Sample Study
1923

16-2-1E

June Westfield Oil & Gas Corp. SW SW NW Elev. 1427
#1 Confil

WELL CUTTINGS SUBMITTED BY

M. E. Baisch, Haddam Kansas

WASHINGTON COUNTY

from 3065 ft. depth

Sample almost entirely composed of crystalline limestone, approximately 95% being soluble. A small amount of light green-gray shale particles are also present, these apparently from shavings above. About one half of 1% of the material is magnetic and underthe microscope shows it to be largely fine slivvers and particles apparently chipped off of the drill. Some are rusted and partially decomposed.

The crystalline limestone has been slightly mineralized, some Pyrite and Marcasite and Galena are present.

It is possible that the calcite is in the form of a vein filling or a large zone which has been crystallized and partially mineralized.

By M. E. Baish

16-2-1E
SW SW NW

#2 CUTTINGS FROM THE WESTFIELD OIL AND GAS WELL, #1 Canfield
NEAR HADDAM, KANSAS

Depth 3400-3425 ft.
Also again at 3458-3498

This material is very similar to that from the lower depth (3458-3570) just described. The main differences appear in more rounding of the grains and possibly a greater percent of magnetite. The color is darker, tending more towards a reddish brown. The amount of shale is also greater.

16-2-1E
SW SW NW

By M. E. Baish

CUTTINGS FROM THE WESTFIELD
OIL AND GAS WELL NEAR HADDAM, KANSAS #1 Canfield

Depth 3498-3570

A medium grained quartz sand, light brown to reddish brown, only a small fraction soluble.

Under a high power microscope the material appears to be composed chiefly of quartz with some magnetite. Also considerable magnetic material which has been derived (possibly) from the drill bit or casing. In some cases the magnetite is still joined to the quartz, this magnetite appearing in varying degrees down to a mere speck of magnetite, depending in part upon the size of the quartz of the grain; the ratio of the quartz to magnetite being roughly 5:1.

The grains show varying degrees of rounding, frosting and pitting which applies to both the quartz and the magnetite where found together. When the grain is abraded only in part, the other surfaces are clear and show fresh fracturing either from ~~a~~ late breaking during transport and just prior to deposition or at time of impact by the drill. In many cases what appeared to be fresh angular fragments will show one small portion or side very much frosted and pitted which is apparently the outside portion of a larger original grain. The reddish brown color of this sand is due almost entirely to iron staining and in part to decomposing magnetite which in the present condition would be termed limonite. There are also some few reddish and brown to black silicates. These are rare and correspond in physical appearance to the quartz. No micas, fresh feldspar or hornblends were observable.

From the evidence given above there is little doubt but what the material in its present state belongs to a sedimentary formation, and it was so reported. The absence of the distinct igneous features together with the presence of the distinctive rounding, frosting and pitting of the grains seems sufficient for this conclusion.

ACT/LB

16 - 2 - 1 -
SW SW NW

Westfield Oil & Gas Corporation's #1 Canfil
well near Haddam, Kansas Washington County.

Sample submitted by M. E. Baish
Depth 3885 feet.

This sample is composed chiefly of angular and fresh quartz grains, being portions of crystalline material. There is however approximately 5%, more or less, of well worn rounded and pitted quartz material. There are some much weathered and altered feldspars present. Micas are absent. There are some other large ferro-magnesium minerals present altho not readily identifiable. There is a comparatively large amount of red earthy or shaly appearing material which has the characteristics of hematite, with a white flaky mineral much like Sericite. The hematite forms probably 15% of the total sample. Approximately 15% of the material is magnetic and on separation with a magnet, and examination under the microscope showed it to be material derived from the drilling bit, small chips and ~~shelly~~ scaly particles of steel. There is present also a small amount of the mineral magnetite.

