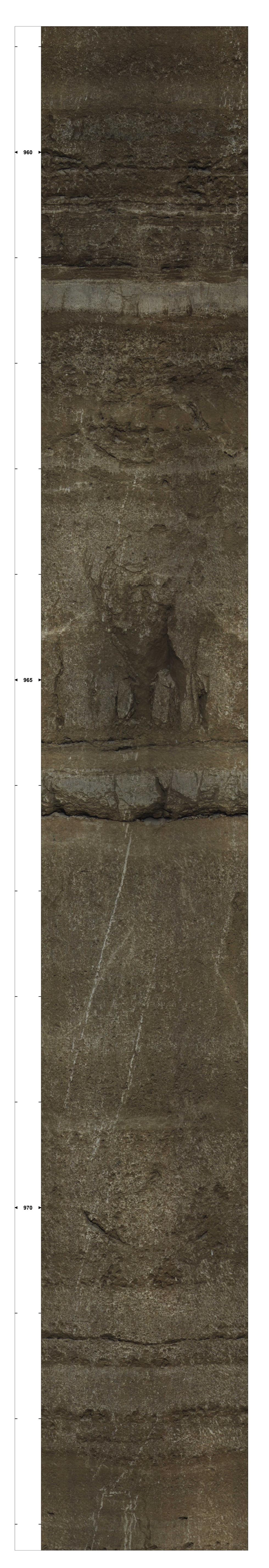


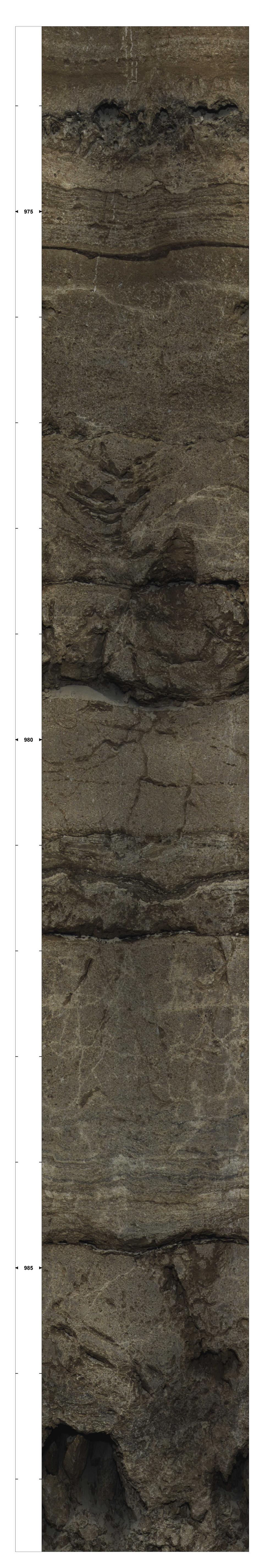


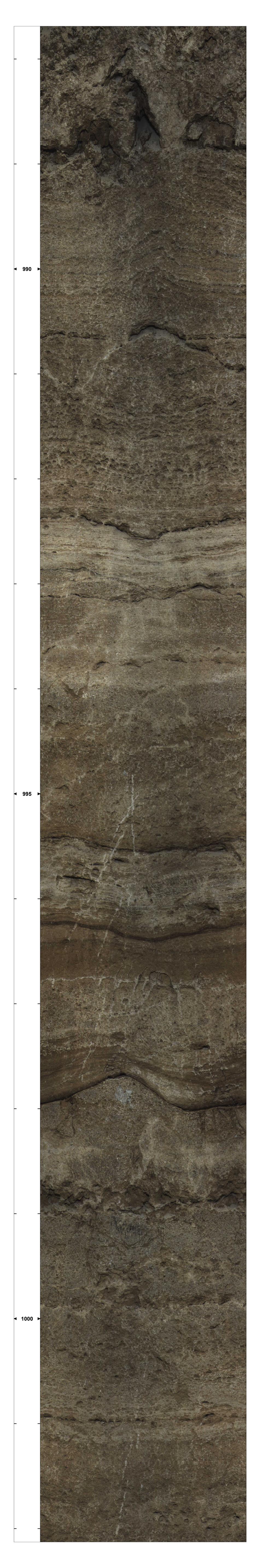


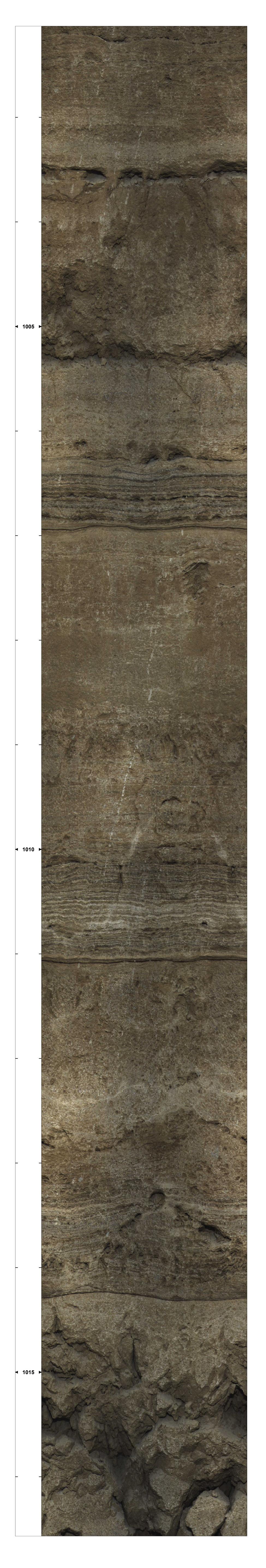




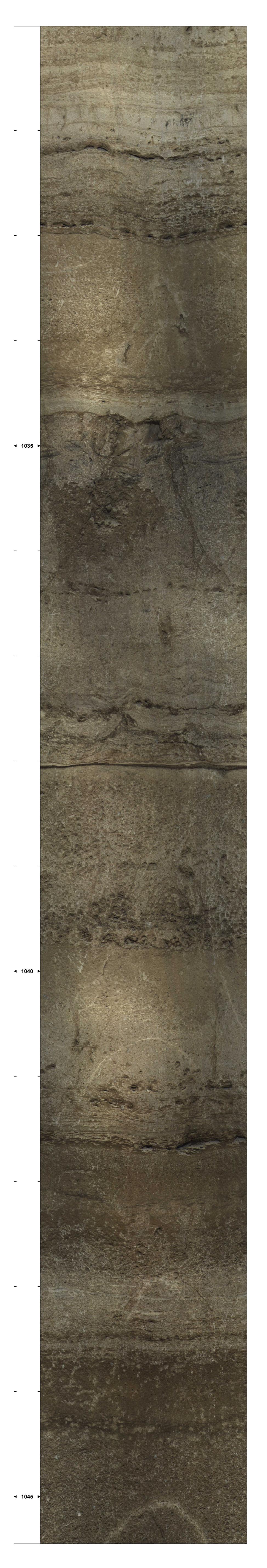


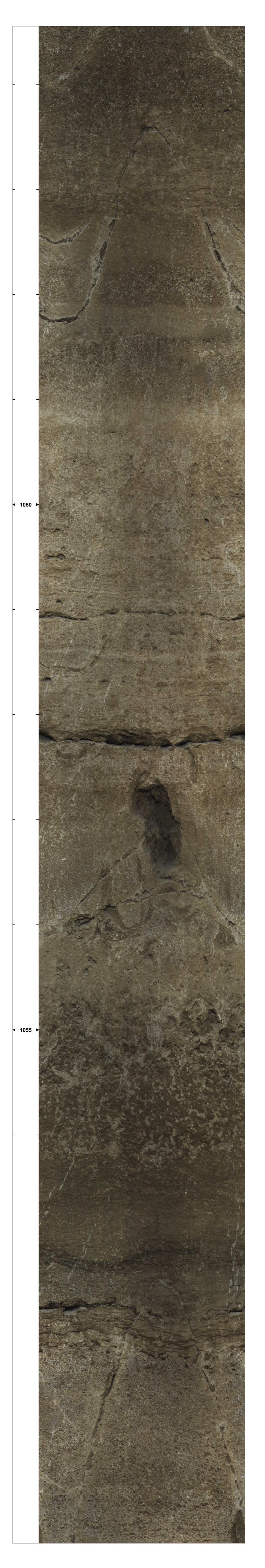


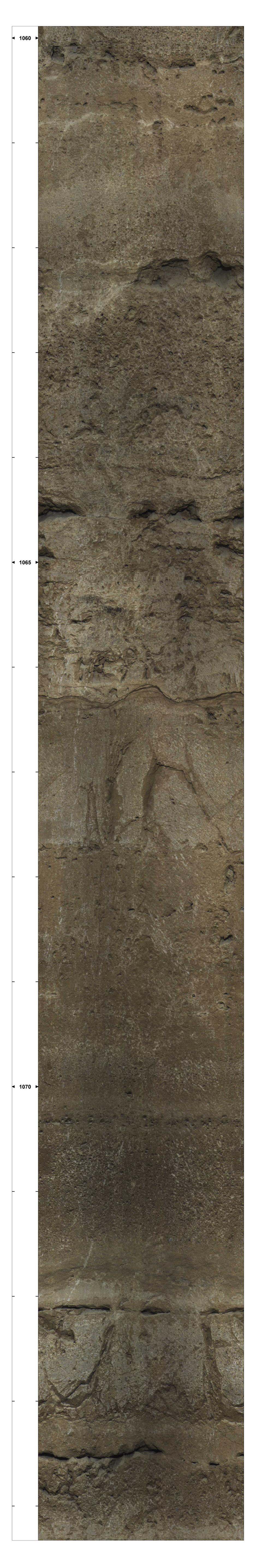


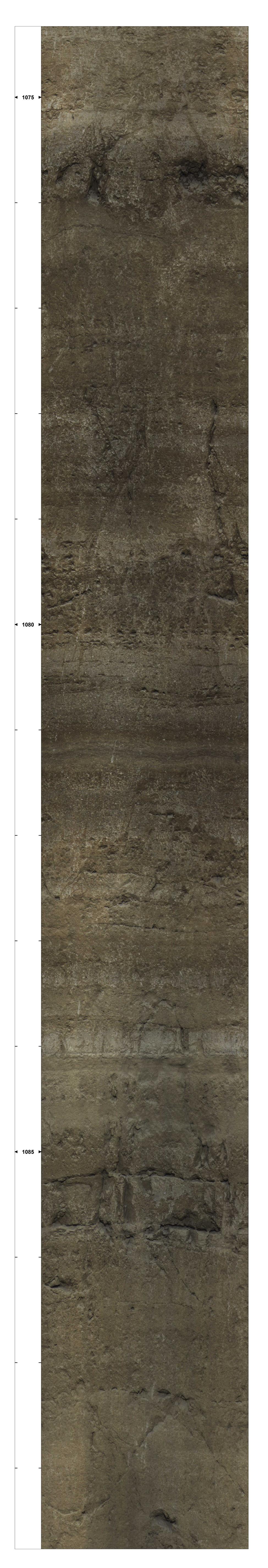


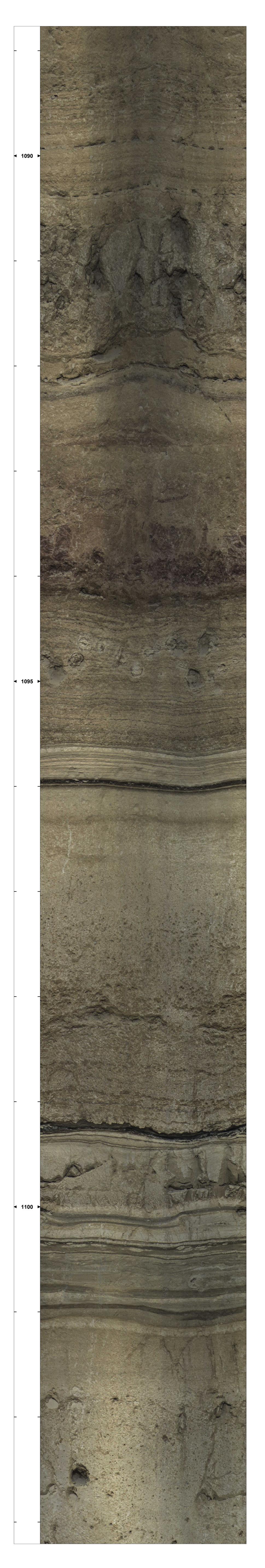


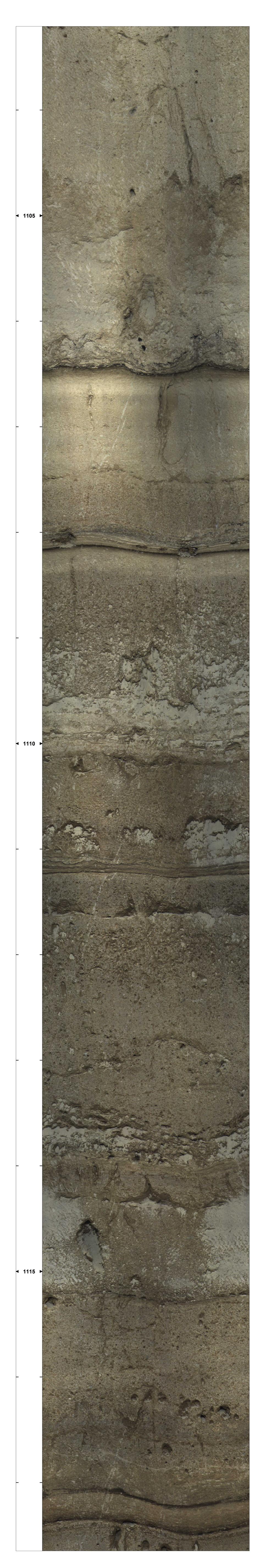


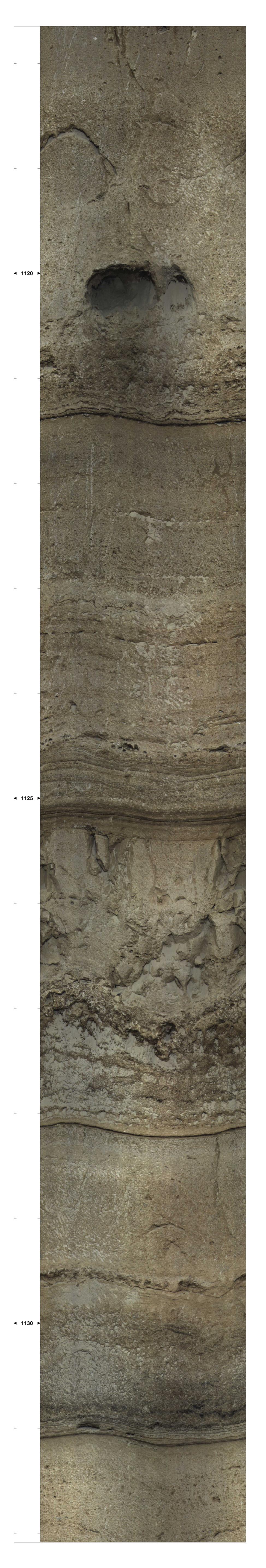


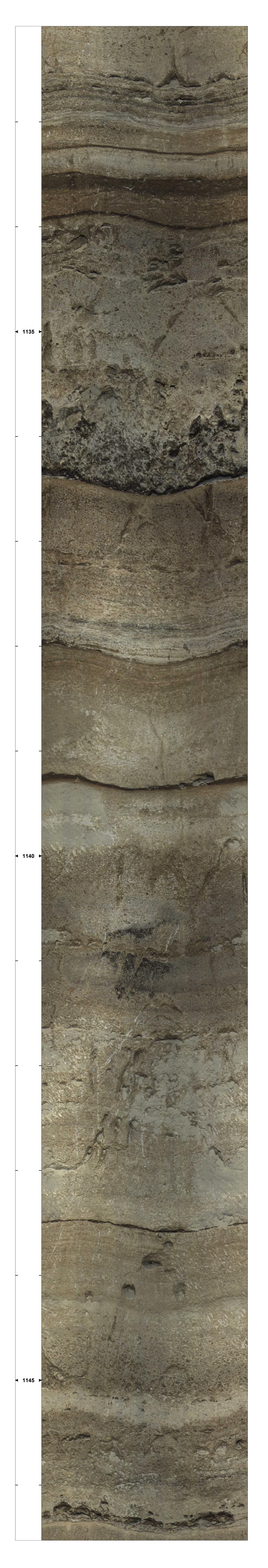


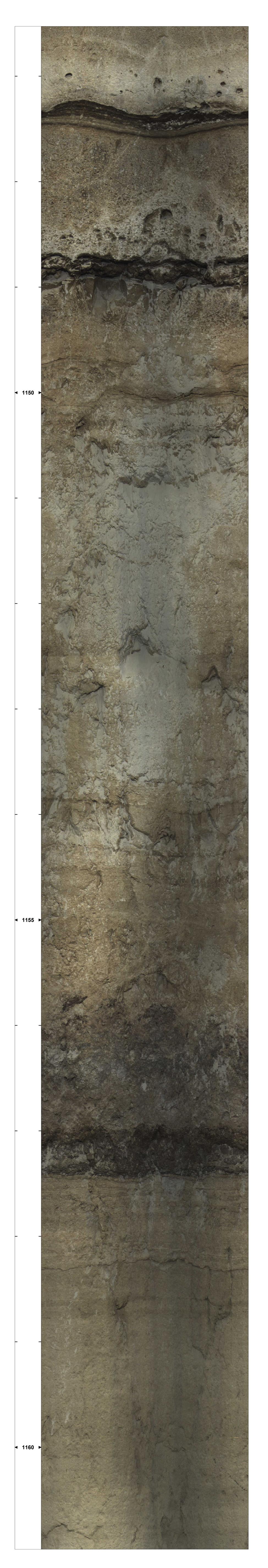




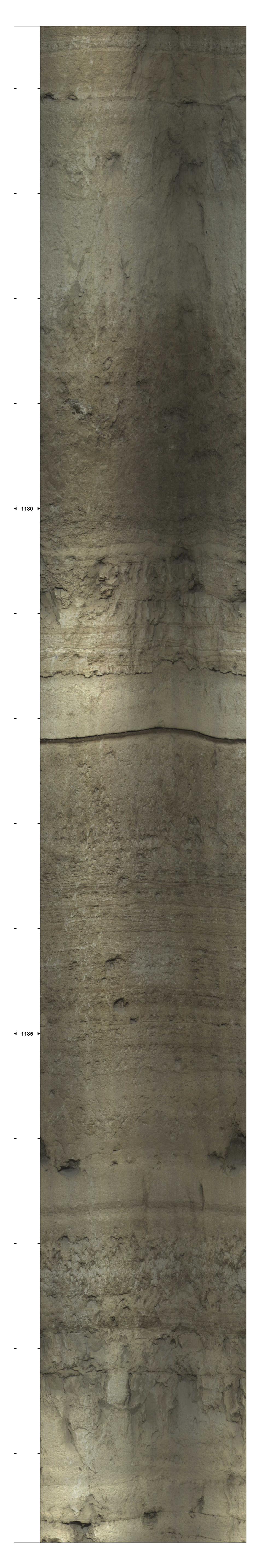




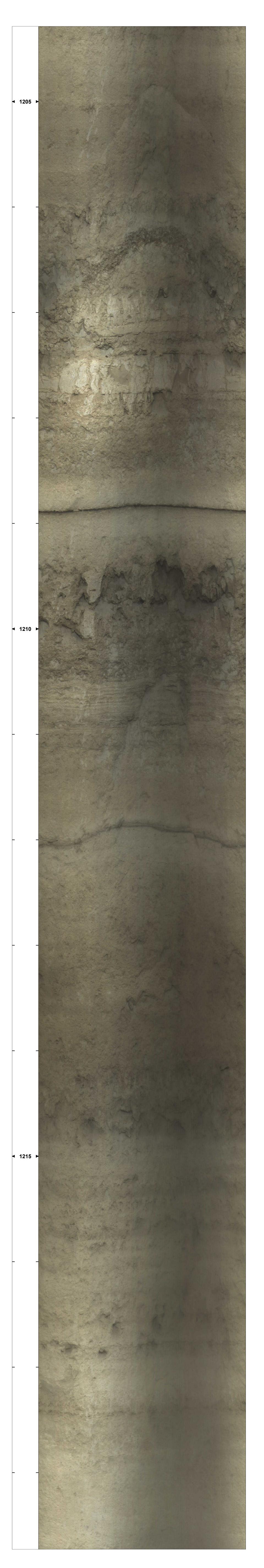


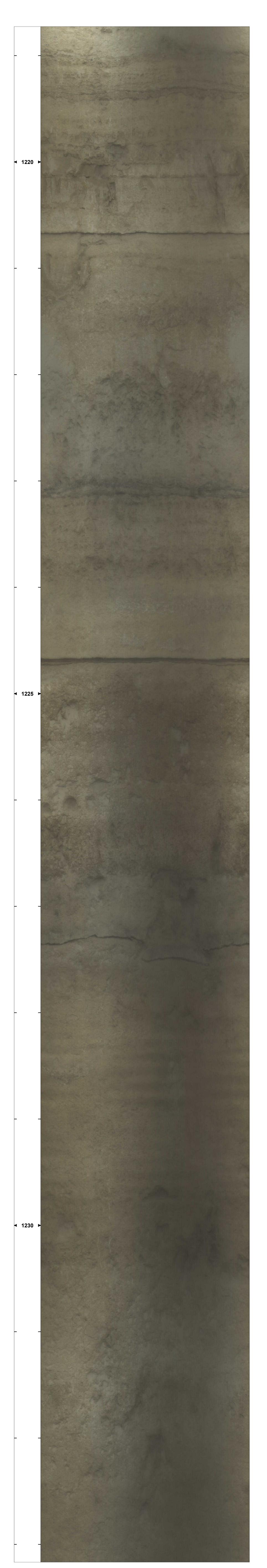






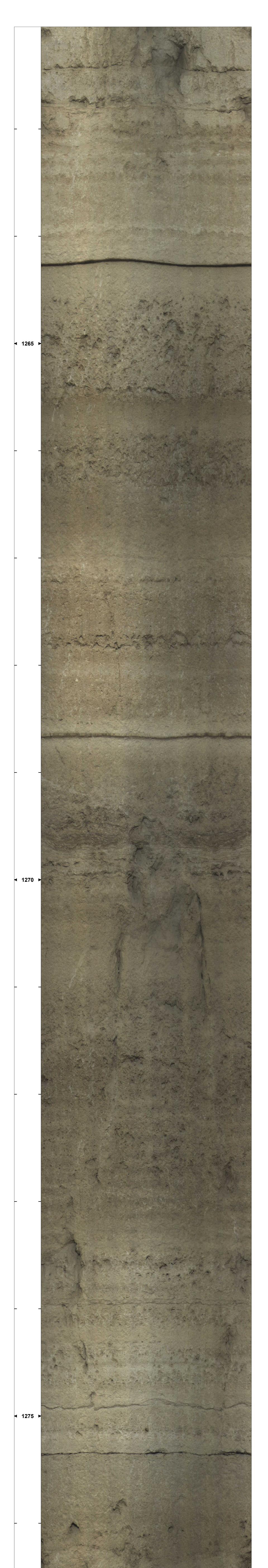


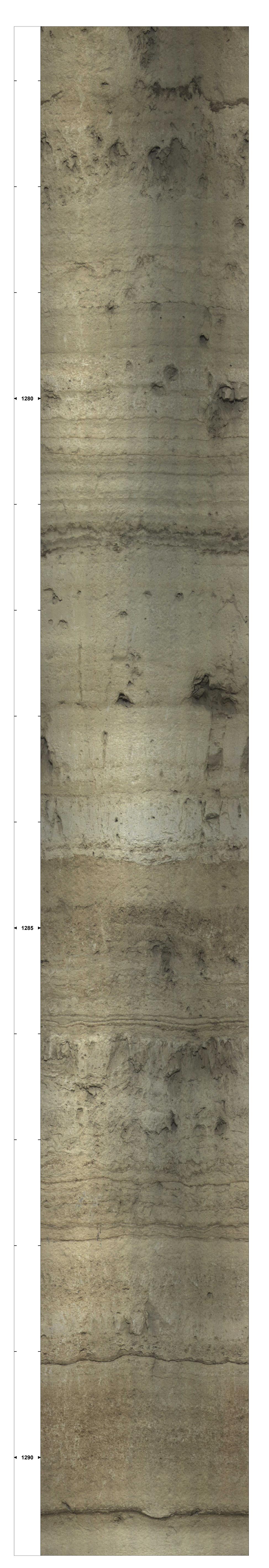








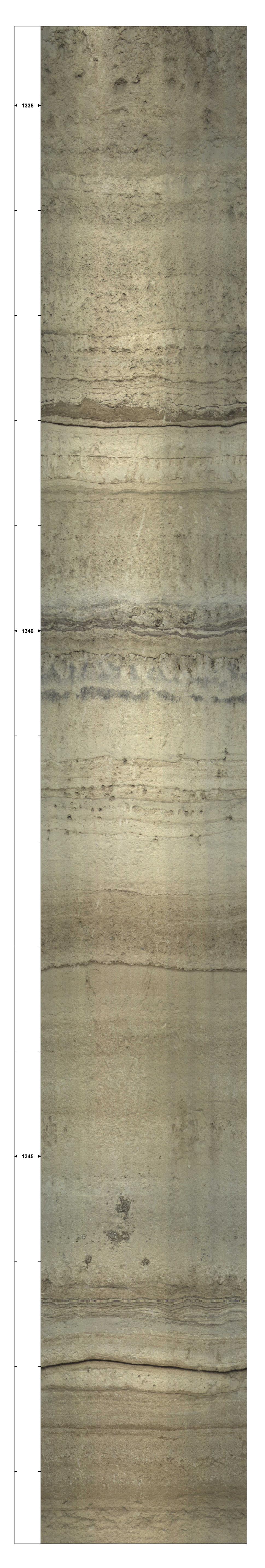


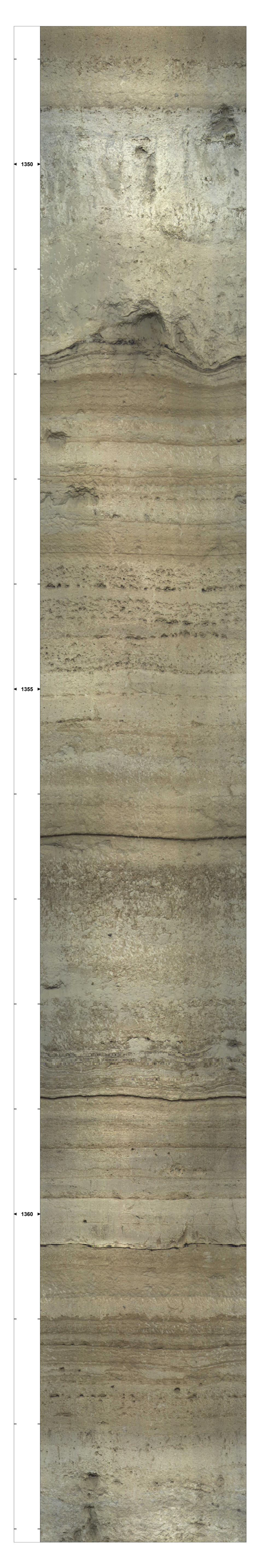


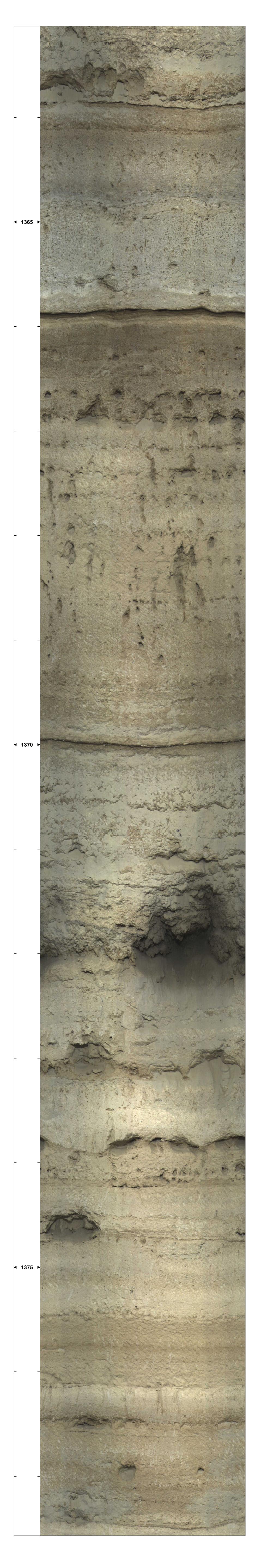


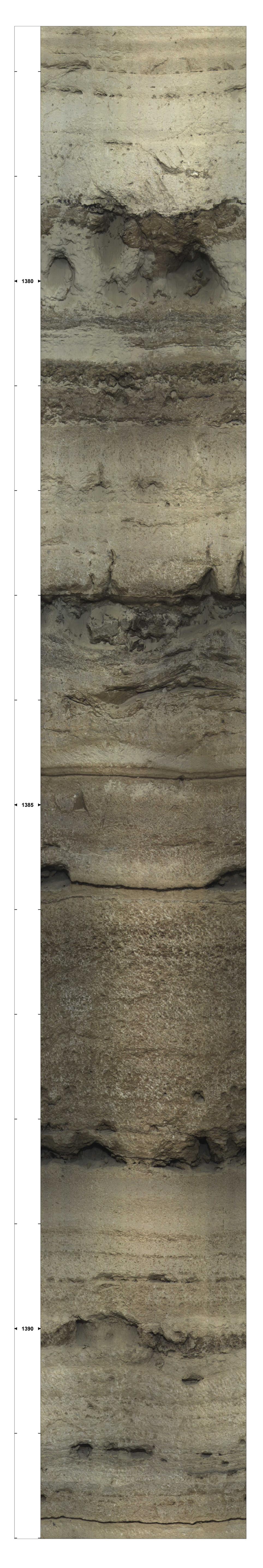


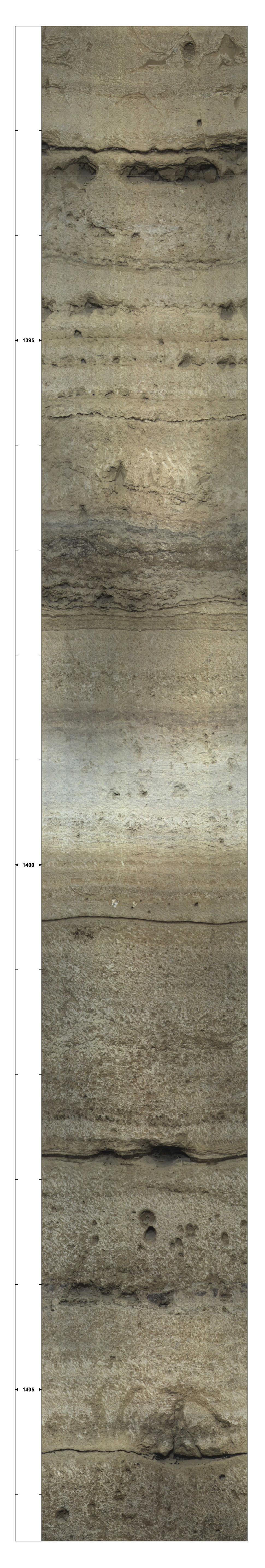










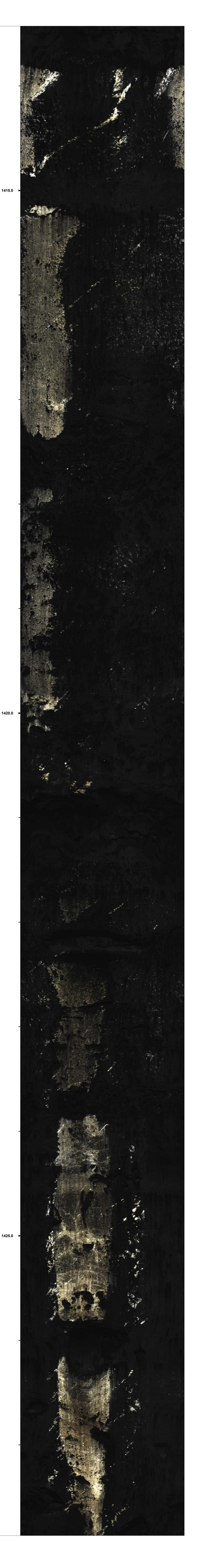


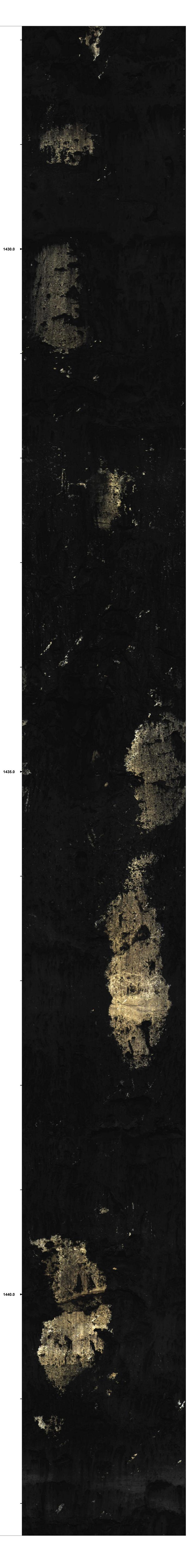




February 2021

1,840 Feet TD









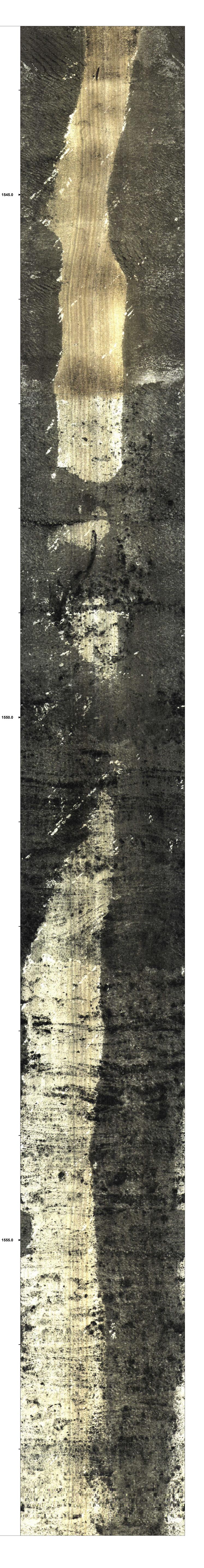


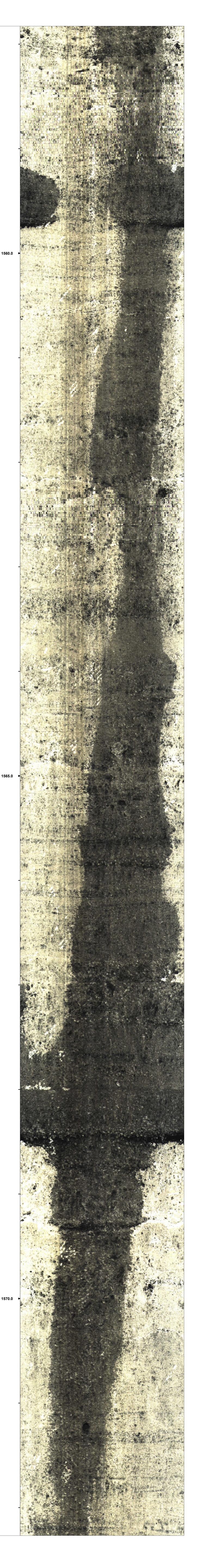


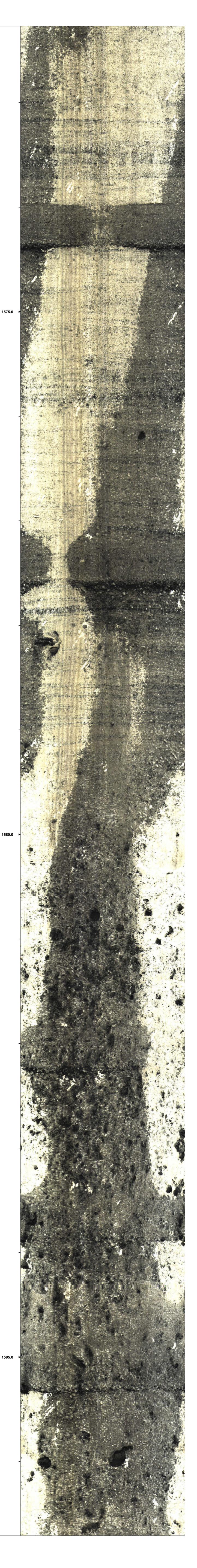


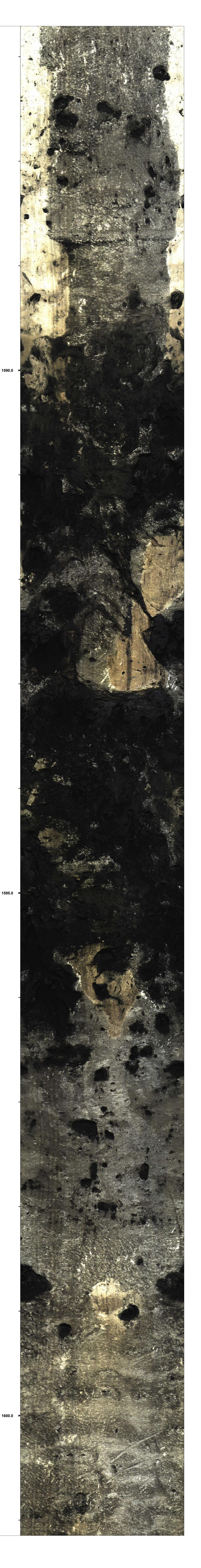












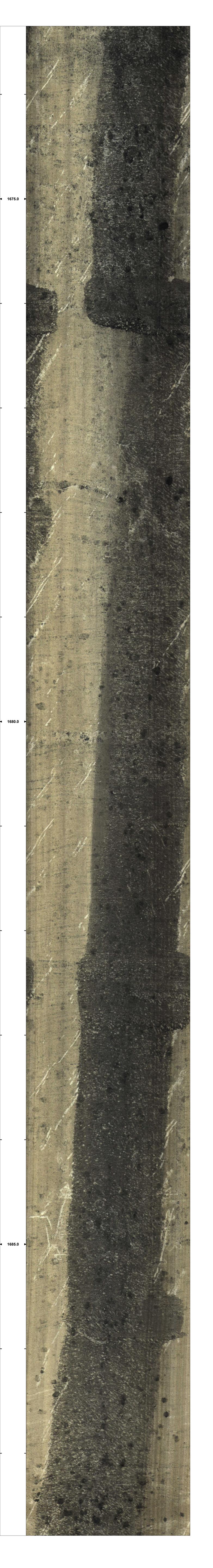


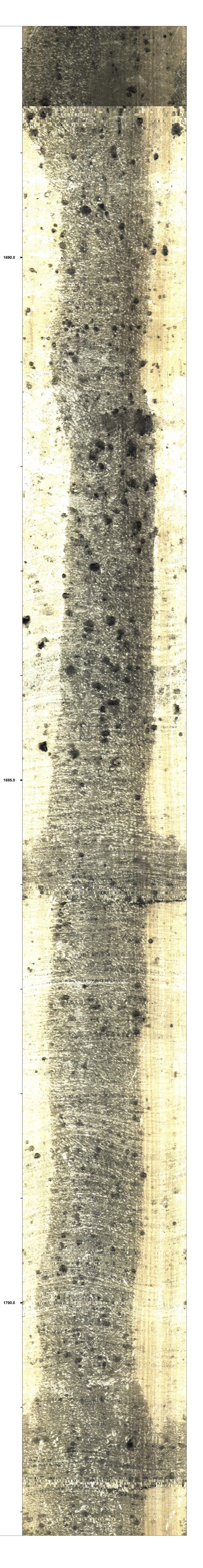


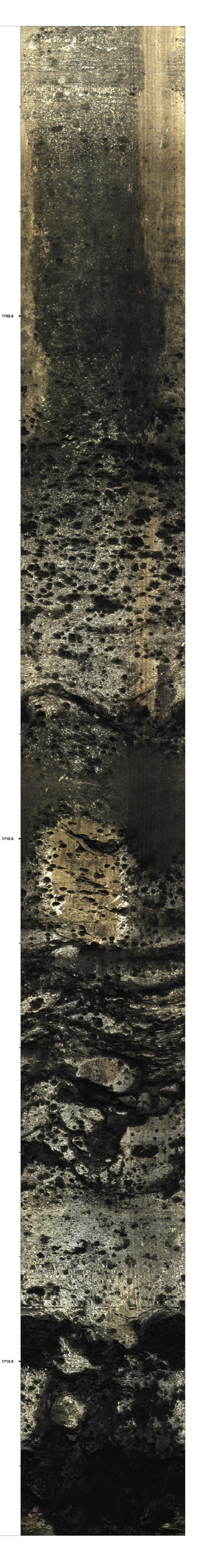


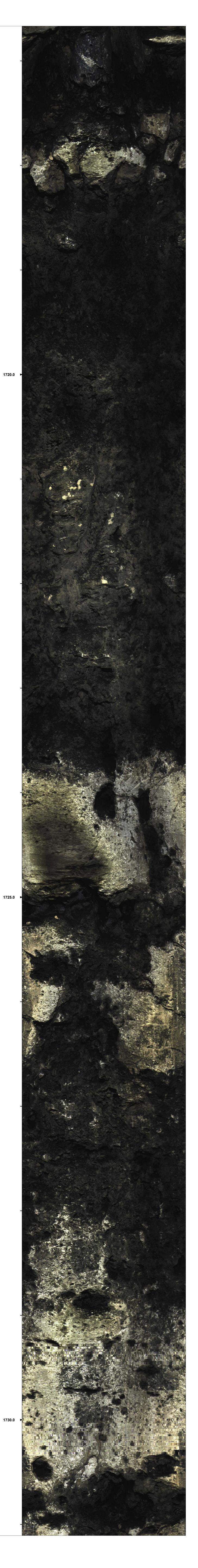












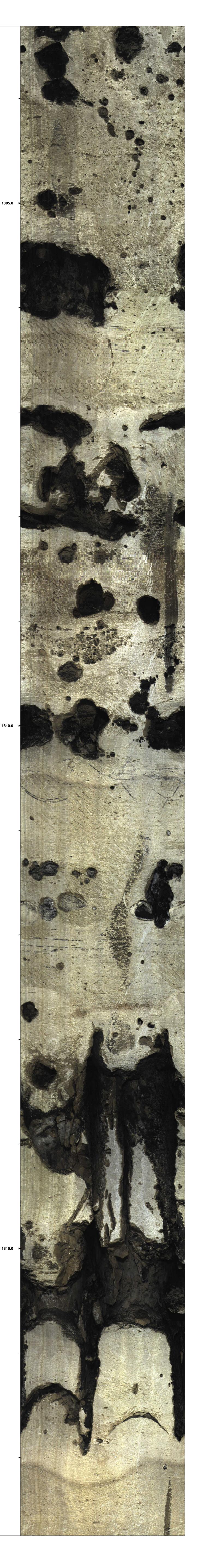














## APPENDIX F: POF-31 AND POF-32 LITHOLOGIC DESCRIPTIONS

	Depth Min, ft	Depth Max, ft										
Well	bls	bls	Thickness, ft	·	Rock Type	Porosity, percent Porosity	ype1 Indurati	on Other Feature	Fossil type Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-31 POF-31	85.0 90.0	90.0 100.0	5.0 10.0	SANDY CLAY; GRAY (N5) SANDY CLAY, 40% VERY PALE ORANGE SHELL FRAGMENTS; GRAY (N5)	SANDY CLAY SANDY CLAY				GRAY : N5 GRAY : N5			
				VERY PALE ORANGE SHELL FRAGMENTS, 20% DARK GREY CLAY, AND 20% GREENISH-GREY								
POF-31 POF-31	100.0 120.0	120.0 125.0	20.0 5.0	SANDSTONE  VERY PALE ORANGE SHELL FRAGMENTS, 10% DARK GREY CLAY, 30% GRAY SANDSTONE	SHELL SHELL				VERY PALE ORANGE : 10YR 8/2 VERY PALE ORANGE : 10YR 8/2			
POF-31	125.0	140.0	15.0	VERY PALE ORANGE SHELL FRAGMENTS, 5% DARK GREY CLAY, AND 30% GREY SANDSTONE	SHELL				VERY PALE ORANGE : 10YR 8/2			
POF-31	140.0	145.0	5.0	LIGHT BROWNISH GRAY SHELL FRAGMENTS, 30% GREY SANDSTONE, 3% PHOSPHATE 1% QUARTZ SAND	SHELL				LIGHT BROWNISH GRAY : 5YR 6/1			
1 01 -51	140.0	145.0	0.0	LIGHT BROWNISH GRAY SHELL FRAGMENTS, 40% GREY SANDSTONE, 3% DARK GREY CLAY, 1%	OTILLE				EIGHT BROWNIGH GIVAT : 511( G/T			
POF-31	145.0	155.0	10.0	PHOSPHATE, 1% QUARTZ SAND LIGHT BROWISH GRAY SHELL FRAGMENTS, 20% GRAY PHOSPHATIC DOLOSTONE, 3% DARK GREY	SHELL				LIGHT BROWNISH GRAY : 5YR 6/1			
POF-31	155.0	160.0	5.0	CLAY, 2% PHOSPHATE	SHELL				LIGHT BROWNISH GRAY : 5YR 6/1			
POF-31	160.0	175.0	15.0	LIGHT GRAY PHOSPHATIC DOLOSTONE, 10% LIGHT BROWISH GRAY SHELL FRAGMENTS, 7% DARK GREY CLAY, 5% PHOSPHATE	DOLOMITE				LIGHT GRAY : N7			
FOF-31	100.0	175.0	15.0	LIGHT GRAY PHOSPHATIC DOLOSTONE, 15% DARK GREY CLAY, 10% LIGHT BROWNISH GRAY	DOLOMITE				LIGHT GRAT . IV			
POF-31	175.0	185.0	10.0	SHELL FRAGMENTS, 5% PHOSPHATE GRAINS LIGHT GRAY PHOSPHATIC DOLOSTONE, 5% GREY CLAY, 20% SHELL FRAGMENTS, 7% PHOSPHATE	DOLOMITE				LIGHT GRAY : N7			
POF-31	185.0	200.0	15.0	GRAINS	DOLOMITE				LIGHT GRAY : N7			
DOE 24	000.0	005.0		LIGHT GRAY PHOSPHATIC DOLOSTONE, 30% GREY CLAY, 10% SHELL FRAGMENTS, 5%	DOLOMITE				LIGHT ODAY, NZ			
POF-31	200.0	205.0	5.0	PHOSPHATE GRAINS  DARK GREY CLAY, 30% LIGHT GRAY PHOSPHATIC DOLOSTONE, 10% SHELL FRAGMENTS, 10%	DOLOMITE				LIGHT GRAY : N7			
POF-31	205.0	225.0	20.0	PHOSPHATE GRAINS	CLAY				DARK GRAY : N3			
POF-31	225.0	230.0	5.0	DARK GREY CLAY, 30% LIGHT GRAY DOLOSTONE, 10% SHELL FRAGMENTS, 5% PHOSPHATE GRAINS, 1% SHARKS TEETH FRAGMENTS	CLAY				DARK GRAY : N3			
505.01				DARK GREY CLAY, 30% LIGHT GRAY DOLOSTONE, 10% SHELL FRAGMENTS, 20% PHOSPHATE								
POF-31	230.0	245.0	15.0	GRAINS LIGHT GRAY DOLOSTONE, 10% LIGHT GREEN CLAY, 10% SHELL FRAGMENTS, 20% PHOSPHATE	CLAY				DARK GRAY : N3			-
POF-31	245.0	250.0	5.0	GRAINS	DOLOMITE				LIGHT GRAY : N7			
POF-31	250.0	255.0	5.0	LIGHT GRAY DOLOSTONE, 10% LIGHT GREEN CLAY, 30% SHELL FRAGMENTS, 5% PHOSPHATE IGRAINS, 1% SHARKS TEETH FRAGMENTS, 10% VERY PALE ORANGE LIMESTONE, FORAMINIFERA	DOLOMITE			LEPIDOCYCLINA	FORAMINIFERA LIGHT GRAY : N7			
				LIGHT GRAY DOLOSTONE, 5% LIGHT GREEN CLAY, 30% SHELL FRAGMENTS, 5% PHOSPHATE								
POF-31	255.0	260.0	5.0	GRAINS, 10% VERY PALE ORANGE LIMESTONE, FORAMINIFERA LIGHT GRAY DOLOSTONE. 40% SHELL FRAGMENTS. 1% PHOSPHATE. 10% VERY PALE ORANGE	DOLOMITE			LEPIDOCYCLINA	FORAMINIFERA LIGHT GRAY : N7			
POF-31	260.0	265.0	5.0	LIMESTONE, FORAMINIFERA	DOLOMITE			LEPIDOCYCLINA	FORAMINIFERA LIGHT GRAY : N7			
POF-31	265.0	270.0	5.0	LIGHT GRAY DOLOSTONE, 10% VERY PALE ORANGE LIMESTONE, 30% SHELL FRAGMENTS, 10% LIGHT GREEN CLAY, FORAMINIFERA, LEPIDOCYCLINA	DOLOMITE			LEPIDOCYCLINA	FORAMINIFERA LIGHT GRAY : N7			
				VERY PALE ORANGE SHELL FRAGMENTS, 10% VERY PALE ORANGE LIMESTONE, FORAMINIFERA,								
POF-31	270.0	280.0	10.0	LEPIDOCYCLINA VERY PALE ORANGE SHELL FRAGMENTS, 20% VERY PALE ORANGE LIMESTONE, FORAMINIFERA,	SHELL			LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	280.0	285.0	5.0	LEPIDOCYCLINA	SHELL			LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	285.0	290.0	5.0	VERY PALE ORANGE LIMESTONE, 30% SHELL FRAGMENTS, FORAMINIFERA, LEPIDOCYCLINA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR	LIMESTONE-WACKESTONE			LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	290.0	292.0	2.0	POROSITY; POOR INDURATION; LEPIDOCYCLINA	LIMESTONE-WACKESTONE	20 INTERGRAN	ULAR POOF	R LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	292.0	302.0	10.0	NO RECOVERY  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR								
POF-31	302.0	304.0	2.0	POROSITY; POOR INDURATION; MILIOLID	LIMESTONE-WACKESTONE	20 INTERGRAN	ULAR POOF	R MILIOLID	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	304.0	314.0	10.0	NO RECOVERY  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR								
POF-31	314.0	315.3	1.3	POROSITY; POOR INDURATION; LEPIDOCYCLINA	LIMESTONE-WACKESTONE	20 INTERGRAN	ULAR POOF	R LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
DOE 04	245.0	047.0	4.7	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	00 INTERORAN	III AD	L EDIDOOYOU NA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	315.3	317.0	1.7	POOR INDURATION; LEPIDOCYCLINA  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR	LIMESTONE-PACKSTONE	30 INTERGRAN	ULAR POOF	R LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	317.0	319.6	2.6	POROSITY; POOR INDURATION; LEPIDOCYCLINA	LIMESTONE-WACKESTONE	20 INTERGRAN	ULAR POOF	R LEPIDOCYCLINA	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
POF-31	319.6	320.0	0.4	NO RECOVERY								
DOE 04	200.0	200.0	0.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC	LIMEOTONIE WAR OVERTONIE	30 INTERGRAN		LEPIDOCYCLINA,	FORMANIERA WERVERA FORMANIE 40VR 00			
POF-31	320.0	320.6	0.6	POROSITY; POOR INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30 INTERGRAN	ULAR POOF	R BIVALVES, GASTROPODS	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
505.04				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC				LEPIDOCYCLINA,				
POF-31	320.6	321.2	0.6	POROSITY; MODERATE INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30 INTERGRAN	ULAR MODERA	ATE BIVALVES, GASTROPODS	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			-
505.04				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC				LEPIDOCYCLINA,				
POF-31	321.2	322.4	1.2	POROSITY; POOR INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30 INTERGRAN	ULAR POOF	R BIVALVES, GASTROPODS	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			-
505.04				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC				LEPIDOCYCLINA,				
POF-31	322.4	323.1	0.7	POROSITY; MODERATE INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30 INTERGRAN	ULAR MODERA	ATE BIVALVES, GASTROPODS	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC				LEPIDOCYCLINA,				
POF-31	323.1	323.7	0.6	POROSITY; POOR INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30 INTERGRAN	ULAR POOF	R BIVALVES, GASTROPODS	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND				LEPIDOCYCLINA,				
POF-31 POF-31	323.7 324.0	324.0 330.0	0.3 6.0	MOLDIC POROSITY; GOOD INDURATION; LEPIDOCYCLINA, BIVALVES, GASTROPODS  NO RECOVERY	LIMESTONE-WACKESTONE	20 INTERGRAN	ULAR GOOI	BIVALVES, GASTROPODS	FORAMINIFERA VERY PALE ORANGE : 10YR 8/2			<u> </u>
				LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR								
POF-31	330.0	330.6	0.6	POROSITY; MODERATE INDURATION  LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;	LIMESTONE-MUDSTONE	20 INTERGRAN	ULAR MODERA	ATE	VERY PALE ORANGE : 10YR 8/2			
POF-31	330.6	333.3	2.7	POOR INDURATION	LIMESTONE-MUDSTONE	10 INTERGRAN	ULAR POOF	₹	VERY PALE ORANGE : 10YR 8/2			
POF-31	333.3	334.0	0.7	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES	LIMESTONE-MUDSTONE	10 INTERGRAN	ULAR POOF		MOLLUSKS VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC								
POF-31	334.0	334.6	0.6	POROSITY; POOR INDURATION; BIVALVES LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC	LIMESTONE-WACKESTONE	10 INTERGRAN	ULAR POOF	₹	MOLLUSKS VERY PALE ORANGE : 10YR 8/2			
POF-31	334.6	336.5	1.9	POROSITY; POOR INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	10 INTERGRAN	ULAR POOF	R GASTROPODS	MOLLUSKS VERY PALE ORANGE : 10YR 8/2			
POF-31	336.5	336.7	0.2	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	20 INTERGRAN	ULAR POOF	R GASTROPODS	MOLLUSKS VERY PALE ORANGE : 10YR 8/2			
FUr-31	330.5	330.1	U.Z	INIOLDIO I ONOGII I, FOON INDUNATION, DIVALVES, GASTROPODS	LINESTONE-WACKESTONE	ZU INTERGRAN	OLAR   POUR	GASTROPODS	WIGHLUSKS VERT FALE URANGE: 101R 8/2	<u> </u>	<u> 1                                   </u>	

Well	Depth Min, ft bls		Thickness, ft	Description	Rock Type	Porosity, percent	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1 Pc	prosity Percent Modifier
			·	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND	,							Access will Type I	ACCESS WIII FCLI	brosity Percent Modifier
POF-31 POF-31	336.7 338.5	338.5 340.0	1.8 1.5	MOLDIC POROSITY; MODERATE INDURATION; BIVALVES, GASTROPODS NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR INTERGRANULAR	MODERATE	GASTROPODS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	340.0	340.5	0.5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	GASTROPODS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	340.5	341.1	0.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	GASTROPODS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	341.1	341.3	0.2	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	GASTROPODS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	341.3	343.0		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY: POOR INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	30	INTERGRANULAR	POOR		MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
	343.0	344.0		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY: POOR INDURATION; BIVALVES, GASTROPODS, LEPIDOCYCLINA		30	INTERGRANULAR	POOR	GASTROPODS,	MOLLUSKS				
POF-31	343.0	344.0	1.0		LIMESTONE-WACKESTONE	30	INTERGRANULAR	POOR	GASTROPODS,	MULLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	344.0	346.0	2.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGHT INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS, LEPIDOCYCLINA, PELLETS	LIMESTONE-WACKESTONE	30	INTERGRANULAR	POOR	LEPIDOCYCLINA, PELLETS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	346.0	348.0	2.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS, PELLETS	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	GASTROPODS, PELLETS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	348.0	350.0	2.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, GASTROPODS	LIMESTONE-WACKESTONE	20	INTRAGRANULAR	POOR	GASTROPODS	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	350.0	354.9	4.9	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES	LIMESTONE-WACKESTONE	20	INTRAGRANULAR	POOR		MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	354.9	356.0	1.1	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; POOR INDURATION; BIVALVES, ECHINOIDS, FORAMINIFERA	LIMESTONE-WACKESTONE	20	INTRAGRANULAR	POOR	ECHINOIDS, FORAMINIFERA	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	356.0	356.7		LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; POOR INDURATION; ECHINOIDS, FORAMINIFERA	LIMESTONE-WACKESTONE	30	INTRAGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	356.7	357.5	-	FOOK INDUSTRION, ESTIMONIOS, FORWINNI ENA LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR  POROSITY: POOR INDURATION; ECHINOIDS, FORAMINIFERA, AND BIVALVES	LIMESTONE-WACKESTONE	20	INTRAGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY: POOR INDURATION: ECHINOIDS. FORAMINIFERA										
POF-31 POF-31	357.5 358.0	358.0 360.0		NO RECOVERY	LIMESTONE-WACKESTONE	20	INTRAGRANULAR	POOR	ECHINOIDS F	ORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31	360.0	361.1	1.1	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS	LIMESTONE-WACKESTONE	10	MOLDIC	POOR		MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	361.1	362.7	1.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS	LIMESTONE-WACKESTONE	20	MOLDIC	POOR		MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	362.7	363.0	0.3	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS	LIMESTONE-WACKESTONE	20	MOLDIC	POOR		MOLLUSKS	GRAYISH ORANGE : 10YR 7/4			