The hematite is characteristically [illegible]

The general color of this sample is a dark reddish brown to almost a black but after magnetic separation was made the color was much lighter being a lighter brown to reddish brown, the reddish color being due largely to the presence of the mineral hematite plus the iron staining over the grains of quartz, particularly the rounded ones, and the general weathered condition of the other minerals. All of the material was very fine grained with the possible exception of the steel chips which were larger than the average of the material in the sample. The weathered and altered condition of this material added to the presence of some rounded and pitted quartz grains and the absence of fresh feldspars and micas indicate clearly that the specimen was not derived from a fresh or unaltered body of granite, altho the constituents indicate that it is very closely related to the intrusive material and may be the weathered zones lying above the main mass of granite or a very slightly transported material. That this material was slightly reworked by water is indicated in part by the absence of mica and the presence of the small percentage of rounded water worn material.

After examination of this sample it was recommended that drilling on the well be discontinued and the hole abandoned as possibilities of oil or gas production out of such a rock at a depth of 3885 feet, in this area, were practically out of the question.

A. C. Tester

A.C. Tester

THE UNIVERSITY OF KANSAS
STATE GEOLOGICAL SURVEY

FRANK C. FOLEY
State Geologist and Director

WILLIAM W. HAMBLETON
Assoc. State Geologist and Assoc. Director

Sec. 16 - T. 25 - R. 1E.
SW¼ NW¼ (SW SW NW.
Westfield Oil & Gas Corp, # 1 Confid
Haddam, Kansas

Depth 3885 feet

Basish -

Sample shows considerable magnetetic material - largely steel cuttings from drill bit - some magnetite -

Quartz -
Chiefly angular and fresh altho there is probably 5%± of worn quartz - rounded and frosted ?

Feldspars -
Some present but appear somewhat weathered -

Dark ferro-magn minerals present also -

Micas -
None

Hematite - Considerable about 1% -

16-2S-1E
Washington County
SW SW NW

Westfield O. & G. Corp.
#1 Canfil

Telegram 7/27/[illegible]

W. E. Kuish
Westfield Oil & Gas Co.
Haddam Kansas - Sent Collect 10 5/a

Sample from 4000 feet is an impure Sand of Cambrian or lower Ordovician age - Can see no chance for production and do not recommend purchase of new equipment for deeper drilling - Log and report sent to Washburne - Can you furnish cuttings for entire well - Letter follows

R. C. Lester

16-2-16

WESTFIELD OIL & GAS CORPORATION

NEW YORK OFFICE
15 WILLIAM STREET

HADDAM, KANSAS, May 16, 1923

Dept. of Mineralogy,
Kansas University,
Lawrence, Kansas.

Gentlemen:

The enclosed sample is from a formation which we encountered in our test well at a depth of 3065 feet in Washington County Kansas. We are unable to determine definitely just what it is and we would appreciate having your opinion on the matter.

The structure is overlaid with a white lime of about one hundred feet in thickness. Above the lime we had seventy feet of white fine sand. The enclosed specimen looks like some kind of lime but there seems to be other cuttings mixed with it which upsets our judgment.

We have no other wells near here and of course we cannot make comparison with structures encountered in this part of the state. If you will analyze this sample and let us have your opinion we will appreciate it very much.

Very sincerely yours,

M. E. Baish

Supt.

16-2-12

June 23, 1923

Mr. M. E. Belsh, Supt.
Westfield Oil & Gas Corporation
Haddam, Kansas

Dear Sir:

The reply to your letter of May 16th has been delayed by temporary suspension of the activities of the survey. However, I have been able to make examination of the sample which you submitted and am pleased to inform you that the sample appears to be as follows:

Approximately 95% of crystalline limestone the balance being insoluble impurities and in part filings from the steel drilling bit, and material knocked off of the casing. Apparently the well has passed through possibly a vein or zone of slightly mineralised crystalline limestone.

As this well is located in a new territory, I would appreciate receiving a complete log as you have it to date. The information would be strictly confidential of course and would be used only in the scientific study of the underground structures and rocks of that part of the state.

Thanking you for your cooperation in this matter, and trusting that I may hear from you in the near future, I remain

Yours very truly,

Geologist

16-2-16

WESTFIELD OIL & GAS CORPORATION

NEW YORK OFFICE
15 WILLIAM STREET

HADDAM, KANSAS, June 26,1923

Mr.Raymond C.Moore,
State Geologist,
Lawrence,Kansas:

We are in receipt of your letter of June 23rd giving the results of the examination of the sample submitted May 16th. We appreciate your report and will be glad to furnish you with any additional information desired.

Under separate cover I am forwarding two more samples of sands encountered since the sample of May 16th. The reddish brown sand was found between 3400 and 3425 and again between 3450 and 3498. The grey sand was found at 3498 and we are still in it at 3570 ft. With the former we found some showings of red shale or red rock as the drillers term it.

We are wondering if if we are getting near the granite and if you will examine these specimens and wire your findings at our expense it will be greatly appreciated. If these sands should be granite cuttings we would of course not continue operations but if they are merely sand formations we intend going just as deep as possible. Word from you at once would spare us much expense in case it should be inadvisable to go deeper. If we continue we will have to purchase a new 5000-ft drilling line as well as a new string of tools and we are not anxious to do this unless the prospects warrant such an outlay of money.

I am also sending a complete log of the well. If this will be of any help in your work we are more than pleased to furnish you with a copy and will forward additional information as we find it at greater depths. I note that you will treat this information confidentially. We are also drilling another test about four miles southwest of this one just on the line between Washington and Republic Counties . I will forward a log of this well at a later date. It is drilling at 650 feet at present.

Trusting I may have the honor of an early reply by wire, I am
Very sincerely yours,

M. E. Bausa
Field Supt.

16 - 2 - 1E

June 28, 1923

Mr. M. E. Balish
Westfield Oil & Gas Co.
Haddam, Kansas

Dear Sir:

Your letter of June 26th with additional well cuttings has been received. I have made an examination of these cuttings and can report that you have not encountered the granite at the depths from which these cuttings were derived. The material is distinctly quartz grains of a sedimentary formation. There is, however, a small amount of an iron mineral and also some shaly material. A microscopic examination shows that the sand grains are in a large part well rounded, frosted and pitted, which indicates clearly that they had undergone considerable wear, probably by water, prior to deposition as a sediment. The color of the sand is due almost entirely to iron stain.

You stated that you were sending a complete log of the well but this has not been received up to this time. For information further than what I have given you, it will be necessary to await receipt of this log. In this case, it might be possible for me from this point to advise at about what formation you are drilling in. I will be greatly interested in receiving this log as well as the log of the well which you are drilling on the Washington-Republic County line.

As already stated, without making a study of the complete log of this well it is not possible to determine the formation in which you are drilling at the present time. Hence it is not possible to advise regarding depth to which it might be necessary for

over

16-2-1E

June 28, 1923

Mr. M.E. Baish
Westfield Oil & Gas Co
Hadlam, Kansas

you to drill to make an adequate test. The relationships of the sedimentary rocks to the granites elsewhere in the state are such that a well might pass abruptly and without warning from any of the possible formations directly into the granite. The difficulty of forcasting granite is especially true in a wild cat area.

Trusting that this information may be of help to you, and that I will receive further date on this well, I remain

Yours very truly,

Geologist

JCF/LB

16-2-12

WESTFIELD OIL & GAS CORPORATION

NEW YORK OFFICE
15 WILLIAM STREET

HADDAM, KANSAS, July 17,1923

Mr.Raymond C.Moore,
State Geologist,
Lawrence,Kansas.

Dear Sir:

The enclosed sample is from the formation encountered at 3885 feet. This is very hard and batters our bits so that we can make but a foot or two a day. It looks like we are on granite. If you will analyze this specimen and let us know the results immediately it will be very much appreciated.

The complete log of the well may be had at any time. If I remember correctly the log I sent you included the different strata down to and including 3570 feet. I will complete the log to the present depth of 3885 and send you a copy if you desire it.

Very sincerely yours,

M E Baish

=1= Sec 16 - T. 2S. - R. 1E
SW c NW
16-2-1E

Haddam is in Washington County

July 20, 1923

Mr. M. E. Baish
Westfield Oil and Gas Corporation
Haddam, Kansas

Dear Mr. Baish:

Your letter of the 17th containing sample taken at a depth of 3885 feet in your well at Haddam has been received.