POF-31	363.0	367.6	4.6	LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR, MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS	LIMESTONE-PACKSTONE	30	INTRAGRANULAR	POOR	FORAMINIFERA, ECHINOIDS	MOLLUSKS	GRAYISH ORANGE : 10YR 7/4			
POF-31	367.6	368.0	-	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION; MOLLUSKS	LIMESTONE-PACKSTONE	20	MOLDIC	POOR		MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	368.0	368.5	-	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-WACKESTONE	20	MOLDIC	POOR		MOLLOGIC	VERY PALE ORANGE : 10YR 8/2			
				INTERGRANDLAR POROSITY, POOK INDURATION LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION		10								
POF-31 POF-31	368.5 369.0	369.0 370.0		NO RECOVERY	LIMESTONE-MUDSTONE NO SAMPLE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	370.0	372.0	2.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	20	MOLDIC	POOR	FORAMINIFERA	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	372.0	373.6	1.6	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); POOR MOLDIC AND INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	10	MOLDIC	POOR	FORAMINIFERA	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	373.6	378.0	4.4	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION; LAMINATIONS	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2			
POF-31	378.0	380.0	2.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	380.0	381.1	1.1	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR INDURATION; LAMINATIONS, FORAMINIFERA, GASTROPODS, BIVALVES	LIMESTONE-MUDSTONE	20	INTERGRANULAR	POOR	GASTROPODS, BIVALVES, LAMINATIONS FO	ORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31	381.1	386.2		LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, GASTROPODS, BIVALVES	LIMESTONE-MUDSTONE	20	INTERGRANULAR	POOR	,		VERY PALE ORANGE : 10YR 8/2			
POF-31	386.2	389.0	-	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	S. OTTO ODO, BIVALVEO	OTO WINNIE LIVA	VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR		0			CASTRODODO BRANCES -	ODALAN IIEEE				
POF-31	389.0	390.0		POROSITY; POOR INDURATION; FORAMINIFERA, GASTROPODS, BIVALVES LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR	LIMESTONE MUDOTONE	20	INTERGRANULAR	POOR		UKAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31	390.0	391.5		INDURATION, LAMINATIONS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, MOLDIC,	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2			
POF-31	391.5	394.3	-	AND INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, GASTROPODS, BIVALVES LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND	LIMESTONE-WACKESTONE	30	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	394.3	400.0	5.7	INTERGRANULAR POROSITY; POOR INDURATION; GASTROPODS, BIVALVES LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); POOR INTERGRANULAR AND VUGGY	LIMESTONE-WACKESTONE	30	INTERGRANULAR	POOR	GASTROPODS, BIVALVES	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2			
POF-31	400.0	401.3	1.3	POROSITY; POOR INDURATION; ECHINOIDS LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
POF-31	401.3	403.7	2.4	INDURATION  LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31	403.7	404.4	0.7	ILIMESTONE (MUDSTONE), TELLOWISH GRET (31 6/1), NO OBSERVABLE FOROSITT, FOOR INDURATION [LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31	404.4	405.1	0.7	INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2) : 5Y 8/1			
POF-31	405.1	406.9	1.8	LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION; ECHINOIDS, SOME LAMINATIONS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	SOME LAMINATIONS	ECHINOIDS	YELLOWISH GRAY (2) : 5Y 8/1			
POF-31	406.9	407.3	0.4	LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2) : 5Y 8/1			
POF-31	407.3	408.2	0.9	LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR POROSITY; MODERATE INDURATION; ECHINOIDS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE		ECHINOIDS	YELLOWISH GRAY (2) : 5Y 8/1			
POF-31	408.2	408.7		LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION; ECHINOIDS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR		ECHINOIDS	YELLOWISH GRAY (2) : 5Y 8/1			
. 51 51	.50.2	.50.7	0.0		I TO TO THE TAX TO THE TOTAL	·	O DOLLANDLL			_010100			<u> </u>	

	- I	Depth Min, ft	Denth Max ft												
March   Marc				Thickness, ft		Rock Type	Porosity, percent	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
Page   Column   Col	OF-31	408.7	410.0	1.3		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
March   Marc	OF-31	410.0	410.9	0.9		LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR	FRACTURED		YELLOWISH GRAY (2): 5Y 8/1			
Prof.   Col.	OF-31	410.9	413.3	2.4		LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
1.00	OF-31	413.3		0.6		LIMESTONE-WACKESTONE	10	INTERGRANI II AR				VELLOWISH GRAY (2) : 5V 8/1			
Page   1975   1976					LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); MODERATE INTERGRANULAR, MOLDIC,					TUDITELLA MOLDS	ECHINOIDS	, ,			
15   15   15   15   15   15   15   15					LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY					TORTTELLA WOLDS		,			
Process   Proc					LIMESTONE (WACKESTONE); YELLOWISH GREY (5Y 8/1); LOW INTERGRANULAR AND VUGGY							, ,			
Property   Property	OF-31	416.0	417.0	1.0		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
George   G	OF-31	417.0	419.5	2.5	·	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
1905   1906   1907	OF-31	419.5	420.0	0.5	INDURATION	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
Perform   Perf	OF-31	420.0	422.9	2.9	INDURATION; ECHINOIDS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	PALE BROWN : 5YR 5/2			
Column   C	OF-31	422.9	423.9	1.0	INDURATION, ECHINOIDS	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR		ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
1945   1945	OF-31	423.9	424.3	0.4	INDURATION; ECHINOIDS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR		ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
Column   C	OF-31	424.3	426.5	2.2		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	SOME FRACTURES	ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1			
Deptine Supplement   Property				0.8			0					, ,			
Prop. 1					LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR							. ,			
Post   April   Box   April					LIMESTONE (PACKSTONE); YELLOWISH GREY (5Y 8/1); MODERATE INTERGRANULAR POROSITY;					LAMBIATIONS		, ,			
DOTS    CORD   CONTROL					LIMESTONE (MUDSTONE); YELLOWISH GREY (5Y 8/1); NO OBSERVABLE POROSITY; POOR							, ,			
DOC-31   489   600   6	OF-31	428.5	429.0	0.5	·	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	LAMINATIONS		YELLOWISH GRAY (2): 5Y 8/1			
POS-11   40.5   40.0   64.0	OF-31	429.0	429.6	0.6		CLAY	0	NO OBSERVABLE	POOR	LAMINATIONS		LIGHT GREENISH GRAY : 5GY 8/1			
MASTOR PROBLEMS   19   NESSONALAR POOR   POOR   PORMINISTRY   PALE SOON PROCESS   PA	OF-31	429.6	430.0	0.4	POOR INDURATION	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
COP-11   1410   1427   17   NOUNTRON SOME LAMINATIONS   DESTONE-WACKETONE   10   INTERGRANALAR   POOR   LAMINATONS   PALE BROWN 1978 52	OF-31	430.0	431.0	1.0	INDURATION; FORAMINIFERA	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
DOC-31   420   4	OF-31	431.0	432.7	1.7	INDURATION; SOME LAMINATIONS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LAMINATIONS		PALE BROWN : 5YR 5/2			
Magnetic   Magnetic					INDURATION; FORAMINIFÉRA	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
Decid   441,	OF-31		440.0	6.0	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR										
MISSTONE PACKSTONE   MISSTONE PACKSTONE   MISSTONE PACKSTONE   10 NOTEGRANULAR PORSITY, POOR   10 NOTEGRANULAR P	OF-31	440.0	441.1	1.1		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	ECHINOIDS	FORAMINIFERA	YELLOWISH GRAY (2): 5Y 8/1			
POF-31   441.8   442.8   1.0   MOURATION, FORAIMINFERA   MOUNT   MOURATION	OF-31	441.1	441.8	0.7	,	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
POF-31   442   445   1.4   MOURATION   MOURATION   MOURATION   MOURATION   MOURATION   MOURATION   MOURATION   MOURATION   FORMAINFERA   FORMAINFERA	OF-31	441.8	442.8	1.0	INDURATION; FORAMINIFERA	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
POF-31	OF-31	442.8	444.2	1.4	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31   445.8   446.5   447.7   12   NDURATION, FORAMINIFERA   LIMESTONE, PACKESTONE   10   NTERGRANULAR   POR   FORAMINIFERA   PALE BROWN: 5YR 82   POR	OF-31	444.2	445.8	1.6	MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, ORGANICS	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE	ECHINOIDS, ORGANICS	FORAMINIFERA	PALE BROWN : 5YR 5/2			
POF-31   446.5   447.7   448.0   0.3   LIMESTONE_PACKSTONE, PALE BROWN, 197 S2); LOW INTERGRANULAR POROSITY, MODERATE INDIRATION   LIMESTONE_MUNISTONE   0 NO DESERVABLE   POROSITY   NO DESERVABLE   POROSITY   POR   LIMESTONE_PACKSTONE   10 NTERGRANULAR   POROSITY   POR   PORMINIFERA   PALE BROWN; 57R 5/2	OF-31	445.8	446.5	0.7	INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
PGF-31   448.0   448.3   0.3   NDURATION   NDURATION   LIMESTONE PACKSTONE; PALE BROWN (SY 52); LOW INTERGRANULAR POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE   LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE   LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE   LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMESTONE-MUDSTONE; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; LIMINATIONS, SOME FRACTURES, FORAMINERA (18); WHITE (N9); NO OBSERVABLE POROSITY; POOR INTERGRANULAR POROSITY; POOR INTERGRANULAR POROSITY; POOR INTERGRANULAR POROSITY; POOR INTERGRANULAR POROSITY; POOR INTERGRANULAR POROSITY; POOR INTERGRANULAR POROSITY; POOR	OF-31	446.5	447.7	1.2		LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
POF-31	OF-31	447.7	448.0	0.3		LIMESTONE-MUDSTONE	0	NO OBSERVABLE	MODERATE			WHITE: N9			
POF-31	OF-31	448.0	448.3	0.3	INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	PALE BROWN : 5YR 5/2			
POF-31   450.5   450					FRACTURED	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	FRACTURES		WHITE: N9			
POF-31					LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR										
POF-31	OF-31	450.0	450.5	0.5		LIMESTONE-WACKESTONE	10	INTERGRANULAR				YELLOWISH GRAY (2): 5Y 8/1			
POF-31   451.3   451.9   0.6   INDURATION   ECHINOIDS   LIMESTONE (PACKSTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR POROSITY; LOW   LIMESTONE-PACKSTONE   10   INTERGRANULAR   POOR   ECHINOIDS   ECHINOIDS   PALE BROWN : 5YR 5/2   PALE BROWN : 5YR 5/2   PALE BROWN : 5YR 5/2   PALE BROWN : 5YR	OF-31	450.5	451.3	0.8		LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31   451.9   452.8   0.9   INDURATION; ECHINOIDS   LIMESTONE (WACKESTONE); PALE BROWN (5Y 5/2); LOW INTERGRANULAR AND MOLDIC   LIMESTONE-WACKESTONE   10   INTERGRANULAR   POOR   ECHINOIDS   PALE BROWN : 5YR 5/2	OF-31	451.3	451.9	0.6	INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			PALE BROWN : 5YR 5/2			
POF-31   452.8   454.2   1.4   POROSITY; LOW INDURATION; ECHINOIDS   LIMESTONE-WACKESTONE   10   INTERGRANULAR   POOR   ECHINOIDS   PALE BROWN: 5YR 5/2   STREET   POR STREE	OF-31	451.9	452.8	0.9	INDURATION; ECHINOIDS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		ECHINOIDS	PALE BROWN : 5YR 5/2			
POF-31         454.2         454.9         0.7         POOR INDURATION; LAMINATIONS         LIMESTONE-WACKESTONE         20         INTERGRANULAR         POOR         YELLOWISH GRAY (2): 5Y 8/1         9           POF-31         454.9         455.8         0.9         IMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR LIMESTONE-WACKESTONE         10         INTERGRANULAR         POOR         FORAMINIFERA         YELLOWISH GRAY (2): 5Y 8/1         9           POF-31         455.8         456.5         0.7         INDURATION; CAMINATIONS, SOME FRACTURES, FORAMINIFERA         LIMESTONE-WACKESTONE         10         INTERGRANULAR         POOR         FORAMINIFERA         YELLOWISH GRAY (2): 5Y 8/1         9           POF-31         455.8         456.5         0.7         INDURATION; CAMINATIONS, SOME FRACTURES, FORAMINIFERA         LIMESTONE-PACKSTONE         10         INTERGRANULAR         POOR         FORAMINIFERA         YELLOWISH GRAY (2): 5Y 8/1         9           POF-31         455.8         456.5         0.7         INDURATION; CAMINATIONS, SOME FRACTURES, FORAMINIFERA         LIMESTONE-PACKSTONE         10         INTERGRANULAR         POOR         FORAMINIFERA         YELLOWISH GRAY (2): 5Y 8/1         9	OF-31	452.8	454.2	1.4	POROSITY; LOW INDURATION; ECHINOIDS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	PALE BROWN : 5YR 5/2			
POF-31 454.9 455.8 0.9 INDURATION; FORAMINIFERA LIMESTONE-WACKESTONE 10 INTERGRANULAR POOR FORAMINIFERA YELLOWISH GRAY (2): 5Y 8/1	OF-31	454.2	454.9	0.7	POOR INDURATION; LAMINATIONS	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31 455.8 456.5 0.7 LIMESTONE (PACKSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR LIMESTONE-PACKSTONE 10 INTERGRANULAR POROSITY; POOR LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR LIMESTONE-PACKSTONE 10 INTERGRANULAR POOR FRACTURES FORAMINIFERA YELLOWISH GRAY (2): 5Y 8/1	OF-31	454.9	455.8	0.9		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	YELLOWISH GRAY (2): 5Y 8/1			
LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR					LIMESTONE (PACKSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR		10					,			
FOR-DIT 400.0   407.4   U.S.   INDURATION, FRACTURED   LIMEDIONE WACKEDIONE   TO   INTERGRANULAR   POUR   FRACTURED   YELLOWIDH GRAY (2): DY 8/1					LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR						I OTOMINII LIVA	,			
POF-31 457.4 457.7 0.3 CLAY; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; CLAY 0 NO OBSERVABLE POOR WHITE: N9										FRACTURES					