I have made a careful examination of this sample and find that it may be classified as a weathered granite or an arkose derived from a granite. That it is not a fresh granite in place is to be seen by the absence of entirely fresh minerals which usually accompany a fresh granite, and also by the presence of numerous small grains of quartz which are well rounded and pitted, altho this latter condition is only present to about 5% of the total grains. There is also included in the sample a very large percentage of magnetic material which appears under the microscope to be largely filings of steel and magnetic iron and from their nature have the characteristics of material worn off of a drilling bit. There is also a small amount of the mineral magnetite. Associated also with the sample is considerable shaly-like iron mineral known as hematite. The presence of this mineral, as well as other indications in the sample tend to indicate that the material has suffered some change and this formation may be one which overlies directly the granatic mass.

As you no doubt recall, in your letter of June 26th, you stated that you were sending a complete log of this well but in my reply of the 28th I called your attention to the fact that the log had not been received but that we were very anxious and desirous of obtaining same. In your letter of the 17th inst. you again refer to the complete log which you had sent but to this date we have not received it and it has apparently been mislaid in mail service. Would it be possible for you to have a duplicate copy made of the complete log and send to this office, or if that is not convenient, if you will mail us your log we will make a copy of it, returning the original to you at once. With the aid of this log, we will be able to make a much more detailed and certain study of the formation which you have penetrated, and as a result will be able to give you a more definite answer regarding your prospects. However, from the study of the sample just reviewed it would appear that even tho you may not actually have penetrated the granite, the character of the rock in which you are drilling is such that production of oil or gas is practically out of the question, and it would be advisable to suspend drilling operations and abandon the well.

over

16-25.-1E

Letter to:
M.E Baish
July 20, 1923

-2-

I hope that you will be able to send the complete log with location, and other data in the near future, and if I can be of further service to you will be glad to cooperate with you.

Yours very truly,

Geologist

ACT/LB

WESTFIELD OIL & GAS CORPORATION

NEW YORK OFFICE
15 WILLIAM STREET

16-2-16
ANSWERED JUL 1923

HADDAM, KANSAS, July 23,1923

Mr.A.C.Lester,
State Geological Survey,
Lawrence,Kansas.

Dear Mr.Lester:

Your letter of the 20th is at hand and I appreciate very much the splendid way in which you are helping us.

I am at a loss to understand what became of the log which was sent you some time ago. I enclosed it with the letter which you seem to have received. Anyway,I am forwarding you my copy from which you can make a copy and then please return to me. I have not time to make you a new copy and I am anxious to have this in your hands before we finally decide to abandon the well. Quite naturally after spending as much as we have on the well we do not want to give it up as long as there is any chance of finding oil.

I am also enclosing a sample of the cutting from 3995-4000 feet. If,after examining this specimen carefully,you still are of the opinion that it is useless to continue drilling,please wire me at my expense so that operations may be suspended immediately. If we continue we will have to buy a new string of tools and a new drilling line and we do not want to go to this expense if you think the chances are against finding oil.

Trusting I may have the honor of an early reply,I am

Very sincerely yours,

W. E. Davis

P.S.
Can you give me any information concerning the laws governing the plugging of wells or perhaps you can refer me to the department that can give me the necessary instructions.

B

16-2-1E

July 27, 1923

Well
16-2-1E
See [illegible]

Mr. M. A. Baish
Westfield Oil & Gas Corp.
Haddam, Kansas

Dear Sir:

With reference to the sample which you submitted as cutting from your well at a depth of 4,000 feet, I wired you this morning collect as follows: "Sample from 4000 feet is an impure sand of Cambrian or lower Ordovician age. Can see no chance for production and do not recommend purchase of new equipment for deeper drilling. Log and report sent to Washburne. Can you furnish cuttings from entire well? Letter follows."

As stated above the sample shows the formation at the 4000 ft. depth to be one of sedimentary origin altho it has certain close relations to a weathered and altered granite zone. This sample is not essentially different from the sample which you submitted from a depth of 3885 feet. Altho both samples have certain characteristics which tend to emphasize their relation to a weathered granite zone, there are other characteristics which are indicative of a transported material and from this data it is safe to believe that the material is a formation deposited by water and in a stratified form.