	Depth Min. ft	Depth Max, ft												
Well	bls	bls	Thickness, ft	Description	Rock Type	Porosity, percen	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-31	457.7	460.0	2.3	NO RECOVERY  LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR										
POF-31	460.0	461.6	1.6	INDURATION; ECHINOIDS	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR	ECHINOIDS		YELLOWISH GRAY (2): 5Y 8/1			
POF-31	461.6	463.7	2.1	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION: ECHINOIDS. SOME LAMINATIONS	I IMESTONE WACKESTONE	10	INTERGRANULAR	POOR	ECHINOIDS, LAMINATIONS		VELLOWISH CRAY (2) - EV 9/4			
POF-31	401.0	403.7	2.1	LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POUR	LAMINATIONS		YELLOWISH GRAY (2): 5Y 8/1			
POF-31	463.7	464.2	0.5	INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31 POF-31	464.2 467.0	467.0 470.0	2.8 3.0	CLAY; WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; NO RECOVERY	CLAY	0	NO OBSERVABLE	POOR			WHITE: N9			
				LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR										
POF-31	470.0	471.2	1.2	INDURATION  LIMESTONE (PACKSTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31	471.2	471.9	0.7	POOR INDURATION	LIMESTONE-PACKSTONE	20	INTERGRANULAR	POOR			PALE BROWN : 5YR 5/2			
POF-31	471.9	475.5	3.6	LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); NO OBSERVABLE POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			PALE BROWN : 5YR 5/2			
				LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR										
POF-31	475.5	476.0	0.5	INDURATION LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			PALE BROWN : 5YR 5/2			
POF-31	476.0	477.9	1.9	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31	477.9	478.6	0.7	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
			-	LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR										
POF-31 POF-31	478.6 479.4	479.4 480.0	0.8	INDURATION NO RECOVERY	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
1.01-01		+00.0	0.0	LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR		<u> </u>						†		
POF-31	480.0	481.5	1.5	INDURATION; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	ORGANICS ORGANICS,		PALE BROWN : 5YR 5/2			
POF-31	481.5	485.8	4.3	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR INDURATION; ORGANICS, LAMINATIONS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LAMINATIONS		YELLOWISH GRAY (2) : 5Y 8/1			
POF-31	485.8	487.0	1.2	CLAY; YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;	CLAY	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31 POF-31	487.0 490.0	490.0 491.0	3.0 1.0	NO RECOVERY  CLAY; YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;	CLAY	0	NO OBSERVABLE	POOR			YELLOWISH GRAY (2) : 5Y 8/1	+		
			-	LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR							` ,			
POF-31	491.0	492.4	1.4	INDURATION  LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31	492.4	493.0	0.6	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			PALE BROWN : 5YR 5/2			
				CARBONATE GRAVELLY SAND; YELLOWISH GRAY (5Y 8/1); HIGH INTERGRANULAR POROSITY;					CARBONATE SAND AND					
POF-31	493.0	493.7	0.7	UNCONSOLIDATED  LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR AND MOLDIC	GRAVELLY SANDS	30	INTERGRANULAR	CONSOLIDAT	GRAVEL		YELLOWISH GRAY (2): 5Y 8/1			
POF-31	493.7	496.5	2.8	POROSITY; POOR INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			YELLOWISH GRAY (2): 5Y 8/1			
POF-31	496.5	500.0	3.5	NO RECOVERY  LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR AND MOLDIC										
POF-31	500.0	501.9	1.9	POROSITY; POOR INDURATION; SOME LAMINATIONS	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	LAMINATIONS		PALE BROWN : 5YR 5/2			
POF-31	501.9	503.6	1.7	LIMESTONE (MUDSTONE); YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION; FRACTURES	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	FRACTURES		YELLOWISH GRAY (2) : 5Y 8/1			
FOF-31	501.9	505.0	1.7	LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-MODSTONE	0	NO OBSERVABLE	FOOR	TRACTORES		TELLOWISH GRAT (2): ST 6/T			
POF-31	503.6	505.0	1.4	INDURATION; SOME LAMINATIONS  LIMESTONE (MUDSTONE); PALE BROWN (5YR 5/2); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LAMINATIONS		PALE BROWN : 5YR 5/2			
POF-31	505.0	505.9	0.9	INDURATION; FRACTURED	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR	FRACTURES		PALE BROWN : 5YR 5/2			
DOE 04	505.0	500.0	0.0	LIMESTONE (WACKESTONE); WHITE (N9); LOW INTERGRANULAR POROSITY; POOR INDURATION;	LIMEGEONE MACKECTONE	40	INTEROPANULAR	DOOD		FORAMINIFERA	WHITE : NO			
POF-31 POF-31	505.9 506.8	506.8 510.0	0.9 3.2	FORAMINIFERA NO RECOVERY	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	WHITE: N9			
				LIMESTONE (WACKESTONE); PALE BROWN (5YR 5/2); MODERATE INTERGRANULAR POROSITY;					LAMINATIONS, CROSS					
POF-31	510.0	511.0	1.0	POOR INDURATION; LAMINATIONS, CROSS BEDDING  LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); MODERATE INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	BEDDING		PALE BROWN : 5YR 5/2			
POF-31	511.0	512.3	1.3	POOR INDURATION; LAMINATIONS, FORAMINIFERA	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	LAMINATIONS	FORAMINIFERA	YELLOWISH GRAY (2): 5Y 8/1			
POF-31	512.3	515.2	2.9	LIMESTONE (MUDSTONE); WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION; FRACTURED	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	FRACTURES		WHITE: N9			
				DOLOMITE; GRAYISH ORANGE (10YR 7/4); MODERATE MOLDIC AND VUGGY POROSITY; GOOD										
POF-31	515.2	516.5	1.3	INDURATION DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); HIGH MOLDIC AND VUGGY POROSITY; GOOD	DOLOMITE	20	MOLDIC	GOOD			GRAYISH ORANGE : 10YR 7/4			
POF-31	516.5	519.2	2.7	INDURATION	DOLOMITE	30	MOLDIC	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	519.2	520.0	8.0	NO RECOVERY LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR					LAMINATIONS,					
POF-31	520.0	524.1	4.1	INDURATION; ECHINOIDS, SOME FRACTURES, THIN CLAY LAMINATIONS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FRACTURES	ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1	CLAY	5	
DOE 04	504.4	F05 5	4.4	LIMESTONE (WACKESTONE); YELLOWISH GRAY (5Y 8/1); LOW INTERGRANULAR POROSITY; POOR	LIMESTONE MACKESTONE	10	INTERCRANULAR	DOOD	LAMINATIONS,	ECHINOIDS	VELLOWISH CDAY (2) - 5V 2/4	CL AV	40	
POF-31 POF-31	524.1 525.5	525.5 526.5	1.4 1.0	INDURATION; FRACTURED, CLAYEY  CLAY; YELLOWISH GRAY (5Y 8/1); NO OBSERVABLE POROSITY; POOR INDURATION;	LIMESTONE-WACKESTONE CLAY	10	INTERGRANULAR NO OBSERVABLE	POOR POOR	FRACTURES	ECHINOIDS	YELLOWISH GRAY (2): 5Y 8/1 YELLOWISH GRAY (2): 5Y 8/1	CLAY	10	
POF-31	526.5	530.0	3.5	NO RECOVERY							` ,			
POF-31	530.0	532.0	2.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND INTERGRANULAR POROSITY; MODERATE INDURATION; GASTROPODS, FORAMINIFERA	LIMESTONE-WACKESTONE	20	MOLDIC	MODERATE	GASTROPODS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;										
POF-31	532.0	534.0	2.0	MODERATE INDURATION  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE MOLDIC AND	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	534.0	535.1	1.1	INTERGRANULAR POROSITY; MODERATE INDURATION; ORGANICS	LIMESTONE-WACKESTONE	20	MOLDIC	MODERATE	ORGANICS		VERY PALE ORANGE : 10YR 8/2			
POF-31	535.1	535.7	0.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			1
F OF-31				LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR		10					VERT FALL ORANGE . IUTR 0/2			
POF-31	535.7	539.0	3.3	INDURATION NO RECOVERY	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	539.0	540.0	1.0	NO RECOVERY  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;										
POF-31	540.0	541.6	1.6	MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	541.6	542.3	0.7	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
1 01-01	UT 1.U	U74.U	0.1	p 00// 11/20/20/10/10	LIIVILO I OI AL-IVIODO I OIAL	10	III I LIVORANOLAR	1 0010		I .	VERT FALL ORANGE . 1011 0/2	I		1

Page		1		1	T	Ī	1	1	1	I	F		-	1	
	Well			Thickness ff	Description	Rock Type	Porosity percent	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pot1	Porosity Percent Modifier
14	· · · · · ·	DIS	Dia	THICKHOSS, IC		ROCK Type	r orosity, percent	t Torosity Type I	induration	Other reature	1 ossii type	301011	Access Mill Type I	Access Mill 1 ct1	r orosity r ercent mounter
Angle	POF-31	542.3	543.6	1.3		LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			YELLOWISH GRAY: 5Y 7/2			
Part	POF-31	543.6	545.0	1.4		LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FORAMINIFERA	ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
1.00					LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR										
March   Marc															
March   Marc	POF-31	547.7	550.0	2.3											
1-1-1	POF-31	550.0	550.7	0.7		LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
## PROPERTY NAME	DOE 24	550.7	EE4 6	0.0		LIMECTONE MUDOTONE	10	INTERCRANIULAR	DOOD			VEDV DALE ODANICE : 10VD 9/2			
Property   1982   198	POF-31	550.7	331.0	0.9		LIMESTONE-MODSTONE	10	INTERGRANULAR	POUR			VERY PALE URANGE : 101R 8/2			
March   Marc											ECHINOIDS				
March   Marc	FOF-31	555.2	554.0	0.6		CLAT		NO OBSERVABLE	FOOR			VERT FALE ORANGE : 10TR 6/2			
March   Marc	POF-31	554.0	556.0	2.0	,	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
Post   Post	POF-31	556.0	557.0	1.0	ECHINOIDS	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR		ECHINOIDS	WHITE: N9			
Page   Page	POF-31	557.0	558.0	1.0		LIMESTONE-MUDSTONE	10	INTERGRANI II AR	POOR		ECHINOIDS .	WHITE : NO	CLAV	40	
Second   S				-	LIMESTONE (WACKESTONE); WHITE (N9); HIGH INTERGRANULAR POROSITY; MODERATE								OLAT	40	
	POF-31	558.0	560.0	2.0	·	LIMESTONE-MUDSTONE	30	INTERGRANULAR	MODERATE	GASTROPODS	ECHINOIDS	WHITE: N9			
	POF-31	560.0	561.6	1.6	POROSITY; POOR INDURATION; ECHINOIDS	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
	POF-31	561.6	562.0	0.4		LIMESTONE-MUDSTONE	10	INTERGRANUI AR	POOR		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
Feb   1952   1953   1954   1955   1				-	LIMESTONE(WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR										
Part   Part						LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
Page   Page					LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW MOLDIC AND INTERGRANULAR										
Part   Part	POF-31	570.0	571.0	1.0		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
Prof.   1916   1976	POF-31	571.0	571.9	0.9	INDURATION; LAMINATIONS	LIMESTONE-MUDSTONE	10	NO OBSERVABLE	POOR	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2			
1972   2776   2776   2777   2776   2777	POF-31	571.9	577.2	5.3		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
Port   1976					CLAY; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION;										
POST   STATE	POF-31	577.6	578.5	0.9		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
PO-31   0813   081   0	505.04									EALL OFFILM					
POP-13   SUL   S	POF-31	5/8.5	580.3	1.8	,	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR	FALLOTELLA	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
Section   Sect	POF-31	580.3	581.1	0.8	, ,	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR	ORGANICS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POP-31   SS2   SSE   SS   SSE   SS   SSE   SS   SS	POF-31	581.1	582.3	1.2		LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR	ORGANICS, FRACTURED	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POP-51   Se2   Se4   1   POP-51   Se2   Se4   1   POP-51   Se4	DOE 24	500.0	500.0	0.5		OLAY.	0	NO OBSERVARIE	DOOD	ODCANICS		DALE VELLOWIGH PROMAL 40VP C/O			
	POF-31	582.3	582.8	0.5		CLAY	0	NO OBSERVABLE	POOR	URGANICS		PALE YELLOWISH BROWN: 10YR 6/2			
POP-31   S84.0   S85.0   1.0   PORGSTRY POOR NOUNTATION, FORALMINERA, FALIOTELLA, ORGANICA, FRACTURED   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL ORGANICAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE   10 NTERGRANULAR POOR PRACTURED   POPAMINERA, PALOTELLA, PROPOSITY, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNESTONE-PACKSTONE, LYPY FALE DRANGE (PYPE ALL OFFICIAL PROPOSITY).   UNITED ALL OFFICIAL PROPOSITY.   UNITED ALL OFFICIAL	POF-31	582.8	584.0	1.2		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
POP-31   585.0   586.1   1.1   900R ROUDATION FORMAMPERA, PLALOTELLA, FRACTURED   UMESTONE-PACKSTONE   10   NITERGRANULAR   POOR   FRACTURED   FORMAMPERA   VERY PALE GRANGE: 1907 82   1   1   1   1   1   1   1   1   1	POF-31	584.0	585.0	1.0		LIMESTONE-PACKSTONE	20	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
MIRESTONE MACRESTONE, VERY PALE ORANGE (1978 82); LOW INTERGRANULAR POROSITY:	DOE 21	E0E 0	E06 1	1.1		LIMESTONE DACKSTONE	10	INTERCRANIII AR	POOR		EORAMINIEERA	VERY DALE ORANGE : 10VP 9/2			
POP-31   S97.3   S97.3   S99.0   27   NO RECOVERY					LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;		10				FORAIVIINIFERA	VERT FALE ORANGE : 10TR 6/2			
LIMESTONE WACKSTONE; VERY PALE ORANGE (107R 82); LOW INTERGRANULAR POROSITY; LIMESTONE WACKSTONE; VERY PALE ORANGE (107R 82); LOW INTERGRANULAR POROSITY; LIMESTONE PACKSTONE; VERY PALE ORANGE; LOW READ (107R 82); LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; VERY PALE ORANGE; LOW READ (107R 82); LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR REAL PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; POOR LIMESTONE, PACKSTONE; LOW INTERGRANULAR POROSITY; P						LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
Deciding   Deciding	FOF-31			2.1	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;										
POF-31   591.3   591.6   0.3   POOR NOUNATION FORAMINIFERA, FALLOTELLA FRACTURED   LIMESTONE-PACKSTONE   10   NTERGRANULAR POOR STY.	POF-31	590.0	591.3	1.3		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
POF-31   591.6   592.6   1.0   POOR NDURATION, FORAININFERA, FALLOTELLA   LIMESTONE, PROCKSTONE, GRANGE (1978 73), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 73), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 74), LOW INTERGRANULAR POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), NO BESERVABLE POROSITY; POOR   LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKSTONE, GRANGE (1978 82), LOW INTERGRANULAR POROSITY; LIMESTONE, PROCKS	POF-31	591.3	591.6	0.3	POOR INDURATION; FORAMINIFERA, FALLOTELLA, FRACTURED	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
DPG-31   592.8   593.0   0.4   1.0   NDIATION; PORAMIFERA, FALOTELLA   LIMESTONE; ORAYISH ORANGE (10YR 7/3; LOW INTERGRANULAR POROSITY; DOR LIMESTONE; ORAYISH ORANGE (10YR 7/3; LOW INTERGRANULAR POROSITY; DOR LIMESTONE; ORAYISH ORANGE (10YR 7/3; LOW INTERGRANULAR POROSITY; DOR LIMESTONE; ORAYISH ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; POOR SERVABLE POOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE; CARCASTONE; ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE; CARCASTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; DOR LIMESTONE; VERY PALE	POF-31	591.6	592.6	1.0		LIMESTONE-WACKESTONE	10	INTERGRANI II AP	POOR	FALLOTFILA	FORAMINIFERA	VERY PALE ORANGE : 10VR 8/2			
DPG-31   593.0   594.4   1.   POOR INDURATION, FORAMINIFERA STANDARD (10YR 8/2), LOW INTERGRANULAR POROSITY;   DW INTERGRANULAR PO					LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; POOR								1	1	
POF-31   593.0   594.4   1.4   POOR INDURATION, FORAMINIFERA, FALLOTELLA, FRACTURED   LIMESTONE-WACKESTONE   10   INTERGRANULAR   POOR   FRACTURED   FORAMINIFERA   SRAYISH ORANGE: 10YR 7/4     PORAMINIFERA   PORAMI	POF-31	592.6	593.0	0.4		LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4			
POF-31   594.4   595.9   1.5   POOR INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED   LIMESTONE; PACKSTONE   10   INTERGRANULAR   POOR   ECHINOIDS, FRACTURED   FORAMINIFERA   VERY PALE ORANGE: 10YR 8/2   NO DISSERVABLE   POOR   LIMESTONE; PACKSTONE   NO DISSERVABLE   POOR   CHINOIDS, FRACTURED   CLAYY	POF-31	593.0	594.4	1.4	POOR INDURATION; FORAMINIFERA, FALLOTELLA, FRACTURED	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4			
POF-31   595.9   596.2   0.3   LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE (PACKSTONE)   LIMESTONE (P	POF-31	594.4	595.9	1.5		LIMESTONE-PACKSTONF	10	INTERGRANULAR	POOR	ECHINOIDS, FRACTURED	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31   596.2   596.8   0.6   CLAY, VERY PALE ORANGE (10YR 8/2), NO OBSERVABLE POROSITY; POOR INDURATION   CLAY   0   NO OBSERVABLE   POOR   VERY PALE ORANGE : 10YR 8/2					LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR		-								
POF-31   596.8   598.1   1.3   LIMESTONE (PACKSTONE); CRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; POOR LIMESTONE, VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE, VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LAMINATIONS   VERY PALE ORANGE : 10YR 8/2										ECHINOIDS, FRACTURED	FORAMINIFERA		CLAY		
POF-31   598.1   599.2   1.1   LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE. (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LIMESTONE. (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 LIMESTONE. (WACKESTONE); VERY PALE ORANGE : 10YR					LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY; POOR										
POF-31   598.1   599.2   1.1   INDURATION; LAMINATIONS   LIMESTONE (10YR 8/2); LOW INTERGRANULAR POROSITY;   LIMESTONE-PACKSTONE   10   INTERGRANULAR POROSITY;   POF-31   599.5   600.0   0.5   NO RECOVERY	POF-31	596.8	598.1	1.3		LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4			
POF-31         599.2         599.5         0.3         POOR INDURATION; FORAMINIFERA         LIMESTONE-PACKSTONE         10         INTERGRANULAR         POOR         FORAMINIFERA         VERY PALE ORANGE: 10YR 8/2         9           POF-31         599.5         600.0         0.5         NO RECOVERY         LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS         LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LAMINATIONS         VERY PALE ORANGE: 10YR 8/2         VERY PALE ORANGE: 10YR 8/2           POF-31         601.1         601.5         0.4         INDURATION; LAMINATIONS         LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LAMINATIONS         LIMESTONE WACKESTONE         VERY PALE ORANGE: 10YR 8/2         VERY PALE ORANGE: 10YR 8/2           POF-31         601.1         601.5         0.4         INDURATION; LAMINATIONS         LIMESTONE WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;         0         NO OBSERVABLE         POOR         LAMINATIONS         VERY PALE ORANGE: 10YR 8/2         10	POF-31	598.1	599.2	1.1	INDURATION; LAMINATIONS	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2		1	
POF-31 599.5 600.0 0.5 NO RECOVERY  POF-31 600.0 601.1 1.1 POOR INDURATION; LAMINATIONS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  POF-31 601.1 601.5 0.4 INDURATION; LAMINATIONS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2	POF-31	599.2	599.5	0.3		LIMESTONE-PACKSTONF	10	INTERGRANULAR	POOR		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31 600.0 601.1 1.1 POOR INDURATION; LAMINATIONS LIMESTONE-WACKESTONE 10 INTERGRANULAR POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  POF-31 601.1 601.5 0.4 INDURATION; LAMINATIONS LIMESTONE-WACKESTONE 0 NO OBSERVABLE POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2					NO RECOVERY				. 30		2.2.3.4.1				
POF-31 601.1 601.5 0.4 INDURATION; LAMINATIONS LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR LAMINATIONS VERY PALE ORANGE : 10YR 8/2 UMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; ORANGE : 10YR 8/2 UMESTONE (WACKESTONE); VERY PALE ORANGE : 10YR 8/2 UMESTONE	POF-31	600.0	601.1	1.1		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2			
LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;					LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR										
	POF-31	წ01.1	601.5	0.4		LIMESTONE-WACKESTONE	U	NO OBSERVABLE	POOR	LAMINATIONS	1	VERY PALE ORANGE: 10YR 8/2			
	POF-31	601.5	603.0	1.5		LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LAMINATIONS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		ļ	

	Depth Min, ft	Depth Max. ft											
Well	bls		Thickness, f	t Description  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1 Porosity Percent Modifier
POF-31	603.0	604.1	1.1	INDURATION; LAMINATIONS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2		
POF-31	604.1	605.4	1.3	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	605.4	606.2	0.8	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, ECHINOIDS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	ECHINOIDS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	606.2	607.4	1.2	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, FALLOTELLA, ECHINOIDS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR	FALLOTELLA, ECHINOIDS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	607.4	609.5	2.1	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FORAMINIFERA, FALLOTELLA, ECHINOIDS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FALLOTELLA, ECHINOIDS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	609.5	610.0	0.5	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE VUGGY POROSITY: MODERATE INDURATION: LAMINATIONS	DOLOMITE	20	MOLDIC	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2		
POF-31	610.0	611.3	1.3	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE MOLDIC AND PINPOINT POROSITY: GOOD INDURATION: BIVALVES. ECHINOIDS	DOLOMITE	20	MOLDIC	MODERATE	BIVALVES	ECHINOIDS	PALE YELLOWISH BROWN: 10YR 6/2		
POF-31	611.3	612.5	1.2	LIMESTONE (MUDSTONE); WHITE (N9); NO OBSERVABLE POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR	BIVALVES	ECHINOID3	WHITE: N9		
POF-31	612.5	617.2	4.7	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FALLOTELLA	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS, FALLOTELLA	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	617.2	618.5	1.3	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, MOLDIC AND VUGGY POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS	LIMESTONE-PACKSTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	618.5	621.2	2.7	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; LAMINATIONS	LIMESTONE-MUDSTONE	20	INTERGRANULAR	MODERATE	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2		
POF-31	621.2	626.7	5.5	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FALLOTELLA	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	E ECHINOIDS, FALLOTELLA	FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
POF-31	626.7	632.5	5.8	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-MUDSTONE	20	INTERGRANULAR	MODERATE	:	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	632.5	634.5	2.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED	LIMESTONE-WACKESTONE	20	INTERGRANULAR		E ECHINOIDS, FRACTURED		VERY PALE ORANGE : 10YR 8/2		
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, VUGGY, AND									
POF-31	634.5	638.0	3.5	MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR	LIMESTONE-WACKESTONE	30	INTERGRANULAR		FRACTURED, ECHINOIDS		VERY PALE ORANGE : 10YR 8/2		
POF-31	638.0	638.8	0.8	POROSITY; MODERATE INDURATION; FORAMINIFERA  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	638.8	640.0	1.2	MODERATE INDURATION; FORAMINIFERA, ECHINOIDS  LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	640.0	641.7	1.7	MODERATE INDURATION; FORAMINIFERA, ECHINOIDS  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS	FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
POF-31	641.7	646.8	5.1	POROSITY; MODERATE INDURATION; FORAMINIFERA, LEPIDOCYCLINA LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	LEPIDOCYCLINA	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	646.8	648.5	1.7	MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4		
POF-31	648.5	650.0	1.5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE INDURATION; FRACTURED, FORAMINIFERA	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	FRACTURED	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	650.0	654.0	4.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	654.0	654.6	0.6	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2		
POF-31	654.6	657.0	2.4	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS	LIMESTONE-PACKSTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	657.0	657.7	0.7	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	657.7	658.4	0.7	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	:	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	658.4	660.0	1.6	LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR AND MOLDIC POROSITY: MODERATE INDURATION: FORAMINIFERA, ECHINOIDS	LIMESTONE-PACKSTONE	30	INTERGRANULAR	MODERATE	E ECHINOIDS		VERY PALE ORANGE : 10YR 8/2		
FOI-51	030.4	000.0	1.0		LIMESTONE-PACKSTONE	30	INTERGRANCEAR	WODLIVATE		1 OTAWINI LIVA	VERT PALE ORANGE : 10110 0/2		
POF-31	660.0	661.7	1.7	LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, BIVALVES, FALLOTELLA	LIMESTONE-GRAINSTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS, BIVALVES, FALLOTELLA	FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
				LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FRACTURED,					ECHINOIDS, FRACTURED,				
POF-31	661.7	662.5	0.8	BIVALVES, GASTROPODS  LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR, VUGGY, AND	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	BIVALVES, GASTROPODS	FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
POF-31	662.5	665.8	3.3	MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, ECHINOIDS, FALLOTELLA, FRACTURED	LIMESTONE-PACKSTONE	30	INTERGRANULAR	MODERATE	ECHINOIDS, FRACTURED, FALLOTELLA	FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, VUGGY, AMD MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, FORAMINIFERA,					FRACTURED, BIVALVES, GASTROPODS,				
POF-31	665.8 668.5	668.5 670.0	2.7 1.5	BIVALVES, GASTROPODS, ECHINOIDS  NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
			-	IND RECOVERT LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND VUGGY POROSITY: MODERATE INDURATION: FORAMINIFERA	LIMESTONE WASKESTONE	20	INTEROPANT AS	MODERATE		FORALMUSES:	VEDV DALE ODANIOE : 40VD 0/2		
POF-31	670.0	670.7	0.7	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR AND MOLDIC	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FALLOTELLA, BIVALVES,		VERY PALE ORANGE : 10YR 8/2		
POF-31	670.7	671.6	0.9	POROSITY; MODERATE INDURATION; FORAMINIFERA, FALLOTELLA, BIVALVE, FRACTURED LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2		
POF-31	671.6	672.5	0.9	POROSITY; MODERATE INDURATION; FORAMINIFERA, BIVALVES  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND	LIMESTONE-GRAINSTONE	30	INTERGRANULAR	MODERATE		FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
POF-31 POF-31	672.5 675.3	675.3 680.0	2.8 4.7	MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, BIVALVES  NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FRACTURED	MOLLUSKS	VERY PALE ORANGE : 10YR 8/2		
POF-31	680.0	684.5	4.5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, SOME FRACTURES	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	SOME FRACTURES	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		
POF-31	684.5	687.5	3.0	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA		30	INTERGRANULAR				VERY PALE ORANGE : 10YR 8/2		
POF-31	687.5	690.0	2.5	MO RECOVERY  LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC	LIVILOTONE-WACKESTONE	30	INTERMINITAR	WODLIATE	-	OWNINITERA	VERTIFIE OF ANGL : 1011\ 0/2		
POF-31	690.0	690.1	0.1	POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-GRAINSTONE	30	INTERGRANULAR	MODERATE		FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4		
POF-31	690.1	694.0	3.9	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	<u> </u>	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2		

Well	Depth Min, ft bls		Thickness, fo	Description	Rock Type	Porosity, percen	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-31	694.0	695.0	1.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31	695.0	696.3	1.3	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	696.3	697.8	1.5	CLAY; VERY PALE ORANGE (10YR 8/2); NO OBSERVABLE POROSITY; POOR INDURATION	CLAY	0	NO OBSERVABLE			1 OTO WINTER ETO	VERY PALE ORANGE : 10YR 8/2			
POF-31	697.8	700.0	2.2	NO RECOVERY  LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR										
POF-31	700.0	703.6	3.6	POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31	703.6	706.4	2.8	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE		FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR										
POF-31 POF-31	706.4 709.5	709.5 710.0	3.1 0.5	POROSITY; MODERATE INDURATION; FORAMINIFERA, SOME FRACTURES  NO RECOVERY	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE	SOME FRACTURES	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION: FRACTURED	LIMEGTONE WASKESTONE	20	INITEDODANIJI AD	MODERATE	FDAOTUDED		VERY PALE ORANGE : 10YR 8/2			
POF-31	710.0	711.3	1.3	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	30	INTERGRANULAR	WODERATE	FRACTURED		VERT PALE URAINGE : 10TR 6/2			
POF-31	711.3	712.3 716.0	1.0	MODERATE INDURATION; FRACTURED  NO RECOVERY	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	712.3	7 10.0	3.7	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR										
POF-31 POF-31	716.0 716.5	716.5 720.0	0.5 3.5	POROSITY; MODERATE INDURATION NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	7 10.5	720.0	3.3	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY;										
POF-31	720.0	721.0	1.0	MODERATE INDURATION LIMESTONE (PACKSTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR POROSITY	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	721.0	722.5	1.5	MODERATE INDURATION	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	722.5	726.0	3.5	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR										
POF-31 POF-31	726.0 728.0	728.0 730.0	2.0	POROSITY; MODERATE INDURATION NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4			
				LIMESTONE (PACKSTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR, VUGGY, AND					GASTROPODS,					
POF-31	730.0	731.0	1.0	MOLDIC POROSITY; MODERATE INDURATION; FORAMINIFERA, GATROPOD, FRACTURED  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR	LIMESTONE-PACKSTONE	30	INTERGRANULAR	MODERATE	FRACTURED	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2			
POF-31	731.0	734.3	3.3	POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	734.3	736.4	2.1	LIMESTONE (GRAINSTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR AND MOLDIC POROSITY; GOOD INDURATION; FORAMINIFERA, GASTROPODS	LIMESTONE-GRAINSTONE	30	INTERGRANULAR	GOOD	GASTROPODS	FORAMINIFERA	GRAYISH ORANGE : 10YR 7/4			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR AND					SOME FRACTURES,					
POF-31	736.4	744.6	8.2	MOLDIC POROSITY; MODERATE INDURATION; SOME FRACTURES, GASTROPODS  LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); POOR INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	GASTROPODS		VERY PALE ORANGE : 10YR 8/2			
POF-31	744.6	750.0	5.4	MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	750.0	761.0	11.0	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); MODERATE INTERGRANULAR POROSITY; MODERATE INDURATION; CHERT, CALCITE, SOME FRACTURES	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	SOME FRACTURES		GRAYISH ORANGE : 10YR 7/4	CHERT		
				LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY;					EDA OTUBEO			CUERT		
POF-31 POF-31	761.0 763.6	763.6 770.0	2.6 6.4	MODERATE INDURATION; CHERT, FRACTURED  NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FRACTURES		GRAYISH ORANGE : 10YR 7/4	CHERT		
DOE 24	770.0	770.0	0.0	LIMESTONE (WACKESTONE); GRAYISH ORANGE (10YR 7/4); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION;	LIMEGTONE WASKESTONE	30	INTERCRANUITAR	MODERATE			CDAYIOU CDANICE : 40VD 7/4			
POF-31	770.0	772.0	2.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	772.0	773.0	1.0	MODERATE INDURATION; FRACTURED  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	773.0	776.0	3.0	POROSITY; MODERATE INDURATION; SOME FRACTURES	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	SOME FRACTURES		VERY PALE ORANGE : 10YR 8/2			
POF-31	776.0	777.0	1.0	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION; FRACTURED	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	777.0	780.0	3.0	NO RECOVERY	LIMESTONE-MODSTONE	10	INTERGRANULAR	FOOR	TRACTORED		VERT FALE ORANGE : 101R 6/2			
POF-31	780.0	783.3	3.3	LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY; MODERATE INDURATION; FRACTURED	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR										
POF-31 POF-31	783.3 785.0	785.0 790.0	1.7 5.0	POROSITY; POOR INDURATION; FRACTURED  NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
				LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); HIGH INTERGRANULAR POROSITY;										
POF-31	790.0	791.0	1.0	MODERATE INDURATION  LIMESTONE (MUDSTONE): VERY PALE ORANGE (10YR 8/2): MODERATE INTERGRANULAR	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	791.0	792.0	1.0	POROSITY; MODERATE INDURATION	LIMESTONE-MUDSTONE	20	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	792.0	800.0	8.0	NO RECOVERY  LIMESTONE (WACKESTONE); VERY PALE ORANGE (10YR 8/2); MODERATE INTERGRANULAR										
POF-31	800.0	801.7	1.7	POROSITY; MODERATE INDURATION; FRACTURED	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	801.7	804.4	2.7	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	804.4	810.0	5.6	NO RECOVERY		1								
POF-31	810.0	811.3	1.3	LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	811.3	815.5	4.2	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO IOBSERVABLE POROSITY: GOOD INDURATION: CHERT	DOLOMITE	0	NO OBSERVABLE	GOOD	CALCAREOUS		PALE YELLOWISH BROWN : 10YR 6/2	CHERT		
				LIMESTONE (MUDSTONE); VERY PALE ORANGE (10YR 8/2); LOW INTERGRANULAR POROSITY;					ONLONIEUUS			CHERI		
POF-31 POF-31	815.5 816.0	816.0 820.0	0.5 4.0	POOR INDURATION NO RECOVERY	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
			-	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW		†		+	CALCAREOUS, SOME					
POF-31	820.0	825.3	5.3	PINPOINT AND VUGGY POROSITY; GOOD INDURATION; CHERT, SOME FRACTURES  DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	GOOD	FRACTURES		PALE YELLOWISH BROWN : 10YR 6/2	CHERT		
POF-31	825.3	830.0	4.7	PINPOINT AND VUGGY POROSITY; GOOD INDURATION	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	GOOD	CALCAREOUS		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	830.0	833.3	3.3	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN : 10YR 5/4			
				DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW										
POF-31	833.3	838.2	4.9	PINPOINT POROSITY; GOOD INDURATION; SOME FRACTURES	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES	<u> </u>	PALE YELLOWISH BROWN : 10YR 6/2			