A careful study of the log indicates that you have penetrated a very thick and massive sandstone member which I would judge has had characteristics similar to the sample which you submitted almost continuously below the 3400 ft. depth, with the exception of course of the 6-ft. zone of brown shale. After correlating the formations of the log from the surface down, I have concluded that this sandstone member is the representative of the lower Ordivician or Cambrian. Further drilling would no doubt reach the true granite in place within possibly 200-300 feet. As there is no other information available on the formations available at this great depth, in that territory, it is entirely hypothetical what the total thickness of the sandstone will be. However, if there is any oil or gas in any of the formations of that area, it should have appeared before now and I consider your test an adequate one. It may be possible of course that oil and gas is contained in the formations underlying Washington County and adjacent areas but that structural conditions were not favorable for your location.

According to your instructions in a wire of recent

date,

Mr. M.E. Barsh
Westfield Oil & Gas Corp.
Hadsam, Kansas

= 2 =

16-25-1E
July 27, 1923

ete, on receipt of your letter containing a log of the well, forwarded a copy to Mr. Chester W. Washburne of New York City nd at the same time gave him the results of the examination f the lower sands, as per accompanying carbon copy of my letter o him. Your copy of the well log accompanies this letter and wish to express my thanks and appreciation for this information. ould it be possible for you to furnish me with a complete set of uttings representing all of the different beds which you penetrated. f it is possible for you to do this, I would be glad to make the ecessary arrangements for handling same. It would be of considerable alue to the study of subsurface conditions in Kansas which this urvey has under way and expects to complete this winter, and if consistent with your policy, we would like very much to use the information.

With reference to your question concerning laws governing the closing of wells, you should take the matter up with the county clerk or county commissioners at Washington, who will make the necessary arrangements for the supervision of the plugging and pulling of casing. Section 4984 of the Kansas Statutes of 1915 covers this act and is apparently the extent of the law.

Trusting I may hear from you in the very near future,

I remain

Yours very truly,

Geologist

ACT/LB
Enc. 2

16-2-

July 27, 1923

SWc NW-16-2S,1E

The Westfield Oil & Gas Corp. well
in the NW¼ Sec. 16, Twp 2S, Range 1 E., [Wa]shington County
Sample of cuttings from 3995 -4000 ft. (Kans

This sample is essentially no different from the sample previously received and reported on from the 3885 ft. depth.

Microscopic examination: - The predominating grains of the sample are crystalline quartz chiefly angular and fresh, altho possibly 10-15% show some weathering and are pitted and honeycombed, being the result of solutions. About one half of these weathered grains show a small amount of rounding and frosting but this is not developed beyond an early stage, only a few of the grains having more than the edges and corners worn and rounded. One or two grains fairly well rounded were observed with accompanying frosting and pitting. The characteristic feature of the sample is the angularity of both the fresh and weathered grains. The rounding is characteristic of the larger grains, angularity of the smaller.

All of the material is more or less coated with an iron rust stain which gives to the sample a pinkish to reddish brown color.

Other minerals present are some light colored feldspars (?) tho these are very rare. Several small grains of magnetite, subangular, were noted. This is separate of course from the large amount of iron filings which are derived from the wear of the drilling bit and casing, all of which were magnetic. Hematite makes up possibly 2-3% of the entire sample. There are some large pieces 2-3 mm across, and a great amount of very small 1/10-1/100 mm across throughout the sample. A few grains of augite or hornblende were observed, some showing alterations, others being fresh but the corners and sides well smoothed and rounded. Chlorite or calc is also present, and in one or two cases being fairly large size and showing clearly alterations from hornblende and the presence of sericite. No micas were observed with certainty altho there may be one or two grains of muscovite present but no biotite.

From the characteristics of the above described material it was decided that this was without question a cutting from a sedimentary sandstone formation but that it had apparently a relatively close relationship to an igneous source.

After examining the sample, and a study of the well log, it was decided that this material represents a portion of a Cambrian sandstone. The log shows that a similar material was penetrated for approximately 600 feet. It was recommended that drilling be concluded and the well abandoned.

AGS

A C Foster