	Depth Min, ft	Denth May ft												
Well	bls	bls	Thickness, ft	•	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-31	838.2	840.0	1.8	DOLOMITIC-LIMESTONE; YELLOWISH GREY (5Y 7/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE			YELLOWISH GRAY : 5Y 7/2			
POF-31	840.0	845.0	5.0	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS				PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; HIGH PINPOINT AND										
POF-31	845.0	847.6	2.6	MOLDIC POROSITY; GOOD INDURATION  DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	GOOD			GRAYISH ORANGE : 10YR 7/4			
POF-31	847.6	849.5 850.0	1.9	PINPOINT AND MOLDIC POROSITY; GOOD INDURATION  NO RECOVERY	DOLOMITE	20	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	849.5		0.5	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY										
POF-31	850.0	854.8	4.8	POROSITY; GOOD INDURATION; FRACTURES	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	850.0	854.8	4.8	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURES	DOLOMITE	10	PIN POINT - VUGS	GOOD	CALCITE CRYSTALS 853.6 854 FT, FRACTURED	-	PALE YELLOWISH BROWN : 10YR 6/2	CALCITE		
POF-31				DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW					·		PALE TELLOWISH BROWN : 10TR 6/2	CALCITE		
POF-31	845.8	855.7	9.9	PINPOINT AND VUGGY POROSITY; GOOD INDURATION; INTRACLASTS  DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT AND	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	GOOD	INTRACLASTS LAMINATIONS,		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	855.7	857.3	1.6	VUGGY POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	857.3	858.4	1.1	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; NO OBSERVABLE POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	0	NO OBSERVABLE	GOOD	LAMINATIONS, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	858.4	859.4	1.0	DOLOMITE; DARK YELLOWISH ORANGE (10YR 6/6); SUCROSIC; MODERATE PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE			DARK YELLOWISH ORANGE : 10YR 6/6			
				DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY	′									
POF-31	859.4	861.1	1.7	POROSITY; GOOD INDURATION; ORGANICS  DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY;	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS LAMINATIONS, SOME		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	861.1	865.6	4.5	MODERATE INDURATION; LAMINATIONS, SOME FRACTURES, ORGANICS  DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT	DOLOMITE	10	PIN POINT - VUGS	MODERATE	FRACTURES, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	865.6	868.2	2.6	POROSITY; MODERATE INDURATION; SOME FRACTURES	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE	SOME FRACTURES		GRAYISH ORANGE : 10YR 7/4			
POF-31	868.2	870.0	1.8	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	GOOD	LAMINATIONS, ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	870.0	871.6	1.6	DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	670.0	0/1.0	1.0	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW		20	PIN POINT - VUGS	MODERATE	SOME FRACTURES,		GRATISH ORANGE : 101R 7/4			
POF-31	871.6	874.3	2.7	PINPOINT POROSITY; MODERATE INDURATION; SOME FRACTURES, ORGANICS, CARBONATE MUD INFILLING PORES	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	ORGANICS, CARBONATE MUD INFILLING PORES		PALE YELLOWISH BROWN : 10YR 6/2			
									SOME FRACTURES,					
POF-31	874.3	876.3	2.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; SOME FRACTURES, DOLOSTONE INFILLING OF PORES	DOLOMITE	10	PIN POINT - VUGS	MODERATE	DOLOSTONE INFILLING OF PORES		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	876.3	878.2	1.9	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; MODERATE INDURATION	DOLOMITE	0	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY	′	-			DOLOSTONE INFILLING OFPORES					
POF-31	878.2	880.0	1.8	POROSITY; MODERATE INDURATION; DOLOSTONE INFILLING OF PORES  DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; HIGH PINPOINT AND	DOLOMITE	10	PIN POINT - VUGS	MODERATE	UFPURES		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	880.0	881.8	1.8	VUGGY POROSITY; MODERATE INDURATION  DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY	DOLOMITE	30	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	881.8	883.7	1.9	POROSITY; MODERATE INDURATION; FRACTURED, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	FRACTURED, ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT, MOLDIC, AND VUGGY POROSITY; MODERATE INDURATION; SOME FRACTURES,					SOME FRACTURES,					
POF-31	883.7	886.0	2.3	ORGANICS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; HIGH PINPOINT AND	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE	ORGANICS VUGS INFILLED WITH		PALE YELLOWISH BROWN : 10YR 6/2			
				VUGGY POROSITY; MODERATE INDURATION; ORGANICS, VUGS INFILLED WITH DOLOSTONE AND					DOLOSTONE AND					
POF-31	886.0	890.0	4.0	ORGANICS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE	DOLOMITE	30	PIN POINT - VUGS	MODERATE	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	890.0	892.5	2.5	PINPOINT POROSITY; GOOD INDURATION  DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT	DOLOMITE	20	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	892.5	894.1	1.6	POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
				DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY					SOME FRACTURES, SOME VUGS INFILLED					
POF-31	894.1	897.1	3.0	POROSITY; GOOD INDURATION; SOME FRACTURES, SOME VUGS INFILLED WITH DOLOSTONE DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE	DOLOMITE	10	PIN POINT - VUGS	GOOD	WITH DOLOSTONE LAMINATIONS,		GRAYISH ORANGE : 10YR 7/4	T		
POF-31	897.1	898.4	1.3	PINPOINT AND VUGGY POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	GOOD	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	898.4	898.9	0.5	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; MODERATE PINPOINT AND INTERGRANULAR POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	GOOD	LAMINATIONS, ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	898.9	900.0	1.1	NO RECOVERY DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; HIGH PINPOINT, VUGGY,					-					
POF-31	900.0	904.0	4.0	MOLDIC, AND INTERGRANULAR POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	904.0	905.0	1.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; LOW PINPOINT, VUGGY, AND INTERGRANULAR POROSITY; GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	905.0	908.0	3.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; HIGH PINPOINT, MOLDIC, AND INTERGRANULAR POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS				MODERATE YELLOWISH BROWN: 10YR 5/4			
				DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; HIGH PINPOINT, VUGGY,										
POF-31	908.0	910.0	2.0	MOLDIC, AND INTERGRANULAR POROSITY; GOOD INDURATION  DOLOMITE: MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; HIGH PINPOINT AND	DOLOMITE	30	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/4			<u> </u>
POF-31	910.0	914.8	4.8	INTERGRANULAR POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITE	30	PIN POINT - VUGS	MODERATE	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	914.8	919.5	4.7	DOLOMITE; DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; MEDIUM PINPOINT AND MOLDIC POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	ORGANICS		DARK YELLOWISH BROWN : 10YR 4/2			
POF-31	919.5	920.0	0.5	NO RECOVERY  DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT										
POF-31	920.0	921.2	1.2	POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	921.2	922.4	1.2	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; HIGH PINPOINT AND INTERGRANULAR POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	922.4	925.8	3.4	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES		PALE YELLOWISH BROWN : 10YR 6/2			
PUF-31	922.4	925.8	3.4	INIOLDIC FUNUSITT, GUUD INDUKATIUN, SUME FKACTUKES	INOTOWILE	10	JEIN POINT - VUGS	GOOD	SUIVIE FRACTURES	I	PALE TELLOWISH BROWN: 10YR 6/2			1

	Depth Min. ft	Depth Max, ft												
Well	bls		Thickness, f	•	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifie
POF-31	925.8	927.5	1.7	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); SUCROSIC; MODERATE PINPOINT AND INTERGRANULAR POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN : 10YR 5/4			
POF-31	927.5	928.8	1.3	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); SUCROSIC; MODERATE PINPOINT, VUGGY, MOLDIC, AND INTERGRANULAR POROSITY; GOOD INDURATION; SOME FRACTURES	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	928.8	930.0	1.2	NO RECOVERY										
POF-31	930.0	932.4	2.4	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD INDURATION	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	932.4	934.1	1.7	DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	0	NO OBSERVABLE	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-31	934.1	935.7	1.6	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PINPOINT AND MOLDIC POROSITY; GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD	TIVIOTOTIE		PALE YELLOWISH BROWN: 10YR 6/2	0211		
POF-31	935.7	938.1	2.4	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT	DOLOMITE	10	PIN POINT - VUGS	GOOD	LAMINDATIONS, ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	938.1	938.9	0.8	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; LOW INDURATION	DOLOMITE		PIN POINT - VUGS	POOR	51167.111100		PALE YELLOWISH BROWN: 10YR 6/2			
POF-31	938.9	940.0	1.1	NO RECOVERY										
POF-31	940.0	941.7	1.7	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITE	30	PIN POINT - VUGS	MODERATE	ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	941.7	944.7	3.0		DOLOMITE	30	PIN POINT - VUGS	GOOD	SOME FRACTURES		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	944.7	946.5	1.8	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; SOME FRACTURES	DOLOMITE	10	PIN POINT - VUGS	MODERATE	SOME FRACTURES		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	946.5	949.5	3.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES, ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	949.5	950.0	0.5	NO RECOVERY DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT AND					SOME FRACTURES,					
POF-31	950.0	952.3	2.3	VUGGY POROSITY; GOOD INDURATION; SOME FRACTURES, ORGANICS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	952.3	953.8	1.5	PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES  DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES		MODERATE YELLOWISH BROWN: 10YR 5/4			
POF-31	953.8	955.0	1.2	POROSITY; MODERATE INDURATION  DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE;	DOLOMITE	10	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	955.0	956.3	1.3	MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	956.3	957.2	0.9	DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	957.2	960.0	2.8	DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; HIGH PINPOINT AND MOLDIC POROSITY; GOOD INDURATION	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	960.0	962.4	2.4	DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	GOOD	LAMINATIONS, ORGANICS		MODERATE YELLOWISH BROWN : 10YR 5/5			
POF-31	962.4	964.1	1.7	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION; LAMINATIONS	DOLOMITE	10	PIN POINT - VUGS	GOOD	LAMINATIONS		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	964.1	965.7	1.6	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	965.7	967.3	1.6		DOLOMITE	0	NO OBSERVABLE	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	967.3	968.8	1.5	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	968.8	970.0	1.2	NO RECOVERY DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; HIGH										
POF-31	970.0	971.2	1.2	PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	971.2	975.2	4.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PIN POINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN: 10YR 5/5			
				CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW					SOME FRACTURES,					
POF-31	975.2	977.8	2.6	PIN POINT AND VUGGY POROSITY; MODERATE INDURATION; SOME FRACTURES, CRYSTALLINE	DOLOMITE	10	PIN POINT - VIIGS	MODERATE	CRYSTALLINE CALCITE ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN: 10YR 5/5			
. 5. 01	3.0.2	50	2.0				,000		CRYSTALLINE CALCITE					
				DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PIN					ON FRACTURE SURFACE,					
POF-31	977.8	980.8	3.0	POINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE, ORGANICS, INTRACLASTS	DOLOMITE	20	PIN POINT - VUGS	GOOD	ORGANICS, INTRACLASTS		MODERATE YELLOWISH BROWN: 10YR 5/5			
				DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, CRYSTALLINE CALCITE ON					SOME FRACTURES, CRYSTALLINE CALCITE					
POF-31	980.8	982.5	1.7	FRACTURE SURFACE	DOLOMITE	10	PIN POINT - VUGS	GOOD	ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	982.5	983.5	1.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PIN POINT AND MOLDIC POROSITY; GOOD INDURATION; FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN : 10YR 5/5			
	-		-	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT					SOME FRACTURES,		2 3.11.5			
POF-31	983.5	985.0	1.5	POROSITY; GOOD INDURATION; SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	10	PIN POINT - VUGS	GOOD	CRYSTALLINE CALCITE ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN : 10YR 5/5			
									CRYSTALLINE CALCITE ON FRACTURE SURFACE,					
				DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY;					LAMINATIONS,					
POF-31	985.0	988.1	3.1	GOOD INDURATION; FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE, LAMINATIONS, ORGANICS, INTRACLASTS	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS, INTRACLASTS		PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT					LAMINATIONS, FRACTURED, ORGANICS,					
DOE 24	000.4	000.0	4.0	POROSITY; MODERATE INDURATION; LAMINATIONS, FRACTURED, ORGANICS, CRYSTALLINE	DOLOMITE	40	DIN DOINT VIVO	MODERATE	CRYSTALLINE CALCITE		MODERATE VELLOWIGH PROVING 40075 5/5			
POF-31	988.1	990.0	1.9	CALCITE ON FRACTURE SURFACE	DOLOMITE	10	PIN POINT - VUGS	IMODERATE	ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN: 10YR 5/5			1

	Depth Min, ft	Depth Max, ft												
Well	bls		Thickness, f	Description	Rock Type	Porosity, percen	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-31	990.0	991.2	1.2	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY GOOD INDURATION; FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE		PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT										
POF-31	991.2	992.3	1.1	POROSITY; GOOD INDURATION; INTRACLASTS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; GOOD PIN POINT	DOLOMITE	10	PIN POINT - VUGS	GOOD	INTRACLASTS FRACTURED,		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	992.3	993.4	1.1	AND MOLDIC POROSITY; GOOD INDURATION; FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	30	PIN POINT - VUGS	GOOD	CRYSTALLINE CALCITE ON FRACTURE SURFACE		MODERATE YELLOWISH BROWN : 10YR 5/5			
				DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDI	С				ONTINOTONE CONTINOE					
POF-31	993.4	994.4	1.0	POROSITY; MODERATE INDURATION DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; HIGH PINPOINT AND MOLDIC	DOLOMITE	20	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	994.4	995.4	1.0	POROSITY; MODERATE INDURATION DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT AND	DOLOMITE	30	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	995.4	996.9	1.5	MOLDIC POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/5			
POF-31	996.9	998.0	1.1	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION, SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	30	PIN POINT - VUGS	MODERATE	SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE	BRYOZOANS	GRAYISH ORANGE : 10YR 7/6			
				DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDI POROSITY; GOOD INDURATION, SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE	С				SOME FRACTURES, CRYSTALLINE CALCITE					
POF-31	998.0	999.3	1.3	SURFACE	DOLOMITE	20	PIN POINT - VUGS	GOOD	ON FRACTURE SURFACE		GRAYISH ORANGE : 10YR 7/4			
POF-31	999.3	1,000.0	0.7	NO RECOVERY DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT AND										
POF-31	1,000.0	1,001.1	1.1	MOLDIC POROSITY; GOOD INDURATION; ORGANICS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PIN	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,001.1	1,002.3	1.2	POINT AND MOLDIC POROSITY; MODERATE INDURATION; ORGANICS DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT	DOLOMITE	20	PIN POINT - VUGS	MODERATE	LAMINATIONS,		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,002.3	1,003.4	1.1	POROSITY; MODERATE INDURATION; LAMINATIONS, INTRACLASTS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	INTRACLASTS		MODERATE YELLOWISH BROWN : 10YR 5/5			
POF-31	1,003.4	1,004.4	1.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,004.4	1,006.3	1.9	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDI POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,006.3	1,008.0	1.7	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PIN POINT ANI MOLDIC POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS		20	PIN POINT - VUGS		LAMINATIONS, ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY	· ,				LAMINATIONS,					
POF-31	1,008.0	1,010.0	2.0	MODERATE INDURATION; LAMINATIONS, ORGANICS DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGG'		10	PIN POINT - VUGS		ORGANICS LAMINATIONS,		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,010.0	1,012.4	2.4	POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,012.4	1,014.6	2.2	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION; LAMINATIONS, SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGG		10	PIN POINT - VUGS	GOOD	LAMINATIONS, SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE LAMINATIONS,		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,014.6	1,016.4	1.8	POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	1		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,016.4	1,018.0	1.6	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDI POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,018.0	1,019.5	1.5	DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDI POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	LAMINATIONS, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
				DOLOMITIC-LIMESTONE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT					LAMINATIONS,					
POF-31	1,019.5	1,020.5	1.0	POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	ORGANICS LAMINATIONS,		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,020.5	1,022.5	2.0	PIN POINT AND MOLDIC POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS, INTRACLASTS, CHERT	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE	ORGANICS, INTRACLASTS, CHERT		PALE YELLOWISH BROWN : 10YR 6/2	CHERT	5	
POF-31	1,022.5	1,025.5	3.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	0	NO OBSERVABLE	MODERATE	LAMINATIONS, ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
	1,025.5	1.027.5	2.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT AND MOLDIC POROSITY: MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS		0.107.11.100		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,025.5	1,027.5	2.0		DOLOWITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS COME		PALE TELLOWISH BROWN: 10TR 6/2			
POF-31	1,027.5	1,029.0	1.5	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT AND MOLDIC POROSITY; MODERATE INDURATION; LAMINATIONS, SOME FRACTURES, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS, SOME FRACTURES, ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,029.0	1,030.0	1.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,030.0	1.033.0	3.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PIN POINT ANI MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, CHERT INTRACLAST	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED, CHERT INTRACLAST		PALE YELLOWISH BROWN : 10YR 6/2			
	1,033.0	1,037.4	4.4	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY MODERATE INDURATION; LAMINATION, FRACTURED, ORGANICS		10			LAMINATION, FRACTURED, ORGANICS		PALE YELLOWISH BROWN: 10YR 6/2			
POF-31	1,033.0	1,037.4	4.4	INIODENATE INDURATION, LAWINATION, FRACTURED, ORGANICS	DOLOMITE	10	FIN POINT - VUGS	WODERATE	LAMINATIONS,		FALE TELLOWISH BROWN: TUTR 6/2			
POF-31	1,037.4	1,040.0	2.6	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT POROSITY; GOOD INDURATION: LAMINATIONS. FRACTURED. ORGANICS. CHERT INTRACLAST	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED, ORGANICS, CHERT INTRACLAST		MODERATE YELLOWISH BROWN : 10YR 5/5			
				DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;					GHERT INTRACEAST					
POF-31	1,040.0	1,041.8	1.8	GOOD INDURATION DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	10	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,041.8	1,044.0	2.2	POROSITY; MODERATE INDURATION; LAMINATIONS  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY;	DOLOMITE	30	PIN POINT - VUGS	MODERATE	LAMINATIONS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,044.0	1,045.0	1.0	MODERATE INDURATION DOLOMITE: MODERATE YELLOWISH BROWN: 10YR 5/5; MICROCRYSTALLINE; MODERATE	DOLOMITE	10	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,045.0	1,048.0	3.0	PINPOINT POROSITY; GOOD INDURATION; LAMINATIONS	DOLOMITE	20	PIN POINT - VUGS	GOOD	LAMINATIONS		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,048.0	1,050.0	2.0	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/5; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD			MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,050.0	1,052.0	2.0	DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PIN POINT AND VUGGY POROSITY; GOOD INDURATION; SOME FRACTURES	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES		MODERATE YELLOWISH BROWN: 10YR 5/5			
1 01-01	1,000.0	1,002.0	2.0	The same state of the same sta	DOLOMITE		J. 1141 - VUGO	3000	55211010101CE	1				1

	Depth Min, ft	Depth Max, ft	t											
Well	bls		Thickness, f	ft Description	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
				DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;					FRACTURED, CRYSTALLINE CALCITE					
POF-31	1,052.0	1,058.3	6.3	GOOD INDURATION; FRACTURED, CRYSTALLINE CALCITE ON FRACTURE SURFACE DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PIN	DOLOMITE	20	PIN POINT - VUGS	GOOD	ON FRACTURE SURFACE		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,058.3	1,060.0	1.7	POINT POROSITY; GOOD INDURATION  DOLOMITE; MODERATE YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; LOW PIN POINT	DOLOMITE	20	PIN POINT - VUGS	GOOD	LAMINATIONS,		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,060.0	1,061.6	1.6	POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,061.6	1,064.3	2.7	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY; GOOD INDURATION; CRYSTALLINE CALCITE ON FRACTURE SURFACE	DOLOMITE	10	PIN POINT - VUGS	GOOD	ON FRACTURE SURFACE		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,064.3	1,067.0	2.7	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PIN POINT POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,067.0	1,070.0	3.0	DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW PIN POINT POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,070.0	1,072.0	2.0	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION; SOME FRACTURES	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,072.0	1,073.0	1.0	DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD INDURATION; SOME FRACTURES	DOLOMITE	30	PIN POINT - VUGS	GOOD	SOME FRACTURES		DARK YELLOWISH ORANGE : 10YR 6/6			
10101	1,072.0	1,070.0	1.0	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/5; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; ORGANICS; BIVALVES AND	BOLOWITE	- 00	1 11 1 0 11 1 7 0 0 0	COOL	ORGANICS; BIVALVES		Drune received of the control of the			
POF-31	1,073.0	1,074.8	1.8	GASTROPODS	DOLOMITE	20	PIN POINT - VUGS	GOOD	AND GASTROPODS	MOLLUSKS	MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,074.8	1,076.3	1.5	DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,076.3	1,078.6	2.3	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/5; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; GOOD INDURATION; BIVALVES	DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES	MOLLUSKS	MODERATE YELLOWISH BROWN : 10YR 5/5			
POF-31	1,078.6	1,080.0	1.4	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,080.0	1,082.7	2.7	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/5; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD INDURATION; SOME FRACTURED	DOLOMITE	30	PIN POINT - VUGS	GOOD	SOME FRACTURED		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,082.7	1,086.6	3.9	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/5; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; GOOD INDURATION; LAMINATIONS, SOME FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	LAMINATIONS, SOME FRACTURED		MODERATE YELLOWISH BROWN : 10YR 5/5			
				DOLOMITE; DARK YELLOWISH ORANGE: 10YR 6/6; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	30		GOOD			DARK YELLOWISH ORANGE : 10YR 6/6			
POF-31	1,086.6	1,090.0	3.4	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;			PIN POINT - VUGS		FRACTURED					
POF-31	1,090.0	1,091.6	1.6	GOOD INDURATION DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	30	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,091.6	1,092.6	1.0	POROSITY; GOOD INDURATION; FRACTURED DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED LAMINATIONS,		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,092.6	1,097.5	4.9	INDURATION; LAMINATIONS, FRACTURED  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; POOR	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED FRACTURED, CHERT		GRAYISH ORANGE : 10YR 7/4			
POF-31 POF-31	1,097.5 1,098.0	1,098.0 1,100.0	0.5 2.0	INDURATION; FRACTURED, CHERT INTRACLAST NO RECOVERY	DOLOMITE	30	PIN POINT - VUGS	POOR	INTRACLAST		GRAYISH ORANGE : 10YR 7/4	CHERT	5	
POF-31	1,100.0	1,104.0	4.0	DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; BIVALVES	DOLOMITE	30	PIN POINT - VUGS	GOOD	BIVALVES		PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;					LAMINATIONS, ORGANICS					
POF-31	1,104.0	1,105.0	1.0	GOOD INDURATION; LAMINATIONS, ORGANICS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT	DOLOMITE	10	PIN POINT - VUGS	GOOD	LAMINATIONS,		PALE YELLOWISH BROWN: 10YR 6/2			
POF-31	1,105.0	1,106.0	1.0	POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT,	DOLOMITE	20	PIN POINT - VUGS	GOOD	ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,106.0	1,108.4	2.4	VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; BIVALVES  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT	DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,108.4	1,110.0	1.6	POROSITY; POOR INDURATION  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;	DOLOMITE	20	PIN POINT - VUGS	POOR			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,110.0	1,111.0	1.0	GOOD INDURATION; FRACTURED DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT,	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED LAMINATIONS, BIVALVES,		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,111.0	1,113.0	2.0	VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; LAMINATIONS, BIVALVES, GASTRPODS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT	DOLOMITE	20	PIN POINT - VUGS	GOOD	GASTRPODS	MOLLUSKS	PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,113.0	1,114.0	1.0	POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,114.0	1,114.8	0.8	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	GOOD	LAMINATIONS, ORGANICS		PALE YELLOWISH BROWN : 10YR 6/2			
				DOLONIES DALENEL ONION DECINE					SOME FRACTURES,					
				DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, CRYSTALLINE CALCITE ON					CRYSTALLINE CALCITE ON FRACTURE SURFACE,					
POF-31	1,114.8	1,118.0	3.2	FRACTURE SURFACE, BIVALVES, GASTROPODS	DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES, GASTROPODS	MOLLUSKS	PALE YELLOWISH BROWN : 10YR 6/2			
				DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;					SOME FRACTURES, CRYSTALLINE CALCITE					
POF-31	1,118.0	1,120.0	2.0	GOOD INDURATION; SOME FRACTURES, CRYSTALLINE CALCITE ON FRACTURE SURFACE DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD	DOLOMITE	10	PIN POINT - VUGS	GOOD	ON FRACTURE SURFACE		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,120.0	1,120.7	0.7	INDURATION; SOME FRACTURES  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES LAMINATIONS, SOME		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,120.7	1,122.5	1.8	GOOD INDURATION; LAMINATIONS, SOME FRACTURES	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURES		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,122.5	1,125.8	3.3	DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, BIVALVES, GASTROPODS	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES, BIVALVES, GASTROPODS	MOLLUSKS	GRAYISH ORANGE : 10YR 7/4			
POF-31	1,125.8	1.130.0	4.2	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; SOME FRACTURES, BIVALVES, GASTROPODS	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES, BIVALVES, GASTROPODS	MOLLUSKS	PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,130.0	1,131.2	1.2	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY: MODERATE INDURATION; SOME FRACTURES	DOLOMITE	20	PIN POINT - VUGS		,	02200110	VERY PALE ORANGE : 10YR 8/2			
FUF-31	1,130.0	1,131.2	1.2		DOLOMITE	20	FIN POINT - VUGS	MODERATE	LAMINATIONS, SOME		VERT PALE URANGE : TUTK 8/2			
POF-31	1,131.2	1,131.5	0.3	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; LAMINATIONS, SOME FRACTURES, ORGANICS, INTRACLASTS	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,131.5	1,134.4	2.9	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; LAMINATIONS, FRACTURED, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS, FRACTURED, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,131.5	1,134.4	2.9		DOLOMITE	10	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			

	Depth Min, ft	Donth May ft									1			
Well	bls		Thickness, ft	Description	Rock Type	Porosity, percent	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-31	1,134.4	1,136.5	2.1	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,136.5	1,139.0	2.5	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/5; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	10	PIN POINT - VUGS		LAMINATIONS, ORGANICS		MODERATE YELLOWISH BROWN: 10YR 5/5			
	·	·		DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/5; MICROCRYSTALLINE; LOW PINPOINT										
POF-31	1,139.0	1,140.0	1.0	POROSITY; GOOD INDURATION; FRACTURED  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED CRYSTALLINE CALCITE		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,140.0	1,141.7	1.7	VUGGY POROSITY; GOOD INDURATION; CRYSTALLINE CALCITE GROWING IN VUGS DOLOMITIC-LIMESTONE; MODERATE YELLOWISH BROWN: 10YR 5/5; MICROCRYSTALLINE; LOW	DOLOMITE	20	PIN POINT - VUGS	GOOD	GROWING IN VUGS		PALE YELLOWISH BROWN: 10YR 6/2			
POF-31	1,141.7	1,142.8	1.1	PINPOINT AND INTERGRANULAR POROSITY; MODERATE INDURATION; LAMINATIONS	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS		MODERATE YELLOWISH BROWN: 10YR 5/5			
POF-31	1,142.8	1,145.0	2.2	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,145.0	1,145.8	0.8	DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; MICROCRYSTALLINE; NO OBSERVABLE POROSITY; GOOD INDURATION	DOLOMITE	0	NO OBSERVABLE	GOOD			DARK YELLOWISH BROWN : 10YR 4/2			
POF-31	1,145.8	1.147.0	1.2	DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGG POROSITY: MODERATE INDURATION	) DOLOMITE	30	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN : 10YR 6/2			
	1,147.0	1,148.8	1.8	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY					LAMINATIONS					
POF-31	1,147.0	1,140.0	1.0	POROSITY; MODERATE INDURATION; LAMINATIONS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	CRYSTALLINE CALCITE		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,148.8	1,150.0	1.2	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; CRYSTALLINE CALCITE ON DISSOLUTION SURFACE	DOLOMITE	20	PIN POINT - VUGS	GOOD	ON DISSOLUTION SURFACE		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,150.0	1,151.0	1.0	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY: MODERATE INDURATION: CRYSTALLINE CALCITE GROWING IN VUGS	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	MODERATE	CRYSTALLINE CALCITE GROWING IN VUGS		VERY PALE ORANGE : 10YR 8/2			
	·	·	-	DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOIN	Г									
POF-31	1,151.0	1,151.6	0.6	POROSITY; GOOD INDURATION; FRACTURED  DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	GOOD	FRACTURED		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,151.6	1,152.5	0.9	PINPOINT AND MOLDIC POROSITY; MODERATE INDURATION; SOME FRACTURES  DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE	SOME FRACTURES		PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,152.5	1,154.8	2.3	PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED, ORGANICS  DOLOMITIC-LIMESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOIN	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	MODERATE	FRACTURED, ORGANICS LAMINATIONS,		PALE YELLOWISH BROWN: 10YR 6/2			
POF-31	1,154.8	1,157.7	2.9	POROSITY; MODERATE INDURATION; LAMINATIONS, FRACTURED, CHERT	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	FRACTURED, CHERT		PALE YELLOWISH BROWN : 10YR 6/2	CHERT	5	
POF-31	1,157.7	1,160.0	2.3	NO RECOVERY  DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT										
POF-31	1,160.0	1,164.7	4.7	POROSITY; MODERATE INDURATION; FRACTURED, ORGANICS  DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	FRACTURED, ORGANICS		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,164.7	1,165.7	1.0	PINPOINT AND VUGGY POROSITY; MODERATE INDURATION  DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,165.7	1,168.0	2.3	POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,168.0	1,170.0	2.0	NO RECOVERY  DOLOMITIC-LIMESTONE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT					LAMINATIONS,					
POF-31	1,170.0	1,172.5	2.5	AND VUGGY POROSITY; MODERATE INDURATION; SOME FRACTURES, LAMINATIONS, ORGANICS DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE	ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,172.5	1,174.2	1.7	MOLDIC POROSITY; POOR INDURATION	DOLOMITE	30	PIN POINT - VUGS	POOR			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,174.2	1,176.0	1.8	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,176.0	1,176.6	0.6	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,176.6	1,179.0	2.4	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY: MODERATE INDURATION: FRACTURED		10	PIN POINT - VUGS		FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,170.0	1,180.0		NO RECOVERY	DOLOWITTO-LIMESTONE	10	FIN FOINT - VOGS	MODEIVATE	TRACTORED		VERT PALE ORANGE : 1011X 0/2			
POF-31	1,180.0	1,181.3	1.3	DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,181.3	1,183.0	1.7	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,183.0	1.185.3	2.3	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION; SOME FRACTURES, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES, ORGANICS		GRAYISH ORANGE : 10YR 7/4			
	·	,	-	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND										
POF-31	1,185.3	1,186.4		MOLDIC POROSITY; GOOD INDURATION; ORGANICS  DOLOMITIC-LIMESTONE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT	DOLOMITE	30	PIN POINT - VUGS	GOOD	ORGANICS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,186.4	1,187.1	0.7	POROSITY; POOR INDURATION  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	POOR			GRAYISH ORANGE : 10YR 7/4			
POF-31 POF-31	1,187.1 1,189.5	1,189.5 1,190.0	2.4 0.5	MOLDIC POROSITY; GOOD INDURATION  NO RECOVERY	DOLOMITE	30	PIN POINT - VUGS	GOOD			GRAYISH ORANGE : 10YR 7/4			
	·	·		DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD			DIN DON'T 'T'	655-	ED A OTUE		VEDVDALE ODVINE LOVE -			
POF-31	1,190.0	1,190.8	0.8	INDURATION; FRACTURED  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,190.8	1,191.8	1.0	GOOD INDURATION  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY	DOLOMITE ;	30	PIN POINT - VUGS	GOOD	SOME FRACTURES,		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,191.8	1,194.3	2.5	GOOD INDURATION; SOME FRACTURES, ORGANICS DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY	DOLOMITE	20	PIN POINT - VUGS	GOOD	ORGANICS		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,194.3	1,196.6	2.3	GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,196.6	1,197.2	0.6	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, BIVALVES	DOLOMITE	30	PIN POINT - VUGS	MODERATE	FRACTURED, BIVALVES		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,197.2	1,999.0	801.8	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; BIVALVES	DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,999.0	1,200.8	-798.2	DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY IGOOD INDURATION; FRACTURED		20	PIN POINT - VUGS	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
	·	·		DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY	,									
POF-31	1,200.8	1,204.2	3.4	GOOD INDURATION; SOME FRACTURES  DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND	DOLOMITE	20	PIN POINT - VUGS	GOOD	SOME FRACTURES SOME FRACTURES,		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,204.2	1,207.4	3.2	MOLDIC POROSITY; MODERATE INDURATION; SOME FRACTURES, BIVAVLES  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY	DOLOMITE	30	PIN POINT - VUGS	MODERATE	BIVAVLES		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,207.4	1,208.4	1.0	GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			

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Well	Depth Min, ft bls		Thickness, ft	Description	Rock Type	Porosity, percen	t Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
			,	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;	•					,		, ,		,
POF-31	1,208.4	1,210.0	1.6	GOOD INDURATION  DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;	DOLOMITE	30	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,210.0	1,211.0	1.0	GOOD INDURATION  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSIT	DOLOMITE V:	30	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,211.0	1,212.2	1.2	GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,212.2	1,214.4	2.2	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD INDURATION; SOME FRACTURES, ORGANICS	DOLOMITE	30	PIN POINT - VUGS	GOOD	SOME FRACTURES, ORGANICS		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,214.4	1,218.0	3.6	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITE	30	PIN POINT - VUGS	MODERATE	ORGANICS		VERY PALE ORANGE : 10YR 8/2			
	·	·		DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY					0.107.11.100					
POF-31	1,218.0	1,219.0	1.0	POROSITY; POOR INDURATION  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSIT	DOLOMITE Y;	30	PIN POINT - VUGS	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,219.0	1,220.4	1.4	GOOD INDURATION; FRACTURED DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,220.4	1,221.8	1.4	POROSITY; GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,221.8	1,222.7	0.9	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; POCINDURATION	DOLOMITE	30	PIN POINT - VUGS	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,222.7	1,224.3	1.6	DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; GASTROPODS	DOLOMITE	10	PIN POINT - VUGS	GOOD	GASTROPODS		VERY PALE ORANGE : 10YR 8/2			
	1,224.3	1,225.0	0.7	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSIT GOOD INDURATION		20	PIN POINT - VUGS	GOOD						
POF-31	·	·		DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOO	DD						VERY PALE ORANGE : 10YR 8/2			
POF-31	1,225.0	1,225.7	0.7	INDURATION DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	10	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,225.7	1,226.6	0.9	POROSITY; GOOD INDURATION  DOLOMITE: VERY PALE ORANGE: 10YR 8/2: MICROCRYSTALLINE: MODERATE PINPOINT POROSIT	DOLOMITE V:	30	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,226.6	1,228.0	1.4	GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,228.0	1,229.6	1.6	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; ORGANICS, BIVAVLES	DOLOMITE	30	PIN POINT - VUGS	GOOD	ORGANICS, BIVAVLES		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,229.6	1,230.0	0.4	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AN VUGGY POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	MODERATE			VERY PALE ORANGE : 10YR 8/2			
	·	·	-	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND										
POF-31	1,230.0	1,230.8	0.8	VUGGY POROSITY; GOOD INDURATION  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; POC	DOLOMITE DR	20	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,230.8	1,231.6	0.8	INDURATION DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	30	PIN POINT - VUGS	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,231.6	1,233.0	1.4	POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31	1,233.0	1,234.0	1.0	DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY POOR INDURATION	DOLOMITE	30	PIN POINT - VUGS	POOR			PALE YELLOWISH BROWN : 10YR 6/2			
POF-31	1,234.0	1,234.5	0.5	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; POOR INDURATION	DOLOMITE	30	PIN POINT - VUGS	POOR			GRAYISH ORANGE : 10YR 7/4			
	·	1,236.0	1.5	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDI POROSITY; GOOD INDURATION; GASTROPODS		20			GASTROPODS					
POF-31	1,234.5	·	-	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;			PIN POINT - VUGS	GOOD	GASTROPODS		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,236.0	1,237.1	1.1	MODERATE INDURATION  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; GOOD	DOLOMITE	30	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
POF-31 POF-31	1,237.1 1,239.2	1,239.2 1,240.0	2.1 0.8	INDURATION NO RECOVERY	DOLOMITE	30	PIN POINT - VUGS	GOOD			GRAYISH ORANGE : 10YR 7/4			
				DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY,										
POF-31	1,240.0	1,241.0	1.0	AND MOLDIC POROSITY; GOOD INDURATION; BIVALVES, GASTROPODS  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;	DOLOMITE	20	PIN POINT - VUGS	GOOD E	BIVALVES, GASTROPODS		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,241.0	1,242.0	1.0	GOOD INDURATION  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; POC	DOLOMITE	30	PIN POINT - VUGS	GOOD			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,242.0	1,243.0	1.0	INDURATION	DOLOMITE	30	PIN POINT - VUGS	POOR			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,243.0	1,250.0	7.0	NO RECOVERY DOLOMITIC-LIMESTONE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT										
POF-31	1,250.0	1,251.0	1.0	POROSITY; GOOD INDURATION; FRACTURED  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY;	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	GOOD	FRACTURED		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,251.0	1,251.4	0.4	MODERATE INDURATION; FRACTURED  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSIT	DOLOMITE	30	PIN POINT - VUGS	MODERATE	FRACTURED		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,251.4	1,253.3	1.9	MODERATE INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,253.3	1,256.0	2.7	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE			VERY PALE ORANGE : 10YR 8/2			
POF-31	1,256.0	1,258.0	2.0	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; MODERATE INDURATION: FRACTURED	DOLOMITE	30	PIN POINT - VUGS		FRACTURED		VERY PALE ORANGE : 10YR 8/2			
				DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POO	R									
POF-31	1,258.0	1,260.5	2.5	INDURATION; FRACTURED DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;		10	PIN POINT - VUGS	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,260.5	1,262.4	1.9	MODERATE INDURATION; FRACTURED  DOLOMITE; VERY PALE ORANGE : 10YR 8/2: MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED		GRAYISH ORANGE : 10YR 7/4			
POF-31	1,262.4	1,263.7	1.3	VUGGY POROSITY; POOR INDURATION; SOME FRACTURES	DOLOMITE	20	PIN POINT - VUGS	POOR	SOME FRACTURES		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,263.7	1,267.1	3.4	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; SOME FRACTURES	DOLOMITE	10	PIN POINT - VUGS	MODERATE	SOME FRACTURES		VERY PALE ORANGE : 10YR 8/2			
POF-31	1,267.1	1,268.4	1.3	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POO INDURATION: FRACTURED	R DOLOMITE	10	PIN POINT - VUGS	POOR	FRACTURED		VERY PALE ORANGE : 10YR 8/2			
				DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; POOR INDURATION				POOR						
POF-31	1,268.4	1,270.0	1.6	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGG		20	PIN POINT - VUGS				VERY PALE ORANGE : 10YR 8/2			
POF-31	1,270.0	1,271.7	1.7	POROSITY; MODERATE INDURATION  DOLOMITIC-LIMESTONE: VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE	DOLOMITE	20	PIN POINT - VUGS	MODERATE			GRAYISH ORANGE : 10YR 7/4			
DOE 24	1 074 7	1 074 0	3.1	PINPOINT AND VUGGY POROSITY; POOR INDURATION; LAMINATIONS, SOME FRACTURES, ORGANICS	DOLOMITIC-LIMESTONE	20	DIN DOINT MAGE	POOR	LAMINATIONS, SOME FRACTURES, ORGANICS		VEDV DALE ORANGE : 10VD 0/0			
POF-31	1,271.7	1,274.8	3.1	отколино	DOFOMITIC-FIMESTONE	ZU	PIN POINT - VUGS	POUR	I NACTURES, UKGANICS	<u> </u>	VERY PALE ORANGE : 10YR 8/2	<u> </u>		

	Depth Min, ft	Depth Max, ft									1	
Well	bls	bls	Thickness, f	·	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature Fossil type	Color1	Access Min Type1	Access Min Pct1 Porosity Percent Modifier
POF-31	1,274.8	1,276.3	1.5	DOLOMITIC-LIMESTONE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND MOLDIC POROSITY; MODERATE INDURATION; SOME FRACTURES	DOLOMITIC-LIMESTONE	30	PIN POINT - VUGS	MODERATE	SOME FRACTURES	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,276.3	1,278.0	1.7	DOLOMITIC-LIMESTONE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE	LAMINATIONS, ORGANICS	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,278.0	1,280.0	2.0	DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; POOR INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	POOR	LAMINATIONS, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,280.0	1,282.0	2.0	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; POOR INDURATION	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	POOR		VERY PALE ORANGE : 10YR 8/2		
POF-31	1,282.0	1,284.4	2.4	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; POOR INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	0	NO OBSERVABLE	POOR	LAMINATIONS, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
	·			DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT					CROANICE			
POF-31 POF-31	1,284.4 1,289.2	1,289.2 1,290.0	4.8 0.8	POROSITY; POOR INDURATION NO RECOVERY	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	POOR		VERY PALE ORANGE : 10YR 8/2		
POF-31	1,290.0	1,291.0	1.0		DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS, FRACTURED, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,291.0	1,292.2	1.2	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; POOR INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	POOR	LAMINATIONS, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,292.2	1,293.7	1.5	DOLOMITIC-LIMESTONE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	MODERATE		GRAYISH ORANGE : 10YR 7/4		
POF-31	1,293.7	1,294.4	0.7	DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR INDURATION; SOME FRACTURES	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	POOR	SOME FRACTURES	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,294.4	1,295.6	1.2	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY: POOR INDURATION: FRACTURED	DOLOMITE	20	PIN POINT - VUGS	POOR	FRACTURED	VERY PALE ORANGE : 10YR 8/2		
	·			DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY: POOR INDURATION: LAMINATIONS. ORGANICS					LAMINATIONS, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,295.6	1,296.8	1.2	DOLOMITIC-LIMESTONE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE	DOLOMITIC-LIMESTONE		PIN POINT - VUGS	POOR	LAMINATIONS,			
POF-31	1,296.8	1,298.2	1.4	PINPOINT AND VUGGY POROSITY; POOR INDURATION; LAMINATIONS, ORGANICS  DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT	DOLOMITIC-LIMESTONE	20	PIN POINT - VUGS	POOR	ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31 POF-31	1,298.2 1,299.2	1,299.2 1,300.0	1.0 0.8	POROSITY; MODERATE INDURATION; SOME FRACTURES  NO RECOVERY	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	SOME FRACTURES	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,300.0	1,300.5	0.5	DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; SOME FRACTURES	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	MODERATE	SOME FRACTURES	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,300.5	1,301.7	1.2	DOLOMITIC-LIMESTONE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	10	PIN POINT - VUGS	POOR	LAMINATIONS, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
	1,301.7	1,303.8	2.1	DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; POOR INDURATION; LAMINATIONS, FRACTURED, ORGANICS	DOLOMITE	0	NO OBSERVABLE	POOR	LAMINATIONS, FRACTURED, ORGANICS			
POF-31	1,301.7	1,303.6	2.1	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR	DOLOMITE	U	NO OBSERVABLE	POOR	LAMINATIONS, SOME	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,303.8	1,307.4	3.6	INDURATION; LAMINATIONS, SOME FRACTURES, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	POOR	FRACTURES, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,307.4	1,307.8	0.4	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; GOOD INDURATION	DOLOMITE	0	NO OBSERVABLE	GOOD		VERY PALE ORANGE : 10YR 8/2		
POF-31	1,307.8	1,308.3	0.5	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; LAMINATION, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATION, ORGANICS	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,308.3	1,309.2	0.9	DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; GOOD INDURATION	DOLOMITE	0	NO OBSERVABLE	GOOD		VERY PALE ORANGE : 10YR 8/2		
POF-31	1,309.2	1,310.0	0.8	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE	FRACTURED	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,310.0	1,311.8	1.8	DOLOMITE; YELLOWISH GRAY: 5Y 7/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	MODERATE		YELLOWISH GRAY : 5Y 7/2		
POF-31	1,311.8	1,313.4	1.6	DOLOMITIC-LIMESTONE; YELLOWISH GRAY: 5Y 7/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; POOR INDURATION; LAMINATIONS, ORGANICS	DOLOMITIC-LIMESTONE	0	NO OBSERVABLE	POOR	FRACTURED	YELLOWISH GRAY: 5Y 7/2		
				DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION: LAMINATIONS. ORGANICS					LAMINATIONS,			
POF-31	1,313.4	1,314.9	1.5	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;	DOLOMITE	10		MODERATE	ORGANICS LAMINATIONS,	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,314.9	1,316.6	1.7	DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; LOW PINPOINT AND	DOLOMITE		PIN POINT - VUGS		LAMINATIONS,	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,316.6	1,317.6	1.0	VUGGY POROSITY; MODERATE INDURATION DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;	DOLOMITE	10	PIN POINT - VUGS	MODERATE	ORGANICS	DARK YELLOWISH ORANGE : 10YR 6/6		
POF-31	1,317.6	1,318.3	0.7	MODERATE INDURATION; BRECCIATED DOLOSTONE INTRACLASTS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	BRECCIATED	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,318.3	1,319.2	0.9	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY: MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE	DOLOSTONE	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,319.2	1,320.0	0.8	DOLOMITE; YELLOWISH GRAY: 5Y 7/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	0	NO OBSERVABLE	MODERATE	LAMINATIONS, ORGANICS	YELLOWISH GRAY: 5Y 7/2		
				DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND								
POF-31	1,320.0	1,321.4	1.4	VUGGY POROSITY; MODERATE INDURATION; ORGANICS DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY	DOLOMITE		PIN POINT - VUGS	MODERATE	SOME FRACTURES,	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,321.4	1,324.0	2.6	POROSITY; MODERATE INDURATION; SOME FRACTURES, ORGANICS DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;	DOLOMITE	10	PIN POINT - VUGS	MODERATE	ORGANICS LAMINATIONS,	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,324.0	1,325.3	1.3	MODERATE INDURATION; LAMINATIONS, ORGANICS DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR	DOLOMITE	20	PIN POINT - VUGS	MODERATE	ORGANICS LAMINATIONS,	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,325.3	1,330.0	4.7	INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	POOR	ORGANICS FRACTURED, CELESTITE	GRAYISH ORANGE : 10YR 7/4		
POF-31	1,330.0	1,332.7	2.7	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, CELESTITE CRYSTALS IN VUGS	DOLOMITE	20	PIN POINT - VUGS	MODERATE	CRYSTALS IN VUGS	GRAYISH ORANGE : 10YR 7/4	CELESTITE	5
				DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR					LAMINATIONS, SOME FRACTURES, CELESTITE			
POF-31	1,332.7	1,333.5	0.8	INDURATION; LAMINATIONS, SOME FRACTURES, CELESTITE CRYSTALS IN VUGS DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY,	DOLOMITE	10	PIN POINT - VUGS	POOR	CRYSTALS IN VUGS CELESTITE CRYSTALS IN	GRAYISH ORANGE : 10YR 7/4	CELESTITE	5
POF-31	1,333.5	1,335.6	2.1	AND MOLDIC POROSITY; MODERATE INDURATION; CELESTITE CRYSTALS IN VUGS  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR	DOLOMITE	20	PIN POINT - VUGS	MODERATE	VUGS	GRAYISH ORANGE : 10YR 7/4	CELESTITE	5
POF-31	1,335.6	1,338.0	2.4	INDURATION; FRACTURED	DOLOMITE		PIN POINT - VUGS	POOR	FRACTURED	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,338.0	1,340.0	2.0	NO RECOVERY  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;			NO OBSERVABLE	_	LAMINATIONS,	VERY PALE ORANGE : 10YR 8/2		
POF-31	1,340.0	1,341.2	1.2	POOR INDURATION; LAMINATIONS, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	POOR	ORGANICS	VERY PALE ORANGE : 10YR 8/2		

	Depth Min, ft	Depth Max. ft												$\overline{}$	
Well	bls	bls	Thickness,	·	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature For	ossil type	Color1	Access Min Type1	Access Min Pct	1 Porosity Perc	ent Modifier
POF-31	1,341.2	1,342.0	0.8	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION; LAMINATION, ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATION, ORGANICS	VE	ERY PALE ORANGE : 10YR 8/2				
POF-31	1,342.0	1,344.0	2.0	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; POOR INDURATION; SOME FRACTURES	DOLOMITE	20	PIN POINT - VUGS	POOR	SOME FRACTURES	VE	RY PALE ORANGE : 10YR 8/2				
POF-31	1.344.0	1.346.0	2.0	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; POOR INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	POOR	FRACTURED	VE	ERY PALE ORANGE : 10YR 8/2				
POF-31	1,346.0	1.346.5	0.5	DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY; POOR INDURATION: FRACTURED	DOLOMITE	0	NO OBSERVABLE	POOR	FRACTURED		ERY PALE ORANGE : 10YR 8/2				
	·	,		DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT AND MOLDIC		,			FRACTORED						
POF-31	1,346.5	1,347.9	1.4	POROSITY; MODERATE INDURATION DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY;	DOLOMITE	10	PIN POINT - VUGS	MODERATE			RAYISH ORANGE : 10YR 7/4				
POF-31	1,347.9	1,348.3	0.4	MODERATE INDURATION DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT, VUGGY, AND	DOLOMITE	0	NO OBSERVABLE	MODERATE		GF	RAYISH ORANGE : 10YR 7/4				
POF-31	1,348.3	1,350.0	1.7	MOLDIC POROSITY; MODERATE INDURATION  DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD	DOLOMITE	10	PIN POINT - VUGS	MODERATE		GF	RAYISH ORANGE : 10YR 7/4				
POF-31	1,350.0	1,353.9	3.9	INDURATION; LAMINATIONS	DOLOMITE	10	PIN POINT - VUGS	GOOD	CALCAREOUS, SOME	GF	RAYISH ORANGE : 10YR 7/4				
DOE 24	4.050.0	4.055.4	4.5	CALCAREOUS DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; MODERATE	DOLOMITE	20	DIN DOINT VILOS	MODERATE	FRACTURES, CLAY		TRY DALE ORANGE : 40VP 0/0	CLAY			
POF-31	1,353.9	1,355.4	1.5	PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; SOME FRACTURES, CLAY STRINGERS DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY;			PIN POINT - VUGS		LAMINATIONS, SOME		ERY PALE ORANGE : 10YR 8/2	CLAY			
POF-31	1,355.4	1,360.0	4.6	MODERATE INDURATION; LAMINATIONS, SOME FRACTURES CALCAREOUS DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; HIGH PINPOINT	DOLOMITE		PIN POINT - VUGS	MODERATE		GF	RAYISH ORANGE : 10YR 7/4				
POF-31	1,360.0	1,362.5	2.5	AND MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, CELESTITE  DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD	DOLOMITE	30	PIN POINT - VUGS	MODERATE	FRACTURED	VE	ERY PALE ORANGE : 10YR 8/2	CELESTITE			
POF-31	1,362.5	1,364.9	2.4	INDURATION; LAMINATIONS  CALCAREOUS DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; LOW PINPOINT,	DOLOMITE	10	PIN POINT - VUGS	GOOD	LAMINATIONS FRACTURED.	GF	RAYISH ORANGE : 10YR 7/4				
POF-31	1,364.9	1,368.3	3.4	VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; FRACTURED, LAMINATIONS	DOLOMITE	30	PIN POINT - VUGS	MODERATE	LAMINATIONS	GF	RAYISH ORANGE : 10YR 7/4				
				DOLOMITE, CRAVICU ADANCE (ADVD 7/A), MICROCRVCTALLINE, MODERATE DINDOINT POROCITY.					FRACTURED, CLAY STRINGERS, CALCITE						
				DOLOMITE; GRAYISH ORANGE (10YR 7/4); MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; GOOD INDURATION; FRACTURED, GLAY STRINGERS, CALCITE CRYSTALS ON DISSOLUTION					CRYSTALS ON						
POF-31 POF-31	1,368.3 1,370.0	1,370.0 1,371.7	1.7 1.7	SURFACE DOLOMITE; WHITE: N9; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION	DOLOMITE DOLOMITE	20 10	PIN POINT - VUGS PIN POINT - VUGS	GOOD GOOD	DISSOLUTION SURFACE		RAYISH ORANGE : 10YR 7/4 HITE : N9	CLAY			
POF-31	1,371.7	1,372.0	0.3	DOLOMITE; WHITE: N10; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; BIVALVES	DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES	WI	HITE : N10				
POF-31	1,372.0	1,374.4	2.4	DOLOMITE; WHITE: N11; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD		W	HITE : N11				
POF-31	1,374.4	1,375.8	1.4	DOLOMITE; WHITE: N12; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION: LAMINATIONS	DOLOMITE		PIN POINT - VUGS	MODERATE	LAMINATIONS		HITE : N12				
	·			DOLOMITE; WHITE: N13; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY;											
POF-31	1,375.8	1,377.4	1.6	GOOD INDURATION; FRACTURED DOLOMITE; WHITE: N14; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		HITE : N13				
POF-31	1,377.4	1,378.3	0.9	INDURATION  DOLOMITE; WHITE: N15; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED,	WI	HITE : N14				
POF-31 POF-31	1,378.3 1,379.0	1,379.0 1,380.0	0.7 1.0	INDURATION; FRACTURED, LAMINATIONS NO RECOVERY	DOLOMITE	10	PIN POINT - VUGS	GOOD	LAMINATIONS	WI	HITE: N15				
POF-31	1,380.0	1,380.5	0.5	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY: GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD		DA	ALE YELLOWISH BROWN : 10YR 6/2				
	·	1,382.0		DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;			PIN POINT - VUGS		LANGRATIONIC						
POF-31	1,380.5	,	1.5	GOOD INDURATION; LAMINATIONS DOLOMITE; WHITE: N15; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION;	DOLOMITE	20		GOOD	LAMINATIONS		ERY PALE ORANGE : 10YR 8/2				
POF-31	1,382.0	1,384.0	2.0	BIVALVES, GASTROPODS  DOLOMITE; YELLOWISH GRAY: 5Y 7/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD	DOLOMITE	10	PIN POINT - VUGS	GOOD	BIVALVES, GASTROPODS		HITE : N15				
POF-31	1,384.0	1,385.3	1.3	INDURATION  DOLOMITE; VERY PALE ORANGE: 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD	DOLOMITE	10	PIN POINT - VUGS	GOOD		YE	ELLOWISH GRAY : 5Y 7/2				
POF-31	1,385.3	1,386.0	0.7	INDURATION; CELESTITE  DOLOMITE: VERY PALE ORANGE: 10YR 8/2: MICROCRYSTALLINE: LOW PINPOINT POROSITY: GOOD	DOLOMITE	10	PIN POINT - VUGS	GOOD	CELESTITE	VE	ERY PALE ORANGE : 10YR 8/2	CELESTITE	5		
POF-31 POF-31	1,386.0 1,388.5	1,388.5 1,390.0	2.5 1.5	INDURATION; ORGANICS, BIVALVES NO RECOVERY	DOLOMITE	10	PIN POINT - VUGS	GOOD	ORGANICS, BIVALVES	VE	ERY PALE ORANGE : 10YR 8/2				
				DOLOMITE; DARK YELLOWISH BROWN (10YR 4/22); MICROCRYSTALLINE; LOW PINPOINT POROSITY: GOOD INDURATION: LAMINATIONS	DOLOMITE	10	PIN POINT - VUGS	0000	LAMINATIONS	Ε.	ARK YELLOWISH BROWN : 10YR 4/2				
POF-31	1,390.0	1,392.2	2.2	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE	DOLOMITE			GOOD			<del></del>				
POF-31	1,392.2	1,392.6	0.4	PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURED DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT,	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		ALE YELLOWISH BROWN : 10YR 6/2				
POF-31	1,392.6	1,395.7	3.1	MOLDIC, AND VUGGY POROSITY; GOOD INDURATION; FRACTURED CALCAREOUS DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; LOW PINPOINT	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	PA	ALE YELLOWISH BROWN : 10YR 6/2				
POF-31	1,395.7	1,396.2	0.5	AND VUGGY POROSITY; MODERATE INDURATION; LAMINATIONS  DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; LOW PINPOINT AND VUGGY	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS	VE	ERY PALE ORANGE : 10YR 8/2				
POF-31	1,396.2	1,400.8	4.6	POROSITY; GOOD INDURATION; SOME FRACTURES CALCAREOUS DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; LOW PINPOINT	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES	VE	ERY PALE ORANGE : 10YR 8/2				
POF-31	1,400.8	1,401.5	0.7	AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	MODERATE	FRACTURED	VE	ERY PALE ORANGE : 10YR 8/2				
POF-31	1,401.5	1,403.6	2.1	DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; LAMINATIONS	DOLOMITE	20	PIN POINT - VUGS	GOOD	LAMINATIONS	VE	ERY PALE ORANGE : 10YR 8/2				
POF-31	1,403.6	1,404.5	0.9	CALCAREOUS DOLOMITE; VERY PALE ORANGE (10YR 8/2); MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION	DOLOMITE	20	PIN POINT - VUGS	MODERATE		VE	RY PALE ORANGE : 10YR 8/2				
				DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; MODERATE PINPOINT, MOLDIC, AND VUGGY POROSITY; GOOD INDURATION; FRACTURED, ANHYDRITE CRYSTALS ON											
POF-31 POF-31	1,404.5 1,409.5	1,409.5 1,410.0	5.0 0.5	DISSOLUTION SURFACES NO RECOVERY	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	PA	LE YELLOWISH BROWN : 10YR 6/2	CELESTITE			
POF-31	1,410.0	1,411.8	1.8	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT, VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; BIVALVES, ORGANICS	DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES, ORGANICS	05	RAYISH ORANGE : 10YR 7/4				
	·	, -		DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;					DIVALVES, ORGANICS						
POF-31	1,411.8	1,414.1	2.3	GOOD INDURATION  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY		10	PIN POINT - VUGS				LE YELLOWISH BROWN : 10YR 6/2				
POF-31	1,414.1	1,415.3	1.2	POROSITY; MODERATE INDURATION; ORGANICS	DOLOMITE	30	PIN POINT - VUGS	MODERATE	ORGANICS	PA	ALE YELLOWISH BROWN : 10YR 6/2				

P0F-31	E: 10YR 8/2  E: 10YR 8/2  ROWN: 10YR 6/2  10YR 7/4  ROWN: 10YR 6/2  ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE	5
POF-11	E: 10YR 8/2  ROWN: 10YR 6/2  10YR 7/4  ROWN: 10YR 6/2  ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-51   1,487	ROWN: 10YR 6/2  10YR 7/4  ROWN: 10YR 6/2  ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-51	ROWN: 10YR 6/2  10YR 7/4  ROWN: 10YR 6/2  ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-31	10YR 7/4  ROWN: 10YR 6/2  ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
DOI-31	ROWN: 10YR 6/2  ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-31	ROWN: 10YR 6/2  10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-31	10YR 7/4  E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-31	E: 10YR 8/2  VISH BROWN: 10YR 5/4  BROWN: 10YR 4/2  CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
P0F-31	VISH BROWN : 10YR 5/4  BROWN : 10YR 4/2 CELESTITE  E : 10YR 8/2  VISH BROWN : 10YR 5/4	5
PGF-31	BROWN: 10YR 4/2 CELESTITE  E: 10YR 8/2  VISH BROWN: 10YR 5/4	5
POF-31	E : 10YR 8/2 VISH BROWN : 10YR 5/4	
POF-31	VISH BROWN : 10YR 5/4	
POF-31		
POF-31		
DOLOMITE   PALE YELLOWISH BROWN (1078 62); MICROCRYSTALLINE; LOW PINPOINT POROSITY;	BROWN : 10YR 4/2	
CALCEREOUS DOLOMITE: MODERATE YELLOWISH BROWN (10YR 54): MICROCRYSTALLINE; LOW PIPPOINT AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, DOLOMITE		
DOLOMITE: DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE: MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, LAMINATIONS, SOME POF-31 1,441.0 1,444.5 3.5 AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 30 PIN POINT - VUGS GOOD CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 30 PIN POINT - VUGS GOOD CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 30 PIN POINT - VUGS GOOD CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED MODERATE PINPOINT AND WOLD POF-31 1,444.5 1,449.0 1,450.0 1.0 NOT RECOVERED DOLOMITE; GOOD INDURATION; ANHYDITE CRYSTALS IN VUGS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGS; DOLOMITE 20 PIN POINT - VUGS GOOD CELESTITE CRYSTALS IN VUGS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DROSSITY; DOLOMITE 20 PIN POINT - VUGS MODERATE GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HOP PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HOP PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY		
POF-31 1,435.5 1,441.0 5.5 FRACTURES  POF-31 1,441.0 1,444.5 3.5 MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, LAMINATIONS, SOME DOLOMITE DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT, VUGGY.  AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 30 PIN POINT - VUGS GOOD VUGS, FRACTURED DARK YELLOWISH BROWN (10YR 5/4); MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, PRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED MODERATE VUGS, LAMINATIONS, VUGS, ILAMINATIONS, SH BROWN : 10YR 5/4 CELESTITE		
POF-31		
POF-31 1,441.0 1,444.5 3.5 AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, FRACTURED DOLOMITE 30 PIN POINT - VUGS GOOD VUGS, FRACTURED DOLOMITE CELESTITE CRYSTALS IN VUGS, IMICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; CELESTITE CRYSTALS IN VUGS, LAMINATIONS, PELLETS, FRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED MODERATE YELLOW POF-31 1,450.0 1,450.0 1.0 NOT RECOVERED  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  POF-31 1,450.0 1,451.7 1,7 POROSITY; GOOD INDURATION DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; DOLOMITE 20 PIN POINT - VUGS GOOD VUGS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; DOLOMITE 20 PIN POINT - VUGS MODERATE GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE 20 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY CELESTITE CRYSTALS IN VUGS CELESTITE CRYSTALS IN VUGS CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELESTITE CRYSTALS IN VUGS CODE CELE	BROWN: 10YR 4/2 CELESTITE	
POF-31 1,444.5 1,449.0 4.5 LAMINATIONS, PELLETS, FRACTURED DOLOMITE 20 PIN POINT - VUGS GOOD FRACTURED MODERATE YELLOW POF-31 1,449.0 1,450.0 1.0 NOT RECOVERED DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POF-31 1,450.0 1,451.7 1.7 POROSITY; GOOD INDURATION; ANHYDRITE CRYSTALS IN VUGS DOLOMITE BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE DOLOMITE DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY CELESTITE CRYSTALS IN DOLOMITE; CRESTITE CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMITE; CRYSTALS IN DOLOMI	BROWN: 10YR 4/2 CELESTITE	
POF-31 1,450.0 1.0 NOT RECOVERED  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  POF-31 1,450.0 1,451.7 1,7 POROSITY; GOOD INDURATION; ANHYDRITE CRYSTALS IN VUGS  DOLOMITE GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY;  POF-31 1,451.7 1,453.0 1.3 MODERATE INDURATION  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT DOLOMITE  DOLOMIT		
POF-31	VISH BROWN : 10YR 5/4 CELESTITE	
POF-31 1,451.7 1,453.0 1.3 MODERATE INDURATION DOLOMITE 20 PIN POINT - VUGS MODERATE	ROWN : 10YR 6/2 CELESTITE	5
POF-31 1,453.0 1,454.5 1.5 POROSITY; GOOD INDURATION DOLOMITE 20 PIN POINT - VUGS GOOD PALE YELLOWISH B PALE YELLOWISH B POF-31 1,454.5 1,455.8 1.3 POROSITY; GOOD INDURATION; ORGANICS DOLOMITIC-LIMESTONE 10 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH B POROSITY; GOOD INDURATION; ORGANICS DOLOMITIC-LIMESTONE 10 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH B POROSITY; GOOD INDURATION; ORGANICS PALE	10YR 7/4	
POF-31 1,454.5 1,455.8 1.3 POROSITY; GOOD INDURATION; ORGANICS DOLOMITIC-LIMESTONE 10 PIN POINT - VUGS GOOD ORGANICS PALE YELLOWISH B DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY CELESTITE CRYSTALS IN	ROWN : 10YR 6/2	
DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY  DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MICROCRYSTALLINE; MICROCRYSTALLINE; MICROCRYSTALLINE; MICROCRYSTALLINE; MICROCRYSTALLINE; MICROC	ROWN : 10YR 6/2	
	BROWN: 10YR 4/2 CELESTITE	5
POF-31 1,458.0 1,459.0 1.0 MOLDIC POROSITY; GOOD INDURATION DOLOMITE 30 PIN POINT - VUGS GOOD PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD PALE YELLOWISH B	ROWN : 10YR 6/2	
POF-31 1,459.0 1,460.0 1.0 DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; DOLOMITE 10 PIN POINT - VUGS MODERATE ORGANICS DARK YELLOWISH E	BROWN : 10YR 4/2	
POF-31 1,460.0 1,461.1 1.1 MODERATE INDURATION; ORGANICS DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; DOLOMITE 10 PIN POINT - VUGS MODERATE ORGANICS VERY PALE ORANGE	E : 10YR 8/2	
POF-31 1,461.1 1,462.0 0.9 INDURATION; LIGNITE DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; POOR DOLOMITE 10 PIN POINT - VUGS POOR LIGNITE VERY PALE ORANGE	E : 10YR 8/2	
POF-31 1,462.0 1,462.5 0.5 INDURATION DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD DOLOMITE 10 PIN POINT - VUGS GOOD VERY PALE ORANGE VERY PALE ORANGE	E : 10YR 8/2	
POF-31 1,462.5 1,463.0 0.5 INDURATION; LIGHTE DOLOME (AVE) AN ADDRESS OF A DESCRIPTION OF A	E : 10YR 8/2	
POF-31 1,463.0 1,464.0 1.0 INDURATION; ORGANICS DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD DOLOMITE 10 PIN POINT - VUGS GOOD ORGANICS VERY PALE ORANGE	E : 10YR 8/2	
POF-31 1,464.0 1,466.0 2.0 GOOD INDURATION; ORGANICS  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; DOLOMITE  10 PIN POINT - VUGS GOOD ORGANICS  PALE YELLOWISH B		
POF-31 1,466.0 1,467.8 1.8 INDURATION DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD DOLOMITE 10 PIN POINT - VUGS GOOD VERY PALE ORANGE VERY PALE ORANGE	ROWN : 10YR 6/2	
DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND POF-31 1,468.5 1,470.0 1.5 MOLDIC POROSITY; GOOD INDURATION; BIVALVE DOLOMITE 20 PIN POINT - VUGS GOOD BIVALVE PALE YELLOWISH B		
POF-31 1,470.0 1,471.7 1.7 PINPOINT AND MOLDIC POROSITY; MODERATE INDURATION; LAMINATIONS DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH DOLOMITE 30 PIN POINT - VUGS MODERATE PIN POINT - VUGS MODERATE PIN POINT - VUGS MODERATE PIN POINT - VUGS MODERATE PIN POINT - VUGS MODERATE PIN POINT -	E : 10YR 8/2 VISH BROWN : 10YR 5/4	
CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW POF-31 1,471.7 1,475.8 4.1 PINPOINT POROSITY; MODERATE INDURATION; CELESTITE CRYSTALS IN VUGS, LAMINATIONS DOLOMITE 10 PIN POINT - VUGS MODERATE VUGS, LAMINATIONS PALE YELLOWISH B	E : 10YR 8/2 VISH BROWN : 10YR 5/4 ROWN : 10YR 6/2	
POF-31 1,475.8 1,478.0 2.2 MOLDIC POROSITY; GOOD INDURATION; LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; HIGH PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD LAMINATIONS DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; PINPOINT AND DOLOMITE 30 PIN POINT - VUGS GOOD DARK YELLOWISH PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30 PINPOINT AND DOLOMITE 30	E : 10YR 8/2  VISH BROWN : 10YR 5/4  ROWN : 10YR 6/2  BROWN : 10YR 4/2	

	Depth Min, ft	Depth Max, f	t											
Well	bls	bls	Thickness, f	t Description	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
				CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; LOW										
POF-31	1,478.0	1,480.0	2.0	PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2			
				CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO										
POF-31	1,480.0	1,485.2	5.2		DOLOMITE	0	NO OBSERVABLE	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2			
				DOLOMITE; DARK YELLOWISH BROWN (10YR 4/2); MICROCRYSTALLINE; MODERATE PINPOINT AND										
POF-31	1,485.2	1,486.5	1.3		DOLOMITE	20	PIN POINT - VUGS	GOOD			DARK YELLOWISH BROWN: 10YR 4/2			
				CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN (10YR 6/2); MICROCRYSTALLINE; NO										
POF-31	1,486.5	1,490.0	3.5		DOLOMITE	0	NO OBSERVABLE	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2			
				DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; SUCROSIC; MODERATE PINPOINT POROSITY;										
POF-31	1,490.0	1,491.0	1.0		DOLOMITE	20	PIN POINT - VUGS	GOOD			DARK YELLOWISH BROWN: 10YR 4/2			
				DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; SUCROSIC; MODERATE PINPOINT, VUGGY,										
POF-31	1,491.0	1,492.2	1.2		DOLOMITE	20	PIN POINT - VUGS	POOR	BIVALVES		DARK YELLOWISH BROWN : 10YR 4/2			
				DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; SUCROSIC; MODERATE PINPOINT POROSITY;										
POF-31	1,492.2	1,493.0	0.8		DOLOMITE	20	PIN POINT - VUGS	GOOD			DARK YELLOWISH BROWN : 10YR 4/2			
				LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR										
POF-31	1,493.0	1,493.8	0.8		LIMESTONE-WACKESTONE	10	INTERGRANULAR	GOOD			PALE YELLOWISH BROWN: 10YR 6/2			
				LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;							(			
POF-31	1,493.8	1,500.0	6.2	GOOD INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	GOOD			VERY PALE ORANGE : 10YR 8/2			

	Depth Min,	, Depth			Porosity,						Access Min		Porosity Percent
Well	ft bls	Max, ft bis	Description/Comments	Rock Type	percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Type1	Access Min Pct1	Modifier
POF-32	1,500.0	1,500.5	NO RECOVERY										
DOE 22	1 E00 E	1 502 0	LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; LOW INTERGRANULAR; MODERATE	LIMESTONE DACKSTONE	10		MODERATE	DIVALVES		GRAYISH ORANGE :			
POF-32	1,500.5	1,503.0	INDURATION; BIVALVES  LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; MODERATE INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE	BIVALVES, SOME		10YR 7/4 VERY PALE ORANGE			
POF-32	1,503.0	1,504.0	MODERATE INDURATION; BIVALVES, SOME FRACTURES	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE	•		: 10YR 8/2			
								BIVALVES, SOME					
			LIMESTONE-PACKSTONE; MODERATE YELLOWISH BROWN: 10YR 5/4; MODERATE INTERGRANULAR AND PINPOINT POROSITY; GOOD INDURATION; BIVALVES, SOME FRACTURES, CALCITE GROWING ON	1				FRACTURES, CALCITE GROWING ON FRACTURE		MODERATE YELLOWISH BROWN			
POF-32	1,504.0	1,504.6	FRACTURE SURFACE	LIMESTONE-PACKSTONE	20	INTERGRANULAR	GOOD	SURFACE		: 10YR 5/4	CALCITE		
	,	,	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;							VERY PALE ORANGE			
POF-32	1,504.6	1,506.1	MODERATE INDURATION; BIVALVES	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE	-		: 10YR 8/2			
			LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR AND VUGGY					CALCITE GROWING ON FRACTURE SURFACE AND		GRAYISH ORANGE :			
POF-32	1,506.1	1,507.5	POROSITY; MODERATE INDURATION; CALCITE GROWING ON FRACTURE SURFACE AND IN VUGS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			10YR 7/4	CALCITE		
			LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; MODERATE INTERGRANULAR, MOLDIC, AND					BIVALVES, CALCITE		000000000000000000000000000000000000000			
POF-32	1,507.5	1,508.1	VUGGY POROSITY; MODERATE INDURATION; BIVALVES, CALCITE GROWING ON FRACTURE SURFACE AND IN VUGS	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE	GROWING ON FRACTURE SURFACE AND IN VUGS		GRAYISH ORANGE : 10YR 7/4	CALCITE		
1 01 -02	1,007.0	1,000.1	CALCAREOUS DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT AND	EINEOTONE TANKSTONE	20	IIVI EIVOIV IIVOEJ IIV	WODEIVITE	CONTROL FIND IN VOCO		GRAYISH ORANGE :	OALOTTE		
POF-32	1,508.1	1,510.0	MOLDIC POROSITY; MODERATE INDURATION; BIVALVES; ECHINOIDS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	BIVALVES	ECHINOIDS	10YR 7/4			
POF-32	1,510.0	1 512 7	LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE		ECHINOIDS	VERY PALE ORANGE : 10YR 8/2			
FUF-32	1,510.0	1,513.7	MODERATE INDURATION; ECHINOIDS  CALCAREOUS DOLOMITE: MODERATE YELLOWISH BROWN : 10YR 5/4: MICROCRYSTALLINE:	LIMESTONE-PACKSTONE	10	INTERGRANULAR	WODERATE		ECHINOID3	MODERATE			
			MODERATE PINPOINT, MOLDIC, AND VUGGY POROSITY; GOOD INDURATION; BIVALVES, CALICTE IN							YELLOWISH BROWN			
POF-32	1,513.7	1,515.6		DOLOMITE	20	PIN POINT - VUGS	GOOD	BIVALVES, CALICTE IN VUGS		: 10YR 5/4	CALCITE		
POF-32	1,515.6	1 518 3	LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; MODERATE INDURATION; BIVALVES, SOME INTRACLASTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE	BIVALVES, SOME INTRACLASTS		GRAYISH ORANGE : 10YR 7/4			
POF-32	1,518.3		NO RECOVERY	EINEOTONE TANKSTONE	10	IIVI EIVOIV IIVOEJ IIV	WODEIVITE	INTIVIOLICIE		1011(1)4			
										MODERATE			
POF-32	1,520.0	1 501 5	CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		YELLOWISH BROWN : 10YR 5/4			
PUF-32	1,520.0	1,321.3	MODERATE PINPOINT AND MOLDIC POROSITY, GOOD INDURATION, FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTORED		MODERATE			
			DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT							YELLOWISH BROWN			
POF-32	1,521.5		AND MOLDIC POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		: 10YR 5/4			
POF-32	1,523.8	1,524.0	NO RECOVERY							MODERATE			
			CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE;							YELLOWISH BROWN			
POF-32	1,524.0		MODERATE PINPOINT POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		: 10YR 5/4			
POF-32	1,525.7	1,526.0	NO RECOVERY							MODERATE			
			CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE;							YELLOWISH BROWN			
POF-32	1,526.0	1,527.5	MODERATE PINPOINT POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED		: 10YR 5/4			
			CALCADEOLIC DOLOMITE, MODERATE VELLOWICH DROWN, 40VP 5/4, MICROCRYCTALLINE, HIGH							MODERATE			
POF-32	1,527.5	1 528 6	CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	30	PIN POINT - VUGS	MODERATE			YELLOWISH BROWN : 10YR 5/4			
. 0. 02	1,021.0	1,020.0		5 0 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						MODERATE			
			DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT							YELLOWISH BROWN			
POF-32	1,528.6	1,530.0	POROSITY; POOR INDURATION; FRACTURED, BIVALVES DOLOMITE; DARK YELLOWISH BROWN: 10YR 4/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	30	PIN POINT - VUGS	POOR	FRACTURED, BIVALVES		: 10YR 5/4 DARK YELLOWISH			
POF-32	1,530.0	1,531.3	POROSITY; GOOD INDURATION; BIVALVES	DOLOMITE	30	PIN POINT - VUGS	GOOD	BIVALVES		BROWN: 10YR 4/2			
										MODERATE			
POF-32	1,531.3	1,532.2	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD INDURATION; BIVALVES	DOLOMITE	30	PIN POINT - VUGS	GOOD	BIVALVES		YELLOWISH BROWN : 10YR 5/4			
FUF-32	1,001.0	1,002.2	VOGGT FOROSITT, GOOD INDURATION, BIVALVES	DOLOWITE	30	FIN FOINT - VOGS	GOOD	BIVALVES		MODERATE			
			CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH							YELLOWISH BROWN			
POF-32	1,532.2	1,532.6	PINPOINT AND VUGGY POROSITY; GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD			: 10YR 5/4			
			CALCAREOUS DOLOMITE: MODERATE YELLOWISH BROWN: 10YR 5/4: MICROCRYSTALLINE: LOW							MODERATE YELLOWISH BROWN			
POF-32	1,532.6	1,533.0	PINPOINT POROSITY; GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			: 10YR 5/4			
	,	,	·							MODERATE			
DOE 00	4 500 0	4.504.0	CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW	DOLONUTE	40	DIN DOINT MUCO	MODERATE			YELLOWISH BROWN			
POF-32	1,533.0	1,534.0	PINPOINT POROSITY; MODERATE INDURATION  CALCAREOUS DOLOMITE: PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE: LOW PINPOINT	DOLOMITE	10	PIN POINT - VUGS	MODERATE			: 10YR 5/4 PALE YELLOWISH			
POF-32	1,534.0	1,535.1	POROSITY; POOR INDURATION	DOLOMITE	10	PIN POINT - VUGS	POOR			BROWN : 10YR 6/2			
DO = 66	4 505 :	4.5.0.5	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR POROSITY;	LINESTONE	4.5		BC 27	OAL OUTE VEIN 17 1700 0	·	PALE YELLOWISH			·
POF-32	1,535.1	1,540.0	POOR INDURATION; CALCITE VEIN AT 1538.6  LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	CALCITE VEIN AT 1538.6		BROWN: 10YR 6/2 VERY PALE ORANGE			
POF-32	1,540.0	1,541.3	INDURATION   MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			: 10YR 8/2			
		,	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY		-					VERY PALE ORANGE			
POF-32	1,541.3	1,548.2	POOR INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	POOR			: 10YR 8/2	CLAY		
POF-32	1,548.2	1.550.0	CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4	CLAY		
. 01 -02	1,040.2	1,000.0	p	LOTOTAL TACKOTOTAL	10	IIII LITOIVIIIOLAIT	ODLIVATE	1		1.011177	00/11	1	

	Depth Min,	Depth			Porosity,					Access Min		Porosity Percent
Well	ft bls	Max, ft bls	Description/Comments	Rock Type	percent	Porosity Type1	Induration Other Feature	Fossil type	Color1	Type1	Access Min Pct1	Modifier
POF-32	1,550.0	1,554.0	CLAYEY LIMESTONE-PACKSTONE; DARK YELLOWISH ORANGE : 10YR 6/6; LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE		DARK YELLOWISH ORANGE : 10YR 6/6	CLAY		,
POF-32	1,554.0	1,556.4	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION; SMALL CALCITE CRYSTALS, BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	SMALL CALCITE CRYSTALS BIVALVE SHELL MODERATE FRAGMENTS		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,556.4	1,557.0	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR AND VUGGY POROSITY; MODERATE INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	20	INTERGRANULAR	BIVALVE SHELL MODERATE FRAGMENTS		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,557.0	1,558.2	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION; BIVALVE AND GASTROPOD SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE AND GASTROPOD MODERATE SHELL FRAGMENTS		VERY PALE ORANGE : 10YR 8/2	CLAY		,
POF-32	1,558.2	1,560.0	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR AND VUGGY POROSITY; MODERATE INDURATION; BIVALVE AND GASTROPOD SHELL FRAGMENTS	LIMESTONE-PACKSTONE	20	INTERGRANULAR	BIVALVE AND GASTROPOD MODERATE SHELL FRAGMENTS		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,560.0		CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR AND VUGGY POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-PACKSTONE	20	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,562.0	1,563.2	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,563.2	1,564.5	CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,564.5	1,566.4	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,566.4		CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; NO OBSERVABLE POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-PACKSTONE	0	NO OBSERVABLE	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,567.6	1,570.0	CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; NO OBSERVABLE POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,570.0	1,570.9	CLAYEY LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		GRAYISH ORANGE : 10YR 7/4	CLAY		
POF-32	1,570.9	1,575.3	CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		GRAYISH ORANGE : 10YR 7/4	CLAY		
POF-32	1,575.3	1,578.0	CLAYEY LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,578.0	1,580.0	CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS, LIMONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
POF-32	1,580.0	1,581.0	CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS, LIMONITE, PYRITE, QUARTZ SAND	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL FRAGMENTS, LIMONITE, POOR PYRITE, QUARTZ SAND		GRAYISH ORANGE : 10YR 7/4	CLAY		
POF-32	1,581.0	1,589.1	CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; NO OBSERVABLE POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	0	NO OBSERVABLE	BIVALVE SHELL POOR FRAGMENTS		GRAYISH ORANGE : 10YR 7/4	CLAY		
POF-32	1,589.1		CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; POOR INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL POOR FRAGMENTS		GRAYISH ORANGE : 10YR 7/4	CLAY		
			CLAYEY LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; BIVALVE AND GASTROPOD SHELL FRAGMENTS,				BIVALVE AND GASTROPOD SHELL FRAGMENTS,		GRAYISH ORANGE :			
POF-32	1,590.0	1,591.8	LIMONITE CLAYEY LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR AND	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE LIMONITE		10YR 7/4 GRAYISH ORANGE :	CLAY		
POF-32	1,591.8	1,595.7	MOLDIC POROSITY; POOR INDURATION; LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR LIMONITE SOME BIVALVE AND		10YR 7/4	CLAY		
POF-32	1,595.7	1,598.5	CLAYEY LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR AND MOLDIC POROSITY; MODERATE INDURATION; SOME BIVALVE AND GASTROPOD SHELL FRAGMENTS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	GASTROPOD SHELL MODERATE FRAGMENTS		GRAYISH ORANGE : 10YR 7/4	CLAY		
			CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW						MODERATE YELLOWISH BROWN			
POF-32 POF-32	1,598.5 1,598.9	,	PINPOINT POROSITY; GOOD INDURATION; FRACTURED NO RECOVERY	DOLOMITE	10	PIN POINT - VUGS	GOOD FRACTURED		: 10YR 5/4			
POF-32	1,600.0		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	GOOD FRACTURED		MODERATE YELLOWISH BROWN : 10YR 5/4			
POF-32	1,602.9		, ,	DOLOMITE	20	PIN POINT - VUGS	GOOD FRACTURED		MODERATE YELLOWISH BROWN : 10YR 5/4			
POF-32	1,605.3	1,606.0	CALCAREOUS DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE		GRAYISH ORANGE : 10YR 7/4			
POF-32	1,606.0		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE		MODERATE YELLOWISH BROWN : 10YR 5/4			
POF-32	1,607.2	1,608.5	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE		PALE YELLOWISH BROWN: 10YR 6/2			,
POF-32	1,608.5	,		DOLOMITE	10	PIN POINT - VUGS	MODERATE		DARK YELLOWISH ORANGE : 10YR 6/6	LIMONITE		
POF-32	1,612.0	1,612.4	CALCAREOUS DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; POOR INDURATION	DOLOMITE	20	PIN POINT - VUGS	POOR		DARK YELLOWISH ORANGE : 10YR 6/6			
POF-32	1,612.4		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	MODERATE FRACTURED		MODERATE YELLOWISH BROWN : 10YR 5/4			

Well	Depth Min, ft bls	n, Depth Max, ft bls Description/Comments	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT							MODERATE YELLOWISH BROWN			
POF-32	1,613.0		DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		: 10YR 5/4			
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT							MODERATE YELLOWISH BROWN			
POF-32	1,614.1	1,614.9 POROSITY; GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			: 10YR 5/4			
POF-32	1,614.9	DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;  1.616.0 GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			DARK YELLOWISH BROWN : 10YR 4/2			
1 01 02	1,011.0		BOLOMITE	10	1 1111 01111 1000	3002			MODERATE			
POF-32	1,616.0	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT 1,617.3 AND VUGGY POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			YELLOWISH BROWN : 10YR 5/4			
	.,								MODERATE			
POF-32	1,617.3	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT 1,619.6 AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED		YELLOWISH BROWN : 10YR 5/4			
POF-32		, ,										
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT							MODERATE YELLOWISH BROWN			
POF-32	1,620.0	1,622.2 AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED		: 10YR 5/4	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND							MODERATE YELLOWISH BROWN			
POF-32	1,622.2	1,624.0 VUGGY POROSITY; MODERATE INDURATION; FRACTURED; LIMONITE	DOLOMITE	30	PIN POINT - VUGS	MODERATE	FRACTURED		: 10YR 5/4 MODERATE	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT							YELLOWISH BROWN			
POF-32	1,624.0	1,625.8 AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	MODERATE	FRACTURED		: 10YR 5/4 MODERATE	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND							YELLOWISH BROWN			
POF-32	1,625.8	1,626.3 VUGGY POROSITY; MODERATE INDURATION; FRACTURED; LIMONITE	DOLOMITE	10	PIN POINT - VUGS	MODERATE	FRACTURED		: 10YR 5/4 MODERATE	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND							YELLOWISH BROWN			
POF-32	1,626.3	1,629.0 VUGGY POROSITY; MODERATE INDURATION; LIMONITE	DOLOMITE	30	PIN POINT - VUGS	MODERATE			: 10YR 5/4 MODERATE	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT							YELLOWISH BROWN			
POF-32	1,629.0	1,633.8 POROSITY; MODERATE INDURATION; SOME FRACTURES; LIMONITE	DOLOMITE	10	PIN POINT - VUGS	MODERATE	SOME FRACTURES		: 10YR 5/4 MODERATE	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND							YELLOWISH BROWN			
POF-32	1,633.8	1,635.4 VUGGY POROSITY; POOR INDURATION; FRACTURED; LIMONITE	DOLOMITE	10	PIN POINT - VUGS	POOR	FRACTURED		: 10YR 5/4 MODERATE	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT							YELLOWISH BROWN			
POF-32	1,635.4	1,637.6 POROSITY; GOOD INDURATION; LIMONITE DOLOMITE: DARK YELLOWISH BROWN: 10YR 4/2: MICROCRYSTALLINE: LOW PINPOINT POROSITY:	DOLOMITE	10	PIN POINT - VUGS	GOOD			: 10YR 5/4 DARK YELLOWISH	LIMONITE		
POF-32	1,637.6		DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES		BROWN: 10YR 4/2	LIMONITE		
POF-32	1,640.0	LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY;  1,643.8 MODERATE INDURATION; LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4	LIMONITE		
POF-32	1,643.8								ODAYIOH ODANOE			
POF-32	1,650.0	LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY;  1,651.1 MODERATE INDURATION; LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			GRAYISH ORANGE : 10YR 7/4	LIMONITE		
		LIMEGTONE DACKSTONE, MODERATE VELLOWIGH PROWN, 40VP 5/4, LOW INTERCRANIII AD							MODERATE			
POF-32	1,651.1	LIMESTONE-PACKSTONE; MODERATE YELLOWISH BROWN: 10YR 5/4; LOW INTERGRANULAR 1,651.8 POROSITY; MODERATE INDURATION; LIMONITE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			YELLOWISH BROWN : 10YR 5/4	LIMONITE		
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND							MODERATE YELLOWISH BROWN			
POF-32	1,651.8		DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED		: 10YR 5/4			
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT							MODERATE YELLOWISH BROWN			
POF-32	1,654.6		DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED		: 10YR 5/4			
		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND							MODERATE YELLOWISH BROWN			
POF-32	1,656.5	1,659.5 VUGGY POROSITY; GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			: 10YR 5/4			
POF-32	1,659.5	LIMESTONE-PACKSTONE; PALE YELLOWISH BROWN : 10YR 6/2; LOW INTERGRANULAR POROSITY; 1,660.0 MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2		<u> </u>	
		LIMESTONE-WACKESTONE; GRAYISH ORANGE: 10YR 7/4; LOW INTERGRANULAR POROSITY;							GRAYISH ORANGE :			
POF-32	1,660.0	1,661.3 MODERATE INDURATION; LIMONITE  LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE		+	10YR 7/4 GRAYISH ORANGE :	LIMONITE		
POF-32	1,661.3	1,664.7 MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			10YR 7/4			
POF-32	1,664.7	DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY 1,666.4 POROSITY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE			DARK YELLOWISH BROWN: 10YR 4/2			
	,	DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;							DARK YELLOWISH			
POF-32	1,666.4	1,667.0 GOOD INDURATION DOLOMITE; DARK YELLOWISH BROWN: 10YR 4/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	10	PIN POINT - VUGS	GOOD		+	BROWN: 10YR 4/2 DARK YELLOWISH		+	
POF-32	1,667.0		DOLOMITE	30	PIN POINT - VUGS	GOOD			BROWN : 10YR 4/2	LIMONITE		

												Porosity
Well	Depth Min, ft bls	Depth Max, ft bls	Description/Comments	Rock Type	Porosity, percent	Porosity Type1	Induration Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Percent Modifier
POF-32	1,668.0		DOLOMITE; DARK YELLOWISH BROWN : 10YR 4/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	20	PIN POINT - VUGS	GOOD		DARK YELLOWISH BROWN: 10YR 4/2	LIMONITE		
	,	,	LIMESTONE-WACKESTONE; GRAYISH ORANGE: 10YR 7/4; MODERATE INTERGRANULAR POROSITY;						GRAYISH ORANGE :			
POF-32	1,668.3 1,669.8		MODERATE INDURATION; ORGANICS, LAMINATIONS NO RECOVERY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE ORGANICS, LAMINATIONS		10YR 7/4	LIMONITE		
	,	,	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;				BIVALVE SHELL		VERY PALE ORANGE			
POF-32	1,670.0	1,671.3	MODERATE INDURATION; BIVALVE SHELL FRAGMENTS, PYRITE LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE FRAGMENTS, PYRITE BIVALVE SHELL		: 10YR 8/2 VERY PALE ORANGE	LIMONITE		
POF-32	1,671.3	1,672.0	MODERATE INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE FRAGMENTS		: 10YR 8/2			
POF-32	1,672.0	1,678.4	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION; BIVALVE AND ECHINOID SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE AND ECHINOID MODERATE SHELL FRAGMENTS		VERY PALE ORANGE : 10YR 8/2			
	,	,	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;						VERY PALE ORANGE			-
POF-32	1,678.4	1,680.0	MODERATE INDURATION; FRACTURED	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE FRACTURED		: 10YR 8/2			
			LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR POROSITY;				BIVALVE AND ECHINOID		VERY PALE ORANGE			
POF-32	1,680.0	1,681.1	MODERATE INDURATION; BIVALVE AND ECHINOID SHELL FRAGMENTS, PYRITE LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE SHELL FRAGMENTS, PYRITE BIVALVE AND ECHINOID		: 10YR 8/2 VERY PALE ORANGE	LIMONITE		
POF-32	1,681.1	1,684.5	MODERATE INDURATION; BIVALVE AND ECHINOID SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE SHELL FRAGMENTS		: 10YR 8/2	LIMONITE		
POF-32	1,684.5	1,688.0	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION: BIVALVE AND ECHINOID SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE AND ECHINOID   MODERATE   SHELL FRAGMENTS		VERY PALE ORANGE : 10YR 8/2			
	,	,	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;						VERY PALE ORANGE			
POF-32	1,688.0	1,690.0	MODERATE INDURATION LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE		: 10YR 8/2 VERY PALE ORANGE			
POF-32	1,690.0	1,690.6	MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE		: 10YR 8/2	LIMONITE		
POF-32	1,690.6	1 602 3	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE		VERY PALE ORANGE : 10YR 8/2			
1 01 -02	1,030.0	1,032.3	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;	EINIEGT GIVE-WACKEGT GIVE	10	INTERGRANDEAR	MODEIVATE		VERY PALE ORANGE			
POF-32	1,692.3	1,694.6	MODERATE INDURATION LIMESTONE-WACKESTONE: VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE		: 10YR 8/2 VERY PALE ORANGE			
POF-32	1,694.6	1,696.4	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR		: 10YR 8/2			
POF-32	1,696.4	1.700.0	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE		VERY PALE ORANGE : 10YR 8/2			
FUF-32	1,090.4	1,700.0	LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	BIVALVE SHELL		GRAYISH ORANGE :			
POF-32	1,700.0	1,702.9	MODERATE INDURATION; BIVALVE SHELL FRAGMENTS LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE FRAGMENTS BIVALVE SHELL		10YR 7/4	LIMONITE		
POF-32	1,702.9	1,704.3	MODERATE INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE FRAGMENTS		GRAYISH ORANGE : 10YR 7/4			
POF-32	1,704.3	1,706.0	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL MODERATE FRAGMENTS		VERY PALE ORANGE : 10YR 8/2			
FUF-32	1,704.3	1,700.0	LIMESTONE-PACKSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	BIVALVE SHELL		VERY PALE ORANGE			
POF-32	1,706.0	1,710.0	MODERATE INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE FRAGMENTS		: 10YR 8/2	LIMONITE		
POF-32	1,710.0	1,711.7	LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE		GRAYISH ORANGE : 10YR 7/4			
DOE 33	1 711 7	1 715 1	LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; LOW INTERGRANULAR POROSITY;	LIMESTONE DACKSTONE	10	INTERCRANIII AR	BIVALVE SHELL		GRAYISH ORANGE :			
POF-32	1,711.7	1,715.1	MODERATE INDURATION; BIVALVE SHELL FRAGMENTS LIMESTONE-PACKSTONE; DARK YELLOWISH ORANGE: 10YR 6/6; LOW INTERGRANULAR POROSITY;	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE FRAGMENTS BIVALVE SHELL		10YR 7/4 DARK YELLOWISH			
POF-32	1,715.1		MODERATE INDURATION; BIVALVE SHELL FRAGMENTS	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE FRAGMENTS		ORANGE : 10YR 6/6 DARK YELLOWISH			
POF-32	1,716.2		DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; POOR INDURATION	DOLOMITE	20	PIN POINT - VUGS	POOR		ORANGE : 10YR 6/6			
DOE 33	1 710 /		DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT	DOLOMITE	20	DINI DOINT VILICE	MODERATE FRACTURED		DARK YELLOWISH ORANGE : 10YR 6/6	LIMONITE		
POF-32	1,718.4	1,720.0	POROSITY; MODERATE INDURATION; FRACTURED; LIMONITE  DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	20	PIN POINT - VUGS	MODERATE FRACTURED		DARK YELLOWISH	LIMONITE		
POF-32	1,720.0	, -	· · · · · · · · · · · · · · · · · · ·	DOLOMITE	20	PIN POINT - VUGS	GOOD		ORANGE : 10YR 6/6			
POF-32	1,721.0		DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	30	PIN POINT - VUGS	MODERATE FRACTURED		DARK YELLOWISH ORANGE : 10YR 6/6			
DOE 33	1 700 0	1 700 0	DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY: GOOD INDURATION: FRACTURED	DOLOMITE	20	DINI DOINT MUCO	COOR FRACTURES		DARK YELLOWISH			
POF-32	1,722.0	, -	DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	30	PIN POINT - VUGS	GOOD FRACTURED		ORANGE : 10YR 6/6 DARK YELLOWISH			
POF-32	1,722.8	1,723.5	VUGGY POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD		ORANGE : 10YR 6/6			
			DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT						MODERATE YELLOWISH BROWN			
POF-32	1,723.5	1,726.0	AND VUGGY POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD FRACTURED		: 10YR 5/4			
POF-32	1,726.0		DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY POROSITY; GOOD INDURATION; ORGANICS	DOLOMITE	10	PIN POINT - VUGS	GOOD ORGANICS		PALE YELLOWISH BROWN: 10YR 6/2			
	,	,	DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY						PALE YELLOWISH			
POF-32	1,727.4		POROSITY; GOOD INDURATION; FRACTURED DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW VUGGY POROSITY;	DOLOMITE	30	PIN POINT - VUGS	GOOD FRACTURED		BROWN: 10YR 6/2 PALE YELLOWISH			
POF-32	1,728.5	1,730.3	GOOD INDURATION; FRACTURED	DOLOMITE	10	VUGULAR	GOOD FRACTURED		BROWN : 10YR 6/2			
POF-32	1,730.3		NO RECOVERY  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND						PALE YELLOWISH			
POF-32	1,734.5			DOLOMITE	20	PIN POINT - VUGS	POOR FRACTURED		BROWN : 10YR 6/2	LIMONITE		

Well	Depth Min, ft bls	Depth Max, ft bis	Description/Comments	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature Fo	ossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
POF-32	1,736.0	1,738.5	DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	D.	ARK YELLOWISH PRANGE : 10YR 6/6	Турст	Access min 1 cer	Modifier
POF-32	1,738.5	1,740.0	DOLOMITE; DARK YELLOWISH ORANGE : 10YR 6/6; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	MODERATE		0	ARK YELLOWISH RANGE : 10YR 6/6	LIMONITE		
POF-32	1,740.0	1,742.0	DOLOMITE; GRAYISH ORANGE : 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; MODERATE INDURATION; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	MODERATE		10	RAYISH ORANGE : 0YR 7/4	LIMONITE		
POF-32	1,742.0	1,743.2	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT AND MOLDIC POROSITY; GOOD INDURATION  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND MOLDIC	DOLOMITE	10	PIN POINT - VUGS	GOOD		10	RAYISH ORANGE : DYR 7/4 ALE YELLOWISH			
POF-32	1,743.2	1,744.5	POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED	ВІ	ROWN: 10YR 6/2 IODERATE			
POF-32	1,744.5	1,746.0	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	30	PIN POINT - VUGS	MODERATE	FRACTURED	YI : 1	ELLOWISH BROWN 10YR 5/4			
POF-32	1,746.0	1,746.9	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	30	PIN POINT - VUGS	MODERATE	FRACTURED	ВІ	ALE YELLOWISH ROWN : 10YR 6/2			
POF-32	1,746.9	1,748.3	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED	YI : 1	IODERATE ELLOWISH BROWN 10YR 5/4			
POF-32	1,748.3	1,750.0	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	YI : 1	IODERATE ELLOWISH BROWN 10YR 5/4			
POF-32	1,750.0	1,752.2	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; GOOD INDURATION; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	GOOD		YI	IODERATE ELLOWISH BROWN 10YR 5/4	LIMONITE		
POF-32	1,752.2	1,754.1	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; LIMONITE	DOLOMITE	30	PIN POINT - VUGS	MODERATE		YI	IODERATE ELLOWISH BROWN 10YR 5/4	LIMONITE		
POF-32	1,754.1	·	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD INDURATION; LIMONITE	DOLOMITE	30	PIN POINT - VUGS	GOOD		M YI	IODERATE ELLOWISH BROWN 10YR 5/4	LIMONITE		
	Í	·	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT,	DOLOMITE	20		GOOD		M YI	IODERATE ELLOWISH BROWN 10YR 5/4	LIMONITE		
POF-32	1,756.3 1,757.5	,	VUGGY, AND MOLDIC POROSITY; GOOD INDURATION; LIMONITE  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT, VUGGY, AND MOLDIC POROSITY; MODERATE INDURATION; LIMONITE		30	PIN POINT - VUGS PIN POINT - VUGS	MODERATE		P	ALE YELLOWISH ROWN : 10YR 6/2	LIMONITE		
POF-32	1,759.0	,	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; POOR INDURATION; LIMONITE	DOLOMITE	30	PIN POINT - VUGS	POOR		P	ALE YELLOWISH ROWN: 10YR 6/2	LIMONITE		
POF-32	1,760.0	1,762.1	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND MOLDIC POROSITY; GOOD INDURATION; FRACTURED; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	ВІ	ALE YELLOWISH ROWN: 10YR 6/2	LIMONITE		
POF-32	1,762.1	1,763.0	LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR AND VUGGY POROSITY; MODERATE INDURATION  LIMESTONE-PACKSTONE: VERY PALE ORANGE: 10YR 8/2: LOW INTERGRANULAR AND VUGGY	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE		: 1	ERY PALE ORANGE 10YR 8/2 ERY PALE ORANGE	LIMONITE		
POF-32	1,763.0	1,766.2	POROSITY; MODERATE INDURATION; SOME ORGANICS  LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR AND VUGGY	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE	SOME ORGANICS	: 1	10YR 8/2 ERY PALE ORANGE			
POF-32 POF-32	1,766.2 1,768.4	1,768.4 1,770.0	POROSITY; MODERATE INDURATION NO RECOVERY	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			10YR 8/2			
POF-32	1,770.0	1,772.1	DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURED, GLAUCONITE; LIMONITE	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED, GLAUCONITE	YI : 1	IODERATE ELLOWISH BROWN 10YR 5/4	LIMONITE		
POF-32	1,772.1		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	YI	IODERATE ELLOWISH BROWN 10YR 5/4			
POF-32	Í	,	NO RECOVERY  DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT						YI	ODERATE ELLOWISH BROWN			
POF-32	1,780.0	1,781.0	AND VUGGY POROSITY; GOOD INDURATION; FRACTURED, GLAUCONITE; LIMONITE  DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT AND	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED, GLAUCONITE	М	10YR 5/4 IODERATE ELLOWISH BROWN	LIMONITE		
POF-32	1,781.0	1,784.3	VUGGY POROSITY; GOOD INDURATION; FRACTURED; LIMONITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED	: 1	10YR 5/4 ALE YELLOWISH	LIMONITE		
POF-32	1,784.3	1,788.1	POROSITY; GOOD INDURATION; FRACTURED; LIMONITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED	BI Pa	ROWN : 10YR 6/2 ALE YELLOWISH	LIMONITE		
POF-32	1,788.1		DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT	DOLOMITE	20	PIN POINT - VUGS	GOOD		M YI	ROWN: 10YR 6/2 ODERATE ELLOWISH BROWN			
POF-32	1,789.5 1,790.0	,	POROSITY; GOOD INDURATION; FRACTURED  DOLOMITE; DARK YELLOWISH BROWN: 10YR 4/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURED; PYRITE	DOLOMITE DOLOMITE	20	PIN POINT - VUGS PIN POINT - VUGS	GOOD	FRACTURED FRACTURED	D.	10YR 5/4 ARK YELLOWISH ROWN : 10YR 4/2	PYRITE		
POF-32	Í	·	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; GOOD INDURATION; FRACTURED	DOLOMITE	20	PIN POINT - VUGS	GOOD	FRACTURED	M YI	ODERATE ELLOWISH BROWN 10YR 5/4	THATE		

Well	Depth Min, ft bls	Depth Max, ft bls	Description/Comments	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
										MODERATE			
POF-32	1,793.2	1,794.7	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; HIGH PINPOINT, MOLDIC, AND VUGGY POROSITY; GOOD INDURATION	DOLOMITE	30	PIN POINT - VUGS	GOOD			YELLOWISH BROWN : 10YR 5/4			
0. 02	1,700.2	1,701.7	DOLOMITE; DARK YELLOWISH BROWN: 10YR 4/2; MICROCRYSTALLINE; MODERATE PINPOINT	BOLOMITE	- 00	11110111 1000	0002			DARK YELLOWISH			
POF-32	1,794.7	1,795.7	POROSITY; GOOD INDURATION  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	20	PIN POINT - VUGS	GOOD			BROWN: 10YR 4/2 PALE YELLOWISH			
POF-32	1,795.7	1,797.9	VUGGY POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			BROWN: 10YR 6/2			
		,	DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; HIGH PINPOINT AND VUGGY							PALE YELLOWISH			
	1,797.9 1,799.1		POROSITY; GOOD INDURATION; PYRITE  NO RECOVERY	DOLOMITE	30	PIN POINT - VUGS	GOOD			BROWN : 10YR 6/2	PYRITE		
-OF-32	1,799.1	1,000.0	INO RECOVERT							MODERATE			
			DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT					ORGANICS AND		YELLOWISH BROWN			
POF-32	1,800.0	1,800.5	POROSITY; GOOD INDURATION; ORGANICS AND LAMINATIONS; LIMONITE	DOLOMITE	10	PIN POINT - VUGS	GOOD	LAMINATIONS		: 10YR 5/4 MODERATE	LIMONITE	+	
			DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT							YELLOWISH BROWN			
POF-32	1,800.5	1,801.2	AND VUGGY POROSITY; GOOD INDURATION	DOLOMITE	20	PIN POINT - VUGS	GOOD			: 10YR 5/4			
			DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND							MODERATE YELLOWISH BROWN			
POF-32	1,801.2	1,805.6	VUGGY POROSITY; GOOD INDURATION; SOME FRACTURES; LIMONITE	DOLOMITE	10	PIN POINT - VUGS	GOOD	SOME FRACTURES		: 10YR 5/4	LIMONITE		
205.00	4.005.0	4.040.0	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLONUTE.	00	DINI DOINT 1/1/00	0000			PALE YELLOWISH			
POF-32	1,805.6	1,810.0	VUGGY POROSITY; GOOD INDURATION; LIMONITE DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT POROSITY;	DOLOMITE	20	PIN POINT - VUGS	GOOD			BROWN: 10YR 6/2 PALE YELLOWISH	LIMONITE		
POF-32	1,810.0	1,811.4	GOOD INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			BROWN : 10YR 6/2			
205.00	4.044.4	4.040.0	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLONUTE.		DINI DOINT 1/1/00	0000			PALE YELLOWISH			
POF-32	1,811.4	1,812.0	VUGGY POROSITY; GOOD INDURATION; LIMONITE  DOLOMITE: PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	20	PIN POINT - VUGS	GOOD			BROWN: 10YR 6/2 PALE YELLOWISH	LIMONITE		
POF-32	1,812.0	1,813.1	VUGGY POROSITY; MODERATE INDURATION; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	MODERATE			BROWN : 10YR 6/2	LIMONITE		
			DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY							PALE YELLOWISH			
POF-32	1,813.1	1,816.2	POROSITY; MODERATE INDURATION  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	10	PIN POINT - VUGS	MODERATE			BROWN: 10YR 6/2 PALE YELLOWISH			
POF-32	1,816.2	1,817.6	VUGGY; MODERATE INDURATION; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	MODERATE			BROWN : 10YR 6/2	LIMONITE		
			DOLOMITE; VERY PALE ORANGE : 10YR 8/2; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY	;						VERY PALE ORANGE			
POF-32	1,817.6	1,818.1	MODERATE INDURATION; LIMONITE   DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY;	DOLOMITE	20	PIN POINT - VUGS	MODERATE			: 10YR 8/2 PALE YELLOWISH	LIMONITE		
POF-32	1,818.1	1,821.1	GOOD INDURATION; FRACTURED, PYRITE; LIMONITE	DOLOMITE	10	PIN POINT - VUGS	GOOD	FRACTURED, PYRITE		BROWN : 10YR 6/2	LIMONITE		
205.22	4 004 4	4 000 0	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	DOLOMITE	20	DINI DOINT MUCC	COOD			PALE YELLOWISH	LIMONITE		
POF-32	1,821.1	1,822.0	VUGGY ; GOOD INDURATION; LIMONITE DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT ; GOOD	DOLOMITE	20	PIN POINT - VUGS	GOOD			BROWN: 10YR 6/2 PALE YELLOWISH	LIMONITE		
POF-32	1,822.0	1,823.1	INDURATION	DOLOMITE	10	PIN POINT - VUGS	GOOD			BROWN: 10YR 6/2			
POF-32	1,823.1	1 024 0	DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY; GOOD INDURATION; GLAUCONITE; LIMONITE	DOLOMITE	20	PIN POINT - VUGS	GOOD	GLAUCONITE		GRAYISH ORANGE : 10YR 7/4	LIMONITE		
-OF-32	1,023.1	1,024.0	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT; GOOD	DOLOWITE	20	FIN FOINT - VOGS	GOOD	WHITE QUARTZ INFILLING		PALE YELLOWISH	LIMONTE		
	1,824.0		INDURATION; WHITE QUARTZ INFILLING VUGS	DOLOMITE	10	PIN POINT - VUGS	GOOD	VUGS		BROWN: 10YR 6/2			
POF-32	1,825.7	1,826.0	NO RECOVERY DOLOMITE; YELLOWISH GRAY (2): 5Y 8/1; MICROCRYSTALLINE; LOW PINPOINT POROSITY; GOOD					VUGS INFILLED WITH WHITE		YELLOWISH GRAY			
POF-32	1,826.0	1,827.7	INDURATION; VUGS INFILLED WITH WHITE QUARTZ	DOLOMITE	10	PIN POINT - VUGS	GOOD	QUARTZ		(2) : 5Y 8/1			
			DOLOMITE; YELLOWISH GRAY (2): 5Y 8/1; MICROCRYSTALLINE; HIGH PINPOINT, MOLDIC, AND VUGGY							YELLOWISH GRAY			
	1,827.7 1,828.4	,	POROSITY; GOOD INDURATION; FRACTURED; LIMONITE  NO RECOVERY	DOLOMITE	30	PIN POINT - VUGS	GOOD	FRACTURED		(2): 5Y 8/1	LIMONITE		
01-02	1,020.4	1,000.0	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY					VUGS INFILLED WITH WHITE					
205.00	4 000 0	4 00 4 7	POROSITY; MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ, SOME HEALED	DOLONUTE.	40	DINI DOINT 1/1/00		QUARTZ, SOME HEALED		PALE YELLOWISH			
POF-32	1,830.0	1,834.7	FRACTURES; LIMONITE DOLOMITE: PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; NO OBSERVEABLE POROSITY	DOLOMITE :	10	PIN POINT - VUGS	MODERATE	FRACTURES VUGS INFILLED WITH		BROWN: 10YR 6/2 PALE YELLOWISH	LIMONITE		
	1,834.7		MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ; LIMONITE	DOLOMITE	0	NO OBSERVABLE	MODERATE	WHITE QUARTZ		BROWN: 10YR 6/2	LIMONITE		
POF-32	1,839.0	1,840.0	NO RECOVERY							MODERATE			
			DOLOMITE; MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; NO OBSERVEABLE ;				1			YELLOWISH BROWN			
POF-32	1,840.0	1,841.8	MODERATE INDURATION	DOLOMITE	0	NO OBSERVABLE	MODERATE			: 10YR 5/4			
			DOLOMITE: MODERATE YELLOWISH BROWN : 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND					VUGS INFILLED WITH		MODERATE YELLOWISH BROWN			
POF-32	1,841.8	1,844.9	VUGGY POROSITY; MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ	DOLOMITE	10	PIN POINT - VUGS	MODERATE	WHITE QUARTZ		: 10YR 5/4			
								V/100 INE:: ===		MODERATE			_
POF-32	1,844.9	1 846 5	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; MODERATE PINPOINT AND VUGGY POROSITY; MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ	DOLOMITE	20	PIN POINT - VUGS	MODERATE	VUGS INFILLED WITH WHITE QUARTZ		YELLOWISH BROWN : 10YR 5/4			
J1 -02	1,0-7-7.0	1,040.0	PARTY TOOCH TO STOOM IT, MODELLATTE MEDITATION, VOOD HALLED WITH WHITE GOALLE	DOLOWITE	20	٧٥٥٥	WODLIKIL	THE WORKE		MODERATE			
205 22	1010 =		DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT,	DOI 014177		DIN DON'T 1 1 1 1 1 1		VUGS INFILLED WITH		YELLOWISH BROWN			
POF-32	1,846.5	1,848.5	MOLDIC, AND VUGGY POROSITY; MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ CALCAREOUS DOLOMITE; GRAYISH ORANGE: 10YR 7/4; MICROCRYSTALLINE; LOW PINPOINT AND	DOLOMITE	10	PIN POINT - VUGS	MODERATE	WHITE QUARTZ		: 10YR 5/4 GRAYISH ORANGE :		+	
	1,848.5	1 850 0	VUGGY POROSITY; MODERATE INDURATION; FRACTURED	DOLOMITE	10	PIN POINT - VUGS	MODERATE	FRACTURED		10YR 7/4			

													Porosity
Well	Depth Min, ft bls	Depth Max, ft bis	Description/Comments	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Percent Modifier
•••	11 013	Max, It bic	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN : 10YR 6/2; MICROCRYSTALLINE; NO	Nook Type	percent	1 closity Type i	mauration	Other reduce	1 ossii type	001011	Турст	Access Milit Cer	Modifier
			OBSERVEABLE POROSITY; MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ;					VUGS INFILLED WITH		PALE YELLOWISH			
POF-32	1,850.0	1,851.6	ORGANICS  CALCADEOUS DOLOMITE: DALE VELLOWISH PROWN: 10VP 6/2: MICROCRYSTALLINE: LOW VILCOY	DOLOMITE	0	NO OBSERVABLE	MODERATE	WHITE QUARTZ		BROWN: 10YR 6/2	ORGANICS		
POF-32	1,851.6	1,856.4	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW VUGGY POROSITY; MODERATE INDURATION: VUGS INFILLED WITH WHITE QUARTZ; ORGANICS	DOLOMITE	10	VUGULAR	MODERATE	VUGS INFILLED WITH WHITE QUARTZ		PALE YELLOWISH BROWN: 10YR 6/2	ORGANICS		
101-02	1,001.0	1,000.4	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; NO	BOLOWITE	10	VOCOLATIV	WODEIVIL	VUGS INFILLED WITH	+	PALE YELLOWISH	01107111100		
POF-32	1,856.4	1,859.2	OBSERVEABLE; MODERATE INDURATION; VUGS INFILLED WITH WHITE QUARTZ; ORGANICS	DOLOMITE	0	NO OBSERVABLE	MODERATE	WHITE QUARTZ		BROWN: 10YR 6/2	ORGANICS		
			CALCADEGUE DOLONITE MODERATE VELLONIOLI PROMINI 40VP 5/4 MICROSPIVATALLINE NO							MODERATE			
POF-32	1,859.2	1 860 0	CALCAREOUS DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; NO OBSERVEABLE: MODERATE INDURATION: VUGS INFILLED WITH WHITE QUARTZ: ORGANICS	DOLOMITE	0	NO OBSERVABLE	MODERATE	VUGS INFILLED WITH WHITE QUARTZ		YELLOWISH BROWN : 10YR 5/4	ORGANICS		
1 01 -32	1,000.2	1,000.0	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; NO OBSERVEABLE; MODERATE	BOLOWITE		NO OBOLITVABLE	WODEIVATE	WHITE QUARTZ,		PALE YELLOWISH	ONOANIOO		
POF-32	1,860.0	1,863.0	INDURATION; WHITE QUARTZ, LAMINATIONS; ORGANICS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE			BROWN: 10YR 6/2	ORGANICS		
BOE 00	4 000 0	4 000 0	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MODERATE PINPOINT AND VUGGY	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		NO 000000 (40) 5		WHITE QUARTZ,		PALE YELLOWISH	00044400		
POF-32	1,863.0	1,863.6	MODERATE INDURATION; WHITE QUARTZ, LAMINATIONS; ORGANICS  DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; MODERATE PINPOINT AND	LIMESTONE-WACKESTONE	20	NO OBSERVABLE	MODERATE	LAMINATIONS		BROWN: 10YR 6/2 PALE YELLOWISH	ORGANICS		
POF-32	1,863.6	1.864.3	VUGGY; MODERATE INDURATION; WHITE QUARTZ	DOLOMITE	20	PIN POINT - VUGS	MODERATE	WHITE QUARTZ		BROWN: 10YR 6/2			
	,	,	DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; NO OBSERVEABLE;					WHITE QUARTZ,		PALE YELLOWISH			
POF-32	1,864.3	1,867.2	MODERATE INDURATION; WHITE QUARTZ, LAMINATIONS; ORGANICS	DOLOMITE	0	NO OBSERVABLE	MODERATE	LAMINATIONS		BROWN: 10YR 6/2	ORGANICS		
			DOLOMITE, MODERATE VELLOWICH PROMIN, 40VP 5/4, MICROCRYCTALLINE, LOW DINDOINT AND					LANGUATIONIC VALUETE		MODERATE			
POF-32	1,867.2	1 867 6	DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY; MODERATE INDURATION; LAMINATIONS, WHITE QUARTZ; ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS, WHITE QUARTZ		YELLOWISH BROWN : 10YR 5/4	ORGANICS		
1 01 02	1,001.2	1,001.0	TOOCT, MODERATE INDIGITATION, EMINATIONS, MINITERESTRICE	BOLOWITE	10	1 11 1 0 11 1 1 0 0 0 0	WODEFERTE	QO/IIII2		MODERATE	0110711100		
			DOLOMITE; MODERATE YELLOWISH BROWN: 10YR 5/4; MICROCRYSTALLINE; LOW PINPOINT AND					WHITE QUARTZ,		YELLOWISH BROWN			
POF-32	1,867.6	1,868.3	VUGGY; MODERATE INDURATION; WHITE QUARTZ, LAMINATIONS; ORGANICS	DOLOMITE	10	PIN POINT - VUGS	MODERATE	LAMINATIONS		: 10YR 5/4	ORGANICS		
			CLAY; MODERATE YELLOWISH BROWN: 10YR 5/4; ; LOW INTERGRANULAR; UNCONSOLIDATED							MODERATE YELLOWISH BROWN			
POF-32	1,868.3	1,868.5	INDURATION	CLAY	10	INTERGRANULAR	NCONSOLIDAT	ED		: 10YR 5/4			
	,		DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY;							PALE YELLOWISH			
POF-32	1,868.5	1,869.0	MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE			BROWN : 10YR 6/2			
POF-32	1,869.0	1 960 9	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; LOW PINPOINT AND VUGGY; MODERATE INDURATION	DOLOMITE	10	PIN POINT - VUGS	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2			
POF-32	1,869.8		NO RECOVERY	DOLOMITE	10	FINFOINT - VOGS	WODERATE			DROWN . TOTA 0/2			
	,	,	CALCAREOUS DOLOMITE; PALE YELLOWISH BROWN: 10YR 6/2; MICROCRYSTALLINE; NO							PALE YELLOWISH			
POF-32	1,870.0	1,871.1	OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS	DOLOMITE	0	NO OBSERVABLE	MODERATE	LAMINATIONS		BROWN: 10YR 6/2			
POF-32	1,871.1	1,872.4	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS; FORAMINIFERA	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	LAMINATIONS	FORAMINIFERA	PALE YELLOWISH BROWN: 10YR 6/2			
1 01 -32	1,07 1.1	1,072.4	CLAY; DARK YELLOWISH BROWN: 10YR 4/2;; NO OBSERVEABLE POROSITY; UNCONSOLIDATED	LINEST SIVE-WASKEST SIVE		NO OBOLITVABLE	WODEIVATE	LAMINATIONS	1 OTOMINITETO	DARK YELLOWISH			
POF-32	1,872.4	1,872.7	INDURATION	CLAY	0	NO OBSERVABLE	NCONSOLIDAT	ED		BROWN: 10YR 4/2			
			LINESTONE WAS CESTONE MODERATE VEH COMISH PROMINE 40VP 5/4 MG CROEDVEAR							MODERATE			
POF-32	1,872.7	1 873 9	LIMESTONE-WACKESTONE; MODERATE YELLOWISH BROWN: 10YR 5/4; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS; FORAMINIFERA	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	LAMINATIONS	FORAMINIFERA	YELLOWISH BROWN : 10YR 5/4			
1 01 -32	1,072.7	1,070.0	1 OTCOTT, WODERATE INDURATION, ENVIRATIONS, FORMINITE ETA	LINEST SIVE-WASKEST SIVE		NO OBOLITVABLE	WODEIVATE	LAMINATIONS	1 OTOMINITETO	MODERATE			
			CLAY; MODERATE YELLOWISH BROWN: 10YR 5/4; ; NO OBSERVEABLE POROSITY; UNCONSOLIDATED							YELLOWISH BROWN			
POF-32	1,873.9	1,874.1	INDURATION	CLAY	0	NO OBSERVABLE	NCONSOLIDAT	ED		: 10YR 5/4			
POF-32	1,874.1	1 974 5	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS; FORAMINIFERA	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	LAMINATIONS	EODAMINIEEDA	PALE YELLOWISH BROWN: 10YR 6/2			
FOI -32	1,074.1	1,074.5	CLAY; PALE YELLOWISH BROWN: 10YR 6/2; ; NO OBSERVEABLE POROSITY; UNCONSOLIDATED	LINESTONE-WACKESTONE	0	NO OBSERVABLE	WODERATE	LAMINATIONS	1 ORAWIINII LIVA	PALE YELLOWISH			
POF-32	1,874.5	1,874.9	INDURATION	CLAY	0	NO OBSERVABLE	NCONSOLIDAT	ED		BROWN: 10YR 6/2			
			LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; NO OBSERVEABLE POROSITY;							PALE YELLOWISH			
POF-32	1,874.9	1,875.6	POOR INDURATION; LAMINATIONS; FORAMINIFERA	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR	LAMINATIONS	FORAMINIFERA	BROWN: 10YR 6/2 MODERATE			
			LIMESTONE-WACKESTONE; MODERATE YELLOWISH BROWN: 10YR 5/4; LOW INETERGRANULAR					LAMINATIONS, WHITE		YELLOWISH BROWN			
POF-32	1,875.6	1,876.1	POROSITY; MODERATE INDURATION; LAMINATIONS, WHITE QUARTZ; FORAMINIFERA	LIMESTONE-WACKESTONE	10	INTRAGRANULAR	MODERATE	*	FORAMINIFERA	: 10YR 5/4			
			LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; NO OBSERVEABLE POROSITY;							PALE YELLOWISH			
POF-32	1,876.1	1,879.2	POOR INDURATION; FORAMINIFERA  LIMESTONE-MUDSTONE: PALE YELLOWISH BROWN: 10YR 6/2: NO OBSERVEABLE POROSITY: POOR	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	POOR		FURAMINIFERA	BROWN: 10YR 6/2 PALE YELLOWISH			
POF-32	1,879.2	1,880.0	INDURATION	LIMESTONE-MUDSTONE	0	NO OBSERVABLE	POOR			BROWN: 10YR 6/2			
		,	LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;							VERY PALE ORANGE			
POF-32	1,880.0	1,882.2	MODERATE INDURATION; LIMONITE; FORAMINIFERA; PYRITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LIMONITE	FORAMINIFERA		PYRITE		
POF-32	1,882.2	1,883.7	LIMESTONE-WACKESTONE; OLIVE GRAY (2): 5Y 4/1; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS; FORAMINIFERA; ORGANICS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	LAMINATIONS	FORAMINIFERA	OLIVE GRAY (2) : 5Y 4/1	ORGANICS		
1 01 -32	1,002.2	1,000.1	LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; NO OBSERVEABLE POROSITY;	LIIVILO I OINL-VVAORES I ONE	, , ,	NO ODOLIVADLE	WODERATE	D AMILIAN LICINO	TOTAMINIFERA	VERY PALE ORANGE	CINGAINICS	+	
POF-32	1,883.7	1,887.7	MODERATE INDURATION; WHITE QUARTZ; FORAMINIFERA	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	WHITE QUARTZ	FORAMINIFERA	: 10YR 8/2			
DC =	4	4	LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR POROSITY;			NITEE 22		MILITE OL:	50B	VERY PALE ORANGE			
POF-32	1,887.7	1,888.1	MODERATE INDURATION; WHITE QUARTZ; FORAMINIFERA  LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; NO OBSERVEABLE POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	WHITE QUARTZ	FORAMINIFERA	: 10YR 8/2 VERY PALE ORANGE		+	
POF-32	1,888.1	1,890.0	IMODERATE INDURATION; FORAMINIFERA	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE		FORAMINIFERA	: 10YR 8/2			
	.,	.,555.5	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; NO OBSERVEABLE POROSITY;		-					VERY PALE ORANGE			
POF-32	1,890.0	1,893.3	MODERATE INDURATION; LAMINATIONS, LIMONITE; FORAMINIFERA; ORGANICS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	LAMINATIONS, LIMONITE	FORAMINIFERA	: 10YR 8/2	ORGANICS		
POF-32	1,893.3	1.893.7	LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; NO OBSERVEABLE POROSITY;	LIMESTONE-WACKESTONE	_	NO OBSERVABLE	MODERATE	I ADGE CHEDT MODULE		VERY PALE ORANGE : 10YR 8/2			
FUF-32	1,093.3	1,093.7	MODERATE INDURATION; LARGE CHERT NODULE	LIIVIES I OINE-WACKES I OINE	U	NO OBSERVABLE	IVIODERATE	LARGE CHERT NODULE		. 1011 0/2		1	

	Depth Min,	Depth			Porosity,						Access Min		Porosity Percent
Well	ft bls	Max, ft bls	·	Rock Type	percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Type1	Access Min Pct1	Modifier
POF-32	1,893.7	1,897.6	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; NO OBSERVEABLE POROSITY; MODERATE INDURATION; LAMINATIONS, WHITE QUARTZ; FORAMINIFERA; ORGANICS	LIMESTONE-WACKESTONE	0	NO OBSERVABLE	MODERATE	LAMINATIONS, WHITE QUARTZ	FORAMINIFERA	VERY PALE ORANGE : 10YR 8/2	ORGANICS		
			LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;					LAMINATIONS, WHITE	FORMANIEERA	VERY PALE ORANGE	ODOANIOO		
POF-32	1,897.6	1,900.0	MODERATE INDURATION; LAMINATIONS, WHITE QUARTZ; FORAMINIFERA; ORGANICS  LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	QUARTZ	FORAMINIFERA	: 10YR 8/2 VERY PALE ORANGE	ORGANICS		
POF-32	1,900.0	1,902.3	MODERATE INDURATION; LAMINATIONS; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS		: 10YR 8/2	ORGANICS		
POF-32	1,902.3	1,904.2	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION; WHITE QUARTZ	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	WHITE QUARTZ		VERY PALE ORANGE : 10YR 8/2			
DOE 00	4.004.0	4.005.0	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR		40	INTEROPANULAR	BOOD			VERY PALE ORANGE			
POF-32	1,904.2	1,905.0	INDURATION LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			: 10YR 8/2 VERY PALE ORANGE			
POF-32	1,905.0	1,905.8	MODERATE INDURATION; LAMINATIONS; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS		: 10YR 8/2	ORGANICS		
POF-32	1,905.8	1,906.3	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY; POOR INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			VERY PALE ORANGE : 10YR 8/2			
DOE 22	1.006.3	1 007 7	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR AND	LIMESTONE WACKESTONE	20		DOOR	WHITE OLIABITZ		VERY PALE ORANGE			
POF-32	1,906.3	1,907.7	VUGGY POROSITY; POOR INDURATION; WHITE QUARTZ LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR AND	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR	WHITE QUARTZ FRACTURED, WHITE		: 10YR 8/2 VERY PALE ORANGE			
POF-32	1,907.7		VUGGY POROSITY; MODERATE INDURATION; FRACTURED, WHITE QUARTZ, GLAUCONITE; LIMONITE	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	QUARTZ, GLAUCONITE		: 10YR 8/2	LIMONITE		
POF-32	1,909.7	1,910.0	NO RECOVERY  LIMESTONE-WACKESTONE; DARK YELLOWISH BROWN: 10YR 4/2; LOW INTERGRANULAR POROSITY;							DARK YELLOWISH			
POF-32	1,910.0	1,911.1	MODERATE INDURATION; INTRACLASTS; LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	INTRACLASTS		BROWN: 10YR 4/2	LIMONITE		
POF-32	1,911.1	1,912.2	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN : 10YR 6/2; LOW INTERGRANULAR POROSITY; MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2			
DOE 22	1.010.0	1 012 2	LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR POROSITY;	LIMESTONE WACKESTONE	10		MODERATE			GRAYISH ORANGE :			
POF-32	1,912.2	1,913.3	MODERATE INDURATION LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR POROSITY;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			10YR 7/4 VERY PALE ORANGE			
POF-32	1,913.3	1,915.1	MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			: 10YR 8/2			
POF-32	1,915.1	1,916.1	CLAYEY LIMESTONE-WACKESTONE; GRAYISH GREEN : 10GY 5/2; LOW INTERGRANULAR POROSITY; POOR INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	GLAUCONITE		GRAYISH GREEN : 10GY 5/2	CLAY		
DOE 22	1.040.4	4.040.0	CLAYEY LIMESTONE-WACKESTONE; YELLOWISH GRAY (2): 5Y 8/1; LOW INTERGRANULAR; POOR	LIMECTONE WACKECTONE	40		POOR	LAMINATIONIC ODCANICO		YELLOWISH GRAY	CL AV		
POF-32	1,916.1	1,918.2	INDURATION; LAMINATIONS, ORGANICS LIMESTONE-MUDSTONE; YELLOWISH GRAY (2): 5Y 8/1; LOW INTERGRANULAR; MODERATE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LAMINATIONS, ORGANICS		(2) : 5Y 8/1 YELLOWISH GRAY	CLAY		
POF-32	1,918.2	1,918.9	INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE			(2): 5Y 8/1			
POF-32	1,918.9	1,920.0	LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2) : 5Y 6/1; LOW INTERGRANULAR ; MODERATE INDURATION; LAMINATIONS	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS		LIGHT OLIVE GRAY (2): 5Y 6/1	ORGANICS		
DOE 22	4.000.0	4 004 0	CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; MODERATE INTERGRANULAR ;	LIMECTONE WACKECTONE	20		MODERATE	EDACTURED		VERY PALE ORANGE			
POF-32	1,920.0	1,921.0	MODERATE INDURATION; FRACTURED  CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FRACTURED		: 10YR 8/2 PALE YELLOWISH			
POF-32	1,921.0	1,922.8	MODERATE INDURATION; LAMINATIONS, ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS, ORGANICS		BROWN: 10YR 6/2	CLAY		
POF-32	1,922.8	1,923.4	CLAYEY LIMESTONE-WACKESTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; MODERATE INTERGRANULAR AND VUGGY; MODERATE INDURATION	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			LIGHT OLIVE GRAY (2) : 5Y 6/1	CLAY		
DOE 22	1.002.4	1 004 5	CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MODERATE	LIMESTONE WACKESTONE	20		MODERATE			PALE YELLOWISH			
POF-32	1,923.4	1,924.5	INTERGRANULAR AND VUGGY; MODERATE INDURATION CLAYEY LIMESTONE-WACKESTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; MODERATE INTERGRANULAR	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			BROWN : 10YR 6/2 LIGHT OLIVE GRAY			
POF-32	1,924.5	1,925.7	AND VUGGY; MODERATE INDURATION CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			(2) : 5Y 6/1 VERY PALE ORANGE			
POF-32	1,925.7	1,927.7	MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			: 10YR 8/2			
POF-32	1,927.7	1 020 0	CLAYEY LIMESTONE-MUDSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; MODERATE INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2			
	,		CLAYEY LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2) : 5Y 6/1; MODERATE INTERGRANULAR AND							LIGHT OLIVE GRAY			
POF-32	1,929.0	1,930.0	VUGGY ; MODERATE INDURATION LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR : POOR	LIMESTONE-MUDSTONE	20	INTERGRANULAR	MODERATE			(2) : 5Y 6/1 VERY PALE ORANGE			
POF-32	1,930.0	1,931.4	INDURATION; LIMONITE; PYRITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	LIMONITE		: 10YR 8/2	PYRITE		
POF-32	1,931.4	1 932 0	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN : 10YR 6/2; LOW INTERGRANULAR ; MODERATE INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			PALE YELLOWISH BROWN: 10YR 6/2			
	,		LIMESTONE-MUDSTONE; GRAY: N5; HIGH INTERGRANULAR AND VUGGY; MODERATE INDURATION;										
POF-32	1,932.0	1,932.5	ORGANICS  LIMESTONE-WACKESTONE: VERY PALE ORANGE : 10YR 8/2: MODERATE INTERGRANULAR AND	LIMESTONE-MUDSTONE	30	INTERGRANULAR	MODERATE			GRAY : N5 VERY PALE ORANGE	ORGANICS		
POF-32	1,932.5	1,933.3	VUGGY; MODERATE INDURATION	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			: 10YR 8/2			
POF-32	1,933.3	1 93/1 2	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; MODERATE INDURATION; LAMINATIONS; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS		VERY PALE ORANGE : 10YR 8/2	ORGANICS		
		,	LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR ; MODERATE					T WILLAY LIOLAO		GRAYISH ORANGE :	UNUANIUS		
POF-32	1,934.2	1,936.1	INDURATION; FORAMINIFERA LIMESTONE-WACKESTONE; LIGHT GRAY: N7; LOW INTERGRANULAR; MODERATE INDURATION;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE		FORAMINIFERA	10YR 7/4			
POF-32	1,936.1	1,938.0	INTERCLASTS; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	INTERCLASTS		LIGHT GRAY : N7	ORGANICS		
POF-32	1,938.0	1,938.1	LIMESTONE-WACKESTONE; YELLOWISH GRAY (2): 5Y 8/1; LOW INTERGRANULAR; MODERATE INDURATION; LAMINATIONS; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS		YELLOWISH GRAY (2): 5Y 8/1	ORGANICS		
	,		LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN : 10YR 6/2; LOW INTERGRANULAR ; MODERATE							PALE YELLOWISH	ONOANIOS		
POF-32	1,938.1	1,938.8	INDURATION; INTERCLASTS LIMESTONE-WACKESTONE; LIGHT GRAY: N7; LOW INTERGRANULAR; MODERATE INDURATION;	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	INTERCLASTS		BROWN : 10YR 6/2			
POF-32	1,938.8	1,939.1	INTERCLASTS; ORGANICS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	INTERCLASTS		LIGHT GRAY : N7	ORGANICS		

	Depth Min,				Porosity,						Access Min		Porosity Percent
Well	ft bls	Max, ft bl	Description/Comments   LIMESTONE-WACKESTONE; YELLOWISH GRAY (2) : 5Y 8/1; LOW INTERGRANULAR; POOR	Rock Type	percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1 YELLOWISH GRAY	Type1	Access Min Pct1	Modifier
POF-32	1,939.1	1,940.0	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR			(2) : 5Y 8/1			
POF-32	1,940.0	1,940.9	LIMESTONE-WACKESTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; LOW INTERGRANULAR; MODERATE INDURATION; LAMINATIONS, PELLETS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS, PELLETS		LIGHT OLIVE GRAY (2): 5Y 6/1			
	·		LIMESTONE-WACKESTONE; YELLOWISH GRAY (2): 5Y 8/1; MODERATE INTERGRANULAR; POOR							YELLOWISH GRAY			
POF-32 POF-32	1,940.9 1,942.0		INDURATION; FRACTURED  LIMESTONE-MUDSTONE; WHITE: N9; MODERATE INTERGRANULAR; POOR INDURATION	LIMESTONE-WACKESTONE LIMESTONE-MUDSTONE	20 20	INTERGRANULAR INTERGRANULAR	POOR POOR	FRACTURED		(2) : 5Y 8/1 WHITE : N9			
POF-32	1,943.0		LIMESTONE-MUDSTONE; WHITE: N9; LOW INTERGRANULAR; POOR INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			WHITE: N9			-
			LIMESTONE-WACKESTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; MODERATE INTERGRANULAR; MODERATE					LAMINATIONS, PELLETS,		LIGHT OLIVE GRAY			
POF-32	1,945.2	1,946.1	INDURATION; LAMINATIONS, PELLETS, FRACTURED	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	FRACTURED		(2) : 5Y 6/1 VERY PALE ORANGE			
POF-32	1,946.1	1,950.0	LIMESTONE-MUDSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR; POOR INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			: 10YR 8/2			
DOE 22	4.050.0	4.053.0	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; POOR	LIMECTONE WAS SKECTONE	40	INTERCRANIII AR	DOOD	LIMONITE, SOME		VERY PALE ORANGE			
POF-32	1,950.0	1,953.8	INDURATION LIMESTONE-MUDSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR; POOR INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FRACTURES		: 10YR 8/2 VERY PALE ORANGE	PYRITE		
POF-32	1,953.8	1,957.6	LIMONITE, SOME FRACTURES; PYRITE	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			: 10YR 8/2			
DOE 00	4.057.0	4.050.0	LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; LOW INTERGRANULAR; MODERATE	LIMEOTONE MUDOTONE	40	INTEROPANULAR	MODERATE	ED A OTLUBED		LIGHT OLIVE GRAY			
POF-32	1,957.6	1,958.9	INDURATION LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; POOR	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE	FRACTURED		(2) : 5Y 6/1 VERY PALE ORANGE			
POF-32	1,958.9	1,960.0	INDURATION; FRACTURED	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	FRACTURED		: 10YR 8/2	LIMONITE		
DOE 00	4.000.0	4 000 0	LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; POOR	LIMEOTONE WAS OKEDTONE	40	INTEROPANULAR	BOOD	INTRACIACTO		VERY PALE ORANGE	LIMONITE		
POF-32	1,960.0	1,960.8	INDURATION; FRACTURED; LIMONITE  CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR; POOR	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	INTRACLASTS		: 10YR 8/2 VERY PALE ORANGE	LIMONITE		
POF-32	1,960.8	1,962.0	INDURATION; INTRACLASTS	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	INTRACLASTS		: 10YR 8/2	CLAY		
DOE 00	4.000.0	4 000 5	CLAYEY LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; LOW INTERGRANULAR; MODERATE		40	INTEROPANULAR	MODERATE	LAMINATIONS,	OLALIOONITE	LIGHT OLIVE GRAY	OL AV		
POF-32	1,962.0	1,962.5	INDURATION; LAMINATIONS, INTRACLASTS; GLAUCONITE  CLAYEY LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; MODERATE INTERGRANULAR AND	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE	INTRACLASTS	GLAUCONITE	(2) : 5Y 6/1 LIGHT OLIVE GRAY	CLAY		
POF-32	1,962.5	1,963.3	VUGGY; MODERATE INDURATION; INTRACLASTS; GLAUCONITE	LIMESTONE-MUDSTONE	20	INTERGRANULAR	MODERATE	INTRACLASTS	GLAUCONITE	(2) : 5Y 6/1	CLAY		
DOE 00	4.000.0	4 004 0	CLAYEY LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; LOW INTERGRANULAR; MODERATE		40	INTEROPANULAR	MODERATE	ED A OTLUBED	OLALIOONITE	LIGHT OLIVE GRAY	OL AV		
POF-32	1,963.3	1,964.0	INDURATION; FRACTURED; GLAUCONITE  LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MODERATE INTERGRANULAR AND	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE	FRACTURED	GLAUCONITE	(2): 5Y 6/1 PALE YELLOWISH	CLAY		
POF-32	1,964.0	1,965.7	VUGGY; MODERATE INDURATION; FRACTURED; CLAY	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			BROWN : 10YR 6/2			
DOE 00	4.005.7	4 007 7	LIMESTONE-PACKSTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; MODERATE	LIMESTONE DA OKOTONE	40	INITED OF ANII II AF	MODERATE			VERY PALE ORANGE			
POF-32	1,965.7	1,967.7	INDURATION LIMESTONE-WACKESTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; LOW INTERGRANULAR; MODERATE	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE	LAMINATIONS,		: 10YR 8/2 LIGHT OLIVE GRAY			
POF-32	1,967.7	1,968.2	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	INTRACLASTS		(2): 5Y 6/1	GLAUCONITE		
DOE 00	4.000.0	4.070.0	LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; MODERATE INTERGRANULAR;	LIMEGEONE WAS SKEDTONE	00	INITED OF ANII II AF	MODERATE			VERY PALE ORANGE			
POF-32	1,968.2	1,970.0	MODERATE INDURATION; LAMINATIONS, INTRACLASTS; GLAUCONITE   CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE			: 10YR 8/2 PALE YELLOWISH			
POF-32	1,970.0	1,971.2	MODERATE INDURATION; LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LIMONITE		BROWN : 10YR 6/2	CLAY		
DOE 00	4.074.0	4 070 4	CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MODERATE	LIMEOTONE WAS OKEDTONE	00	INTEROPANIULAR	MODERATE	OLALIOONITE LIMONITE		PALE YELLOWISH	01.437		
POF-32	1,971.2	1,972.4	INTERGRANULAR; MODERATE INDURATION; GLAUCONITE, LIMONITE  CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR;	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	GLAUCONITE, LIMONITE		BROWN : 10YR 6/2 PALE YELLOWISH	CLAY		
POF-32	1,972.4	1,973.0	MODERATE INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	GLAUCONITE		BROWN: 10YR 6/2	CLAY		
DOE 22	4.070.0	4.074.4	CLAYEY LIMESTONE-MUDSTONE; LIGHT OLIVE GRAY (2): 5Y 6/1; LOW INTERGRANULAR; POOR	LIMECTONE MUDOTONE	40	INTERCRANULAR	DOOD			LIGHT OLIVE GRAY	CLAY		
POF-32	1,973.0	1,974.1	INDURATION CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR: POOR	LIMESTONE-MUDSTONE	10	INTERGRANULAR	POOR			(2) : 5Y 6/1 VERY PALE ORANGE	CLAY		
POF-32	1,974.1	1,975.6	INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	POOR	GLAUCONITE		: 10YR 8/2	CLAY		
POF-32	1,975.6	1.076.0	CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR; MODERATE INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	GLAUCONITE		VERY PALE ORANGE : 10YR 8/2	CLAY		
FUF-32	1,975.0	1,970.0	CLAYEY LIMESTONE-MUDSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR; GOOD	LIMESTONE-WACKESTONE	10	INTERGRANULAR	WODERATE	GLAUCONITE		VERY PALE ORANGE	CLAT		
POF-32	1,976.0	1,976.9	INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	GOOD			: 10YR 8/2	CLAY		
POF-32	1,976.9	1 078 2	CLAYEY LIMESTONE-MUDSTONE; VERY PALE ORANGE: 10YR 8/2; LOW INTERGRANULAR; MODERATE INDURATION	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE			VERY PALE ORANGE : 10YR 8/2	CLAY		
FOI -32	1,970.9	1,970.2	CLAYEY LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR AND	LIMESTONE-MODSTONE	10	INTERGRANULAR	WODEIVATE			VERY PALE ORANGE	OLAT		
POF-32	1,978.2	1,979.0	VUGGY; MODERATE INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	GLAUCONITE		: 10YR 8/2	CLAY		
POF-32	1,979.0	1 020 2	CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR; MODERATE INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODEBATE	GLAUCONITE		PALE YELLOWISH BROWN: 10YR 6/2	CLAY		
F UI-32	1,378.0	1,300.0	CLAYEY LIMESTONE-PACKSTONE; PALE YELLOWISH BROWN: 10YR 6/2; MODERATE INTERGRANULAR		10	INTLINGINATIOLAR	WODERATE	OLAUGUNITE		PALE YELLOWISH	OLAT		
POF-32	1,980.8	1,983.5	; POOR INDURATION; LIMONITE	LIMESTONE-PACKSTONE	20	INTERGRANULAR	POOR	LIMONITE		BROWN: 10YR 6/2	CLAY		
POF-32	1,983.5	1.985.2	CLAYEY LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; MODERATE INTERGRANULAR; POOR INDURATION	LIMESTONE-WACKESTONE	20	INTERGRANULAR	POOR			PALE YELLOWISH BROWN: 10YR 6/2	CLAY		
1 01 -02	1,000.0	1,000.2	LIMESTONE-WACKESTONE; PALE YELLOWISH BROWN: 10YR 6/2; LOW INTERGRANULAR; MODERATE		20	HILIOMANOLAN	1 3010			PALE YELLOWISH	OLAT		
POF-32	1,985.2	1,986.1	INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			BROWN : 10YR 6/2			
POF-32	1,986.1	1 987 9	CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; MODERATE INTERGRANULAR; POOR INDURATION	LIMESTONE-PACKSTONE	20	INTERGRANULAR	POOR			GRAYISH ORANGE : 10YR 7/4	CLAY		
1 01 -32	1,000.1	1,301.0	LIMESTONE-WACKESTONE; GRAYISH ORANGE: 10YR 7/4; HIGH INTERGRANULAR AND VUGGY;	LIVILOTONE-I ACROTONE	20	INTERCONAINCEAR	1 0010			GRAYISH ORANGE :	OLA I		
POF-32	1,987.8	1,988.2	MODERATE INDURATION; GLAUCONITE	LIMESTONE-WACKESTONE	30	INTERGRANULAR	MODERATE			10YR 7/4	GLAUCONITE		
POF-32	1,988.2	1 990 0	CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; MODERATE INTERGRANULAR; POOR INDURATION	LIMESTONE-PACKSTONE	20	INTERGRANULAR	POOR			GRAYISH ORANGE : 10YR 7/4	CLAY		
FUP-32	1,900.2	1,990.0	ILOQUI INDOINATION	LIMESTONE-PACKSTONE	∠∪	INTERGRANULAR	FUUK		1	101R 1/4	CLAT		

Well	Depth Min, ft bls	Depth Max, ft bls	Description/Comments	Rock Type	Porosity, percent	Porosity Type1	Induration	Other Feature	Fossil type	Color1	Access Min Type1	Access Min Pct1	Porosity Percent Modifier
			LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR ; MODERATE							GRAYISH ORANGE :			
POF-32	1,990.0		INDURATION; LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			10YR 7/4	LIMONITE		
DOE 00	4 000 0		CLAYEY LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; MODERATE INTERGRANULAR AND	LIMESTONE MANAGEMENTS	00	NITEDODANIII 45	MODERATE	LIMONUTE		GRAYISH ORANGE :	01.41/		
POF-32	,		VUGGY ; MODERATE INDURATION; LIMONITE	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	LIMONITE		10YR 7/4	CLAY		
POF-32	1,991.3		LIMESTONE-MUDSTONE; GRAY: N5; LOW INTERGRANULAR; MODERATE INDURATION; LIMONITE	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE			GRAY : N5	LIMONITE		
			LIMESTONE-WACKESTONE; VERY PALE ORANGE : 10YR 8/2; LOW INTERGRANULAR ; MODERATE							VERY PALE ORANGE			
POF-32	1,991.7		INDURATION	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE			: 10YR 8/2			
			LIMESTONE-MUDSTONE; PALE YELLOWISH BROWN : 10YR 6/2; LOW INTERGRANULAR ; MODERATE							PALE YELLOWISH			
POF-32	1,992.4		INDURATION; LIMONITE	LIMESTONE-MUDSTONE	10	INTERGRANULAR	MODERATE			BROWN: 10YR 6/2	LIMONITE		
			CLAYEY LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; MODERATE INTERGRANULAR ;							GRAYISH ORANGE :			
POF-32	1,992.9		MODERATE INDURATION; LIMONITE	LIMESTONE-WACKESTONE	20	INTERGRANULAR	MODERATE	LIMONITE		10YR 7/4	CLAY		
			LIMESTONE-WACKESTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR ; MODERATE							GRAYISH ORANGE :			
POF-32	1,994.1		INDURATION; LIMONITE	LIMESTONE-WACKESTONE	10	INTERGRANULAR	MODERATE	LIMONITE		10YR 7/4			
			CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; MODERATE INTERGRANULAR AND							GRAYISH ORANGE :			
POF-32	1,994.6		VUGGY ; POOR INDURATION; LIMONITE	LIMESTONE-PACKSTONE	20	INTERGRANULAR	POOR	LIMONITE		10YR 7/4	CLAY		
			CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; HIGH INTERGRANULAR AND VUGGY ;							GRAYISH ORANGE :			
POF-32	1,996.2	1,996.9	POOR INDURATION; LIMONITE	LIMESTONE-PACKSTONE	30	INTERGRANULAR	POOR	LIMONITE		10YR 7/4	CLAY		
			CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE: 10YR 7/4; HIGH INTERGRANULAR AND VUGGY;							GRAYISH ORANGE :			
POF-32	1,996.9	1,997.5	MODERATE INDURATION; LIMONITE	LIMESTONE-PACKSTONE	30	INTERGRANULAR	MODERATE	LIMONITE		10YR 7/4	CLAY		
			CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; MODERATE INTERGRANULAR ;							GRAYISH ORANGE :			
POF-32	1,997.5	1,998.4	MODERATE INDURATION	LIMESTONE-PACKSTONE	20	INTERGRANULAR	MODERATE			10YR 7/4	CLAY		
			CLAYEY LIMESTONE-PACKSTONE; GRAYISH ORANGE : 10YR 7/4; LOW INTERGRANULAR ; MODERATE							GRAYISH ORANGE :			
POF-32	1,998.4	2,000.0	INDURATION	LIMESTONE-PACKSTONE	10	INTERGRANULAR	MODERATE			10YR 7/4	CLAY		

SAMPLE COLLECTION AND	APPENDIX G: SEIVING METH	ODOLOGY AND	RESULTS

#### SAMPLE COLLECTION AND SEIVING METHODOLOGY AND RESULTS

## **Standard Penetration Test Sampling Methodology**

Prior to driving the standard penetration test (SPT) sampler at each sample depth, the borehole was cleaned out to prevent the collection of blow counts for unrepresentative loose, disturbed material at the bottom of the borehole. Following ASTM standard D1586/D1586M-18e1 (ASTM 2022) for SPT sampling, the SPT sampler was first attached to the bottom of a string of steel drill rods, and the rods were lowered to the bottom of the borehole. Next, a 140-pound hammer was affixed to an anvil attached to the top of the drill rods and dropped 30 inches using a cat head to drive the SPT sampler into the sediment. Each strike from the 140-pound hammer is a referred to as a "blow" and the number of blows required to drive the SPT sampler 6 inches is called the blow count. Per ASTM (2022), "the SPT 'N' value is the number of hammer blows required to drive the sampler over the depth interval of 0.5 to 1.5 ft [0.15 to 0.45 m] of a 1.5 ft [0.45 m] drive interval." For a 24-inch-long SPT sampler, there are four 6-inch-long intervals, each with its own total number of blows, referred to as N<sub>1</sub>, N<sub>2</sub>, N<sub>3</sub>, and N<sub>4</sub>, where N<sub>1</sub> is the number of blows used to drive the sampler the first 6 inches, and N<sub>4</sub> is the number of blows used to drive the sampler the bottom 6 inches of the sample interval. This ASTM standard is based on using an 18-inch long SPT sampler, so the N for a SPT sample is defined by ASTM (2022) as N<sub>2</sub>+N<sub>3</sub>. This is because the bottom-most foot of an 18-inchlong SPT sample is generally undisturbed by drilling operations and is representative of the in situ, undisturbed penetration resistance (relative density) of the sediments, whereas the first 6 inches of each driven samples are referred to as the "seating interval" and are considered disturbed. In practice, however, a 24-inch-long SPT sampler is often used to ensure obtaining sufficient material for laboratory testing, particularly in loose, unconsolidated material where material can easily be lost upon sample retrieval. Even though the bottom 18 inches of a 24-inch-long SPT sampler is likely undisturbed, for the purposes of this investigation, the ASTM methodology was followed, and the middle foot of each sample  $(N_2+N_3)$  was used to calculate the N-value for each SPT sample. This is the convention utilized in previous District reports. The first blow count (N<sub>1</sub>) is generally considered to be "disturbed" by drilling and is not used for N-value calculations in either 18-inch-long SPT samplers or 24-inch-long SPT samplers. N-values positively correlate with the relative density of sands and clays. Overburden pressures and other correction factors were not accounted for in the calculations of N-values. Ideally, SPT samples are driven at 5-foot-depth intervals to assure minimal disturbance to the next sampled interval. At the Sumica site, SPT samples were driven continuously, which could possibly cause disturbance between samples.

Because these data were collected primarily for a general lithologic characterization and classification of the shallow surficial aquifer system (SAS) sediments and were not intended for use in foundation design, seismic evaluations, or other sensitive engineering design purposes, the continuous sampling used at the Sumica site is not a cause for concern. Each SPT sample was removed from the sampler, described, and placed in a labeled resealable bag for later sieve analyses and soil classification at the District warehouse.

## Soil Sieving Methodology

In accordance with ASTM standard D6913/D6913M-17 (ASTM 2021) for mechanical sieve analyses, the middle 12 inches of each SPT soil sample was placed in a pan and weighed. The samples were then dried in an oven at approximately 370°C for 3 to 4 hours, then placed in a sieve shaker for 15 minutes for optimal particle separation through each sieve. Each soil sample passed through eight successively smaller sieves (#10 to #200 sieves), and particles smaller than the openings in the #200 sieve (0.075 millimeter openings) were captured in a pan at the bottom of the sieve stack. The contents of each sieve and pan were carefully transferred to a tared pan and weighed.

#### Soil Sieving Results for Surficial Aquifer System Sediments

For each tested SAS soil sample, the percentage of grains finer than each subsequent sieve (percent passing) was calculated and plotted on a cumulative frequency graph to create a grain size distribution graph using HydrogeoSieveXL (Devlin 2015), which is a freely available, peer-reviewed Microsoft Excel spreadsheet that calculates hydraulic conductivity (K) values from grain size distribution curves using 15 different methods. ASTM standard D2487-17e1 (ASTM 2020) for classification of soils was then used to classify and apply the appropriate Unified Soil Classification System (USCS) soil type using the grain size distribution data and the coefficients of uniformity (C<sub>u</sub>) and curvature (C<sub>c</sub>). **Table G-1** presents the soil sieving results and USCS soil types for each sample. For the complete HydrogeoSieveXL data sheets and grain size distribution curves, the *HydrogeoSieveXL Grain Size Analysis Report* is included at the end of this summary. All the sieved samples were coarse grained soils, with most of the samples falling into the poorly graded sand with clay (SP-SC) and poorly graded sand (SP) categories. Only one sample contained more than 20% fines (sample from 17 to 19 feet below land surface [ft bls]). This sample was classified as a clayey sand (SC). Due to sample acquisition issues, no data are available from the interval of 31 to 33 ft bls.

#### Hydraulic Conductivity Estimation for Surficial Aquifer System Sediments

The grain size distribution results were used to estimate hydraulic conductivities using HydrogeoSieveXL (Devlin 2015). During development of this Excel spreadsheet, HydrogeoSieveXL was found to calculate hydraulic conductivity values for the most part identically to those reported in the literature, using the published grain size distribution curves (Devlin 2015). This program is beneficial because it can provide a better indication of the range of hydraulic conductivities that might apply to a particular sample as well as illustrating the inherent uncertainties associated with the estimation of hydraulic conductivity from grain size analyses. The resultant hydraulic conductivities discussed below are meant to provide the reader with an approximate range of hydraulic conductivities for the SAS sediments at the site; however, a properly conducted aquifer performance test is the only way to obtain a truly representative hydraulic conductivity or transmissivity of an aquifer.

#### Hydraulic Conductivity Results for Surficial Aguifer System Sediments

Grain size distribution data obtained from sieving the SUMICAN-PW and POS-21 soil samples were entered into HydrogeoSieveXL for creation of grain size curves and generation of a range of possible hydraulic conductivities for each sample. **Table G-1** presents a summary of the soil sieving results and the resultant hydraulic conductivity estimate for each soil sample. Each hydraulic conductivity value presented in **Table G-1** is the arithmetic mean of all the hydraulic conductivity calculations that met the criteria inherent to each analytical method for each sample. As shown in **Table G-1**, the range of mean hydraulic conductivities of the tested SAS sediments ranged from 4 ft/day to 46 ft/day.

Table G-1. Soil types and mean hydraulic conductivities for surficial aquifer system sediments.

USCS Soil Type (ASTM 2020)	Sample Location	Depth Interval, ft bls	Uniformity Coefficient (C <sub>u</sub> )	Curvature Coefficient (C <sub>c</sub> )	% Fines (Passing through #200 sieve)	% Coarse (Retained on #200 sieve)	Arithmetic Mean Hydraulic Conductivity, ft/day
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	7-9	2.36	1.17	6.04	93.96	38
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	9-11	2.25	1.12	5.20	94.80	37
Poorly Graded Sand (SP)	POS-21	11-13	2.19	1.10	4.76	95.24	39
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	13-15	2.31	1.13	5.47	94.53	33
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	15-17	2.48	1.09	5.14	94.86	46
Clayey Sand (SC)	POS-21	17-19	6.45	1.42	20.05	79.95	4
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	19-21	2.69	1.26	8.60	91.40	23
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	21-23	2.46	1.26	8.82	91.18	23
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	23-25	2.14	1.11	6.84	93.16	29
Poorly Graded Sand (SP)	POS-21	25-27	1.57	0.98	4.25	95.75	43
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	27-29	2.04	1.13	8.18	91.82	26
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	29-31	2.14	1.10	7.15	92.85	29
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	31-33	No Data	No Data	No Data	No Data	No Data
Poorly Graded Sand (SP)	SUMICAN- PW	34-36	1.54	0.98	4.72	95.28	40
Poorly Graded Sand (SP)	SUMICAN- PW	39-41	1.44	1.00	3.50	96.50	40
Poorly Graded Sand (SP)	SUMICAN- PW	44-46	1.85	0.96	4.95	95.05	35
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN- PW	49-51	1.31	1.28	6.65	93.35	28
Poorly Graded Sand (SP)	SUMICAN- PW	54-56	3.31	0.93	2.26	97.74	43
Poorly Graded Sand (SP)	SUMICAN- PW	59-61	1.97	0.76	3.12	96.88	41

Table G-1. Continued.

USCS Soil Type (ASTM 2020)	Sample Location	Depth Interval, ft bls	Uniformity Coefficient (C <sub>u</sub> )	Curvature Coefficient (C <sub>c</sub> )	% Fines (Passing through #200 sieve)	% Coarse (Retained on #200 sieve)	Arithmetic Mean Hydraulic Conductivity, ft/day
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN- PW	64-66	1.58	1.15	6.46	93.54	30
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN- PW	69-71	1.6	1.16	6.06	93.94	30
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN- PW	74-76	1.73	1.14	8.39	91.61	23
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN- PW	79-81	2.32	1.14	11.77	88.23	14
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN- PW	83-85	1.93	1.06	11.15	88.85	17

 $C_c$  = curvature coefficient;  $C_u$  = uniformity coefficient; ft bls = feet below land surface; ft/day = feet per day; USCS = Unified Soil Classification System.

#### Standard Penetration Test Results

The classification system (ASTM 2022) for assigning a relative density descriptor to coarse grained, cohesionless soils and for assigning a consistency descriptor to fine grained, cohesive soils is presented in **Table G-2**. **Table G-3** presents the penetration resistance (N value) for each soil sample and the resultant relative densities of all the soil samples collected from SUMICAN-PW and POS-21 using the subdivisions shown in **Table G-2**. All but two of the samples were medium dense, except for one loose sample (from 9 to 11 ft bls) and one dense sample (from 29 to 31 ft bls). None of the samples were fine grained (i.e., silt or clay).

Table G-2. Relative density and consistency descriptors based on standard penetration test results.

	Coarse Grained Soil	Fine Grained Soil						
N	Relative Density	N	Consistency					
0-4	Very Loose	Below 2	Very Soft					
4-10	Loose	2-4	Soft					
10-30	Medium	4-8	Medium					
30-50	Dense	8-15	Stiff					
0 50	V D	15-30	Very Stiff					
Over 50	Very Dense	Over 30	Hard					

N = penetration resistance.

Table G-3. Relative densities of surficial aquifer system sediments.

USCS Soil Type (ASTM 2020)	Sample Location	Depth Interval, ft bls	SPT N Value (N <sub>2</sub> +N <sub>3</sub> )	Relative Density
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	7-9	15	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	9-11	45	Dense
Poorly Graded Sand (SP)	POS-21	11-13	13	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	13-15	30	Dense
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	15-17	20	Medium
Clayey Sand (SC)	POS-21	17-19	17	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	19-21	11	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	21-23	12	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	23-25	8	Loose
Poorly Graded Sand (SP)	POS-21	25-27	10	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	27-29	28	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	29-31	24	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	POS-21	31-33	No Data	No Data
Poorly Graded Sand (SP)	SUMICAN-PW	34-36	14	Medium
Poorly Graded Sand (SP)	SUMICAN-PW	39-41	16	Medium
Poorly Graded Sand (SP)	SUMICAN-PW	44-46	12	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN-PW	49-51	42	Dense
Poorly Graded Sand (SP)	SUMICAN-PW	54-56	9	Loose
Poorly Graded Sand (SP)	SUMICAN-PW	59-61	27	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN-PW	64-66	40	Dense
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN-PW	69-71	22	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN-PW	74-76	14	Medium
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN-PW	79-81	6	Loose
Poorly Graded Sand w/Clay (or silty clay) (SP-SC)	SUMICAN-PW	83-85	15	Medium

ft bls = feet below land surface; N = penetration resistance; SPT = standard penetration test; USCS = Unified Soil Classification System.

#### **Literature Cited**

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- Devlin, J.F. 2015. HydrogeoSieveXL: An Excel-based tool to estimate hydraulic conductivity from grainsize analysis. *Hydrogeology Journal* 23:837-844.

# APPENDIX H: WATER QUALITY FIELD PARAMETERS

Table H-1. Water quality field parameters.

Camanla Dandh	Packer	II144:1:-		Field Parameters	3
Sample Depth (ft bls)	Test #	Hydrostratigraphic – Unit	рН	Temperature (°C)	Specific Conductance (µS/cm)
320-350	2		7.90	24.8	171
350-380	3	UFA-upper (250-410 ft bls)	7.90	24.7	174
380-410	4	(230-410 ft bis)	7.90	24.7	175
410-440	5		8.00	24.4	186
470-500	7	] [	8.30	25.5	157
500-530 <sup>a</sup>	8		8.20	26.5	156
530-560	9		8.10	25	164
560-590a	10	] [	8.10	25.1	176
590-620	11	OCAPlpz	8.20	25.9	167
620-650	12	(410-800 ft bls)	8.10	26.2	166
650-680	13	] [	8.10	25.9	170
680-710	14	] [	8.10	26.1	170
710-740	15	] [	8.00	26.2	165
740-770	16	] [	8.20	26.4	168
770-800a	17		8.10	26.5	159
800-830 <sup>a</sup>	18		8.10	26.5	174
830-860 <sup>a</sup>	19	] [	8.30	26.5	168
860-890 <sup>a</sup>	20	] [	8.20	26.8	160
890-920	21	] [	8.00	26.7	162
920-950	22	APPZ	8.20	26.8	161
960-990	23	(800-1,113 ft bls)	8.00	26.8	172
990-1,020	24		8.30	27.4	160
1,020-1,050	25		8.20	27.1	158
1,050-1,080	26		8.30	27	164
1,080-1,110	27		8.30	27.1	170
1,110-1,140	28		8.00	26.9	183
1,140-1,170	29	] [	8.00	27.3	240
1,170-1,200	30	] [	7.80	27.2	354
1,200-1,230	31	] [	7.90	27.2	305
1,230-1,260	32	MCU_I	7.90	27.4	334
1,260-1,290	33	(1,113-1,410  ft bls)	8.00	27.8	379
1,290-1,320	34		7.80	27.4	416
1,320-1,350	35		7.90	27.1	402
1,350-1,380	36		8.00	27.7	433
1,380-1,410 <sup>a</sup>	37		7.80	27.5	427

Table H-1. Continued.

Sample Depth	Packer	Uvdrastratioranhia		Field Parameters	
(ft bls)	Test #	Hydrostratigraphic Unit	рН	Temperature (°C)	Specific Conductance (μS/cm)
1,410-1,440	38		7.60	27.6	843
1,440-1,470 <sup>b,c</sup>	39a		7.90	27.4	464
1,440-1,470°	39b		7.80	27.4	679
1,470-1,500 <sup>d</sup>	40		7.90	27.6	717
1,500-1,530	41		7.90	27.4	848
1,530-1,560	42		8.00	27.8	906
1,560-1,590	43	LFA-upper (1,410-1,833 ft bls)	7.80	27.9	1,022
1,590-1,620	44	(1,410 1,033 11 013)	8.00	28.4	1,124
1,650-1,680	46		8.00	27.3	1,108
1,710-1,740	48		7.90	28.4	1,147
1,740-1,770	49		7.80	28.7	1,097
1,780-1,810	50		7.80	28.8	1,138
1,810-1,840	51		8.00	28.8	1,161
1,960-2,000	56	GLAUClpu	7.80	28.5	1,151

 $<sup>^{\</sup>circ}$ C = degrees Celsius;  $\mu$ S/cm = microsiemens per centimeter; APPZ = Avon Park permeable zone; ft bls = feet below land surface; GLAUClpu = low-permeability glauconitic marker unit; LFA-upper = upper-permeable zone of the Lower Floridan aquifer; MCU\_I = middle confining unit I; OCAPlpz = Ocala–Avon Park low-permeability zone; UFA-upper = upper-permeable zone of the Upper Floridan aquifer.

<sup>&</sup>lt;sup>a</sup> Potentially unreliable: Ion-balance error is above the threshold for acceptance.

<sup>&</sup>lt;sup>b</sup> Unreliable: Included for comparison purposes.

<sup>&</sup>lt;sup>c</sup> Two samples were collected from the test 39 interval. Sample 39a was collected after three borehole volumes had been purged. Due to an inversion in specific conductance between tests 38 and 39, a second sample (sample 39b) was collected after 25 borehole volumes had been pumped from the test interval.

<sup>&</sup>lt;sup>d</sup> Potentially unreliable: Very low purge volume may have resulted from mixing of groundwater and drilling fluids.

# APPENDIX I: CHARGE BALANCE ERROR SUMMARY

Table I-1. Charge balance error summary.

			T -1	Charge 1	Balance Error	Summary		
Sample Depth (ft bls)	Packer Test #	Hydrostratigraphic Unit	Laboratory TDS (mg/L)	Sum of Anions (meq/L)	Sum of Cations (meq/L)	Charge Balance Error (%)		
320-350	2	LIEA	96	1.75	1.92	4.73%		
350-380	3	UFA-upper (250-410 ft bls)	103	1.76	1.97	5.61%		
380-410	4	(250 110 10 015)	99	1.81	2.21	9.95%		
410-440	5		104	1.83	2.12	7.38%		
470-500	7		96	1.67	1.70	0.98%		
500-530 <sup>a</sup>	8		108	1.71	2.17	12.06%		
530-560	9		109	1.75	1.98	6.19%		
560-590 <sup>a</sup>	10		102	1.75	2.15	10.24%		
590-620	11	OCAPlpz	105	1.67	1.77	3.02%		
620-650	12	(410-800 ft bls)	110	1.64	1.72	2.30%		
650-680	13		104	1.70	1.77	2.05%		
680-710	14		99	1.71	1.77	1.73%		
710-740	15		99	1.65	1.77	3.52%		
740-770	16		106	1.68	1.88	5.64%		
770-800a	17		94	1.64	2.19	14.35%		
800-830 <sup>a</sup>	18		100	1.79	3.00	25.12%		
830-860a	19		97	1.74	2.19	11.58%		
860-890 <sup>a</sup>	20		108	1.66	2.57	21.61%		
890-920	21		82	1.64	1.73	2.51%		
920-950	22	APPZ	88	1.62	1.70	2.44%		
960-990	23	(800-1,113 ft bls)	92	1.73	1.79	1.88%		
990-1,020	24		84	1.57	1.79	6.48%		
1,020-1,050	25		86	1.56	1.69	3.95%		
1,050-1,080	26		98	1.63	1.75	3.66%		
1,080-1,110	27		95	1.65	1.84	5.25%		
1,110-1,140	28		104	1.80	1.94	3.60%		
1,140-1,170	29		151	2.40	2.49	1.99%		
1,170-1,200	30		247	3.58	3.78	2.74%		
1,200-1,230	31		202	3.07	3.57	7.61%		
1,230-1,260	32	MCU_I	231	3.36	3.50	1.97%		
1,260-1,290	33	(1,113-1,410  ft bls)	281	3.85	4.14	3.67%		
1,290-1,320	34		292	4.22	4.48	2.96%		
1,320-1,350	35		296	4.11	4.56	5.09%		
1,350-1,380	36		304	4.24	4.57	3.70%		
1,380-1,410 <sup>a</sup>	37		308	4.21	5.25	10.95%		

Table I-1. Continued.

			Laboratory	Charge 1	Balance Error	Summary
Sample Depth (ft bls)	Packer Test #	Hydrostratigraphic Unit	TDS (mg/L)	Sum of Anions (meq/L)	Sum of Cations (meq/L)	Charge Balance Error (%)
1,410-1,440	38		626	8.78	9.40	3.43%
1,440-1,470 <sup>b,c</sup>	39a		386	5.31	5.79	4.30%
1,440-1,470°	39b		498	6.81	7.31	3.54%
1,470-1,500 <sup>d</sup>	40		534	7.54	7.93	2.49%
1,500-1,530	41		634	9.10	9.01	0.47%
1,530-1,560	42		662	9.81	10.61	3.92%
1,560-1,590	43	LFA-upper (1,410-1,833 ft bls)	628	10.13	9.89	1.22%
1,590-1,620	44	(1,410-1,033 11 013)	628	10.28	10.54	1.24%
1,650-1,680	46		641	10.29	10.78	2.31%
1,710-1,740	48		663	10.26	10.72	2.22%
1,740-1,770	49		623	10.21	10.06	0.75%
1,780-1,810	50		650	10.58	10.72	0.66%
1,810-1,840	51		656	10.25	11.06	3.79%
1,960-2,000	56	GLAUClpu	647	10.23	10.77	2.57%

APPZ = Avon Park permeable zone; ft bls = feet below land surface; GLAUClpu = low-permeability glauconitic marker unit; LFA-upper = upper-permeable zone of the Lower Floridan aquifer; MCU\_I = middle confining unit I; meq/L = milliequivalents per liter; mg/L = milligrams per liter; OCAPlpz = Ocala—Avon Park low-permeability zone; TDS = total dissolved solids; UFA-upper = upper-permeable zone of the Upper Floridan aquifer.

<sup>&</sup>lt;sup>a</sup> Potentially unreliable: Ion-balance error is above the threshold for acceptance.

<sup>&</sup>lt;sup>b</sup> Unreliable: Included for comparison purposes.

Two samples were collected from the test 39 interval. Sample 39a was collected after three borehole volumes had been purged. Due to an inversion in specific conductance between tests 38 and 39, a second sample (sample 39b) was collected after 25 borehole volumes had been pumped from the test interval.

<sup>&</sup>lt;sup>d</sup> Potentially unreliable: Very low purge volume may have resulted from mixing of groundwater and drilling fluids.

# APPENDIX J: GROUNDWATER ANALYTICAL RESULTS

				Sample	Sample																			
				Upper	Lower	Sample				Specific													10	
		a	Packer	Depth, ft	Depth, ft	Collection Date		Field pH,	l '	Conductivity,	TDS,	Chloride,	Bicarbonate,	Sulfate,	Sodium,	Magnesium,	Calcium,	Potassium,	Strontium,	Silica,	Hardness,	Alkalinity,	δ <sup>18</sup> O, per	δ <sup>2</sup> H, per
Sample ID	Lab ID	Station	Test #	bls	bls	and Time	°C	pH units	pН	μS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mille	mille
P115374-3	75215003	POF-31	2	320	350	6/3/20 10:50	24.8	7.90	8.11	171	96	5.0	92.66	4.3	3.6	6.3	23.8	0.9	1.56		85.4	76	-2.3	-11.5
P115374-4	75215004	POF-31	3	350	380	6/3/20 16:35	24.7	7.90	8.12	174	103	4.9	93.88	4.2	3.6	7.0	23.6	0.9	1.70		87.7	77	-2.2	-12.5
P115375-3	75216003	POF-31	4	380	410	6/4/20 11:50	24.7	7.90	8.15	175	99	5.0	96.32	4.4	3.6	7.0	28.3	1.0	1.70		99.7	79	-2.2	-12.6
P115376-3	75217003	POF-31	5	410	440	6/5/20 10:40	24.4	8.00	8.14	186	104	5.4	95.10	5.7	3.8	8.2	24.2	1.0	2.02		93.9	78	-2.3	-11.7
P115378-3	75219003	POF-31	7	470	500	6/10/20 8:50	25.5	8.30	8.08	157	96	4.5	87.78	4.9	3.0	7.6	17.6	0.9	1.85		75.0	72	-2.4	-11.9
P115378-4	75219004	POF-31	8	500	530	6/10/20 16:20	26.5	8.20	8.09	156	108	4.4	90.22	4.9	3.0	7.7	26.8	1.0	1.89		98.8	74	-2.4	-12
P115377-3	75218003	POF-31	9	530	560	6/11/20 14:35	25.0	8.10	8.07	164	109	4.8	92.66	4.4	3.4	7.1	23.6	0.9	1.81		88.2	76	-2.5	-12.5
P115379-3	75220003	POF-31	10	560	590	6/12/20 10:50	25.1	8.10	8.21	176	102	4.8	92.66	4.6	3.4	7.2	26.9	0.9	1.81		96.8	76	-2.3	-12.8
P115380-3	75221003	POF-31	11	590	620	6/15/20 16:50	25.9	8.20	8.21	167	105	4.9	86.56	5.2	3.2	7.8	18.3	0.8	2.31		77.8	71	-2.2	-10.6
P115381-3	75222003	POF-31	12	620	650	6/16/20 12:50	26.2	8.10	8.17	166	110	5.0	85.35	4.8	3.2	7.5	17.8	0.7	2.33		75.2	70	-2.1	-10.0
P115382-3	75223003	POF-31	13	650	680	6/17/20 9:00	25.9	8.10	8.19	170	104	5.3	87.78	5.5	3.4	7.1	19.2	0.7	2.83		77.3	72	-2.1	-9.8
P115382-4	75223004	POF-31	14	680	710	6/17/20 15:45	26.1	8.10	8.22	170	99	5.2	87.78	5.8	3.4	6.6	19.2	0.7	4.29		75.4	72	-2.2	-9.9
P115383-3	75224003	POF-31	15	710	740	6/18/20 12:40	26.2	8.00	8.26	165	99	4.9	85.35	5.6	3.2	6.4	20.0	0.8	3.87		76.6	70	-2.2	-10.1
P115384-3	75225003	POF-31	16	740	770	6/19/20 9:51	26.4	8.20	8.24	168	106	4.9	86.56	6.0	3.5	6.5	21.4	0.8	4.63		80.3	71	-2.3	-10.3
P115385-3	75226003	POF-31	1 /	770	800	6/22/20 15:10	26.5	8.10	8.20	159	94	4.4	89.00	2.7	3.0	6.4	28.9	0.8	2.90	11.0	98.6	73	-2.1	-10.3
P115386-3	75227003	POF-31	18	800	830	6/23/20 17:00	26.5	8.10	8.24	174	100	4.4	98.76	2.4	3.5	8.6	41.2	0.9	2.31	11.0	138.0	81	-2.3	-10.7
P115387-3 P115388-3	75228003	POF-31 POF-31	20	830 860	860	6/24/20 15:25	26.5 26.8	8.30	8.35 8.29	168	97	4.4	96.32	1.6	3.1	9.6	26.4	0.8	2.17	10.7	99.2	79	-2.1	-10.4 -10.2
P115388-3	75229003 75230003	POF-31 POF-31	-	890	890 920	6/25/20 15:15 6/29/20 16:40	26.8	8.20 8.00	8.29	160 162	108 82	4.4 4.4	91.44 90.22	1.6	2.9	6.8	31.8	0.7	1.81 1.82		118.9 77.1	75 74	-2.0 -2.2	-10.2
P115389-3	75231003	POF-31	21	920		6/30/20 17:40	26.7	8.20	8.23		88		89.00	1.8			19.6 19.3		1.67					-10.2
			22	960	950	7/17/20 9:15	26.8		8.40	161		4.4	96.32	1.6	3.0	6.6		0.8			75.7	73 79	-2.1	-10.9
P115391-3 P115392-3	75232003 75233003	POF-31 POF-31		<b>.</b>	990 1,020	7/20/20 15:35	27.4	8.00 8.30	8.38	172	92	4.3	96.32 87.78	0.7	3.3	7.4	19.8	0.8	1.25 1.76		79.8 80.2		-2.1 -1.9	-10.2 -9.6
			24	990	1		-		-	160	84	4.3			2.9	7.4 6.7		0.7				72 70	-1.9	-9.6 -9.7
P115393-3 P115394-3	75234003 75235003	POF-31 POF-31	25 26	1,020 1,050	1,050 1,080	7/21/20 13:40 7/23/20 9:15	27.1 27.0	8.20 8.30	8.25 8.28	158 164	98	4.4 4.4	85.35 84.13	1.8	2.9	6.8	19.4 20.0	0.6	1.15 2.21		76.1 78.0	69	-2.0	-10.2
P115394-3	75236003	POF-31	27	1,030	1	7/24/20 9:25	27.0	8.30	8.30	170	95	4.4	85.35	6.1	3.0	7.6	20.0	0.7	2.21		81.4	70	-2.3	-10.2 -9.9
P115395-3	75237003	POF-31	28	1,110	1,110 1,140	7/24/20 9.23	26.9		8.32	183	104	4.4	86.56	12.4		8.3	19.4	0.7	5.98		82.8	70	-2.2	-10.5
P115390-3	75237003	POF-31	29	1,110	1,170	7/28/20 14:20	27.3	8.00	8.20	240	151	4.6	85.35	41.6	2.9 3.1	10.3	22.9	0.8	14.99		99.7	70	-2.2	-10.3
P115397-3	75239003	POF-31	30	1,170	1,170	7/29/20 12:30	27.2	7.80	8.06	354	247	4.8	82.91	99.9	3.1	15.0	31.3	0.9	35.93		140.0	68	-2.3	-10.1
P115398-3	75240003	POF-31	31	1,170	1,230	7/30/20 9:40	27.2	7.80	8.13	305	202	4.8	85.35	73.6	3.1	14.9	31.9	0.9	25.82		141.2	70	-2.3	-9.6
P115399-4	75240003	POF-31	32	1,230	1,260	7/30/20 16:50	27.4	7.90	8.12	334	231	5.3	85.35	87.0	3.4	13.1	29.8	1.0	33.05		128.5	70	-2.2	-8.1
P115400-3	75241003	POF-31	33	1,260	1,290	8/3/20 14:15	27.8	8.00	8.10	379	281	5.5	86.56	109	3.6	15.9	36.7	1.1	35.47		157.2	71	-2.2	-11.5
P115401-3	75242003	POF-31	34	1,290	1,320	8/4/20 14:35	27.4	7.80	8.02	416	292	5.5	86.56	127	3.8	17.2	41.9	1.2	33.79		175.5	71	-2.1	-10.1
P115402-3	75243003	POF-31	35	1,320	1,350	8/5/20 15:45	27.1	7.90	7.97	402	296	5.4	85.35	123	3.8	17.6	42.4	1.2	34.65		178.6	70	-2.1	-10.5
P115403-3	75244003	POF-31	36	1,350	1,380	8/6/20 16:00	27.7	8.00	8.01	433	304	5.5	87.78	127	3.9	18.3	42.2	1.2	32.83		181.0	72	-2.1	-9.9
P118409-3	76671003	POF-31	37	1,380	1,410	8/10/20 18:00	27.5	7.80	8.06	427	308	5.3	91.44	123	4.2	21.8	49.4	1.2	33.71		213.1	75	-2.1	-10.5
P118410-3	76672003	POF-31	38	1,410	1,440	8/11/20 15:30	27.6	7.60	7.94	843	626	6.1	87.78	344	4.7	44.1	99.9	1.6	23.26		431.0	72	-1.9	-9.0
P118413-3	76675003	POF-31	39	1,440	1,470	8/13/20 6:30	27.4	7.80	8.06	679	498	5.6	86.56	251	4.2	33.5	76.5	1.4	22.11		329.0	71	-1.9	-6.3
P118412-3	76674003	POF-31	40	1,470	1,500	8/13/20 16:00	27.6	7.90	7.73	717	534	6.6	85.35	286	4.5	39.2	78.4	1.6	23.90		357.2	70	-2.0	-8.8
P121428-3	78025003	POF-32	41	1,500	1,530	12/11/20 11:00	27.4	7.90	7.76	848	634	13.7	87.78	349	7.6	45.4	88.3	1.8	21.16		407.4	72	-1.9	-5.6
P121429-3	78026003	POF-32	42	1,530	1,560	12/14/20 15:05	27.8	8.00	7.95	906	662	25.9	93.88	362	14.4	48.5	109.7	1.9	20.17		473.7	77	-1.8	-5.7
P121430-3	78027003	POF-32	43	1,560	1,590	12/15/20 13:45	27.9	7.80	7.89	1,022	628	123	96.32	244	65.5	37.4	69.7	3.3	17.15		328.2	79	-1.7	-6.0
P121431-3	78028003	POF-32	44	1,590	1,620	12/16/20 11:50	28.4	8.00	8.01	1,124	628	180	101.19	170	103.9	31.9	61.4	4.5	9.15		284.6	83	-1.6	-6.2
P121432-3	78029003	POF-32	46	1,650	1,680	12/18/20 9:50	27.3	8.00	8.07	1,108	641	177	106.07	171	101	33.5	66.5	4.5	8.43		304.1	87	-1.6	-5.8
P121433-3	78030003	POF-32	48	1,710	1,740	1/5/21 17:00	28.4	7.90	7.96	1,147	663	180	99.98	170	104.1	33.2	62.6	4.4	9.72		293.2	82	-1.6	-5.8
P121434-3	78031003	POF-32	49	1,740	1,770	1/6/21 15:00	28.7	7.80	7.96	1,097	623	179	99.98	169	96.6	31.5	58.9	4.2	9.26		276.8	82	-1.7	-5.8
P121435-3	78032003	POF-32	50	1,780	1,810	1/7/21 16:50	28.8	7.80	7.92	1,138	650	190	103.63	169	107.8	32.4	60.6	4.5	9.67		284.8	85	-1.7	-5.9
P121436-3	78032003	POF-32	51	1,810	1,840	1/11/21 12:30	28.8	8.00	8.04	1,161	656	191	103.63	152	112.4	33.2	61.8	5.0	9.85		291.2	85	-1.6	-6.0
P121437-3	78034003	POF-32	56	1,960	2,000	1/19/21 14:55	28.5	7.80	7.71	1,151	647	198	97.54	146	109.9	31.7	63.1	4.2	5.09		288.2	80	-1.7	-6.3
		- J	= Not dete							-,	/			7		1		• • •						

-- = Not detected

# APPENDIX K: CORE LABS SAMPLE PHOTOGRAPHS



Depth [ft bls]: 642.2 – 642.7

Formation:

Lithology: Limestone –Wackestone

Hydro. Unit: OCAPlpz

Packer Test: #12 (620-650 ft bls)

 $k_h \sim 2.8 \text{ ft/d}$ 

Core Lab Result:  $k_h = 0.12 - 0.15 \text{ ft/d}$ 



Depth [ft bls]: 704.8-705.2 ft bls

Formation:

Lithology: Limestone –Wackestone

Hydro. Unit: OCAPlpz

Packer Test: #14 (680-710 ft bls)

 $k_h \sim 2.6 \text{ ft/d}$ 

Core Lab Result:  $k_h = 1.66 \text{ ft/d}$ 



Sample Depth [ft bls]: 1277.7 - 1278 ft bls

Formation:

Lithology: Dolostone

Hydro. Unit: MCU

Packer Test: #33 (1260-1290 ft bls)

 $k_h \sim 0.96 \text{ ft/d}$ 

Core Lab Result:  $k_h = 0.29 \text{ ft/d}$ 



Sample Depth [ft bls]: 1291-1291.5 ft bls

Formation:

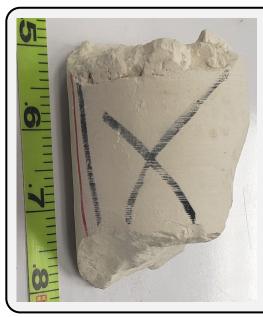
Lithology: Dolomitic-Limestone

Hydro. Unit: MCU

Packer Test: #34 (1290-1320 ft bls)

 $k_h \sim 2.19 \text{ ft/d}$ 

Core Lab Result:  $k_h = 0.21 \text{ ft/d}$ 



Sample Depth [ft bls]: 1310.8-1311.1 ft bls

Formation:

Lithology: Dolomitic-Limestone

Hydro. Unit: MCU

Packer Test: #34 (1290-1320 ft bls)

 $k_h \sim 2.19 \text{ ft/d}$ 

Core Lab Result:  $k_h = 0.01 \text{ ft/d}$ 



Sample Depth [ft bls]: 1891.7-1892 ft bls

Formation:

Lithology: Limestone-Wackestone

Hydro. Unit: GLAUClpu

Packer Test: #53 (1870-1900 ft bls)

 $k_h \sim 1.6 \text{ ft/d}$ 

Core Lab Result:  $k_h = 0.02 \text{ ft/d}$ 



Sample Depth [ft bls]: 1984-1984.6 ft bls

Formation:

Lithology: Limestone-Wackestone

Hydro. Unit: GLAUClpu

Packer Test: #56 (1960-2000 ft bls)

 $k_h \sim 1.6 \text{ ft/d}$ 

Core Lab Result:  $k_h = 0.02 \text{ ft/d}$