



Whiting Petroleum Corporation
and its wholly owned subsidiary
Whiting Oil and Gas Corporation

1700 Broadway, Suite 2300, Denver, CO 80290-2300
Phone: 303.837.1661 | FAX: 303.861.4023

Mr. Todd L. Holweger
DMR Permit Manager
Oil & Gas Division
Department of Mineral Resources
North Dakota Industrial Commission



May 28, 2015

Mr. Holweger:

Whiting Petroleum Corporation completed the acquisition of Kodiak Oil & Gas Corp. in December 2014. The acquisition of existing assets of Kodiak included the Kodiak Polar Buried Array, located in Williams County, North Dakota. This array is currently operated under two separate Geophysical Exploration Permits as follow;

- | | |
|---------------------|--|
| 1) Permit # 97-0235 | Kodiak Buried Polar Array dated 2/22/13 |
| 2) Permit # 97-0246 | Kodiak Scanlan Wells Extension dated 2/14/14 |

It is the request of Whiting that any changes necessary to the existing permitting to reflect the change in control be undertaken, and that the current bonding of the Array be changed to the existing Whiting Geophysical Exploration Bond No. RLB0015326. A copy of this Bond is attached.

If you have any further questions regarding this request, please direct them at your earliest possible convenience, to Mike FitzMaurice whose direct phone number is 303 / 390-1327.

Thank you for your assistance in this matter.

Sincerely,

Mark Williams
Senior Vice President
Exploration & Development
Whiting Petroleum Corporation

July 22, 2015

Mr. Todd L. Holweger
DMR Permit Manager
Oil & Gas Division
Department of Mineral Resources
North Dakota Industrial Commission
600 E. Boulevard Ave-Dept. 405
Bismarck, ND 58505-0840

Re: KODIAK POLAR BA GEOPHYSICAL EXPLORATION PERMIT # 97-0235
WILLIAMS COUNTY NON EXPLOSIVE METHOD

KODIAK SCANLAN WELLS EXTENSION GEOPHYSICAL EXPLORATION PERMIT # 97-0246
WILLIAMS COUNTY NON EXPLOSIVE METHOD

Dear Mr. Holweger,

Pursuant to Whiting Petroleum Corporation's ("Whiting") acquisition of the Polar Buried Array and Scanlan Extension from Kodiak Oil and Gas Corporation, Whiting has requested that we release our responsibility for the arrays and transfer it to them as they are now the owners of the array.

Per Whiting's request would you please transfer responsibility for the two installations from MicroSeismic, Inc. (MSI) to Whiting. This would include ongoing maintenance of the arrays and the decommissioning of the array as required at the end of life.

MSI permits are currently secured with our bond number B005315 in the amount of \$50,000 issued by US Specialty Insurance Company.

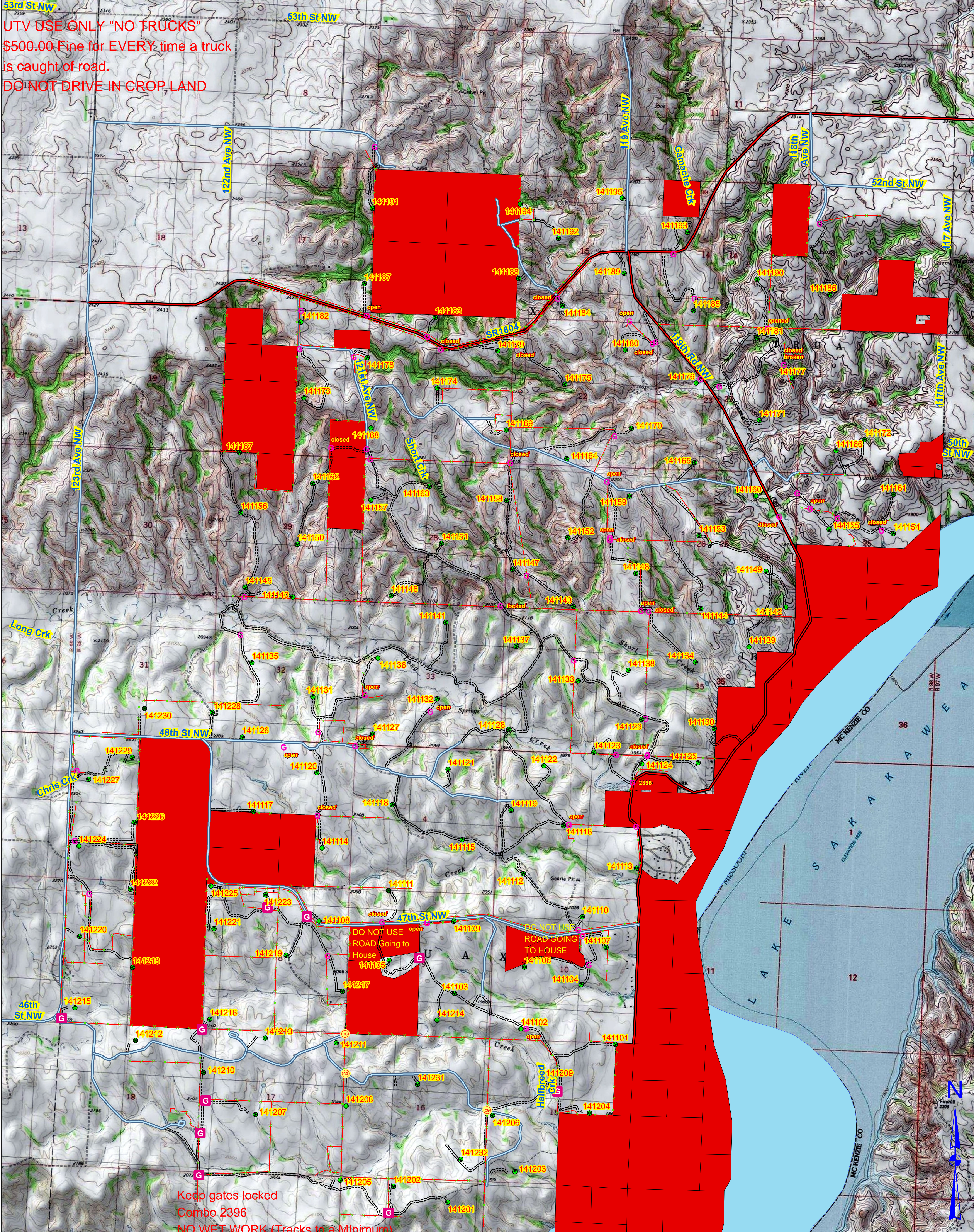
Thanks in advance for your assistance with this matter.

Regards,



Randy L. Evans
Vice President, Operations
MicroSeismic, Inc.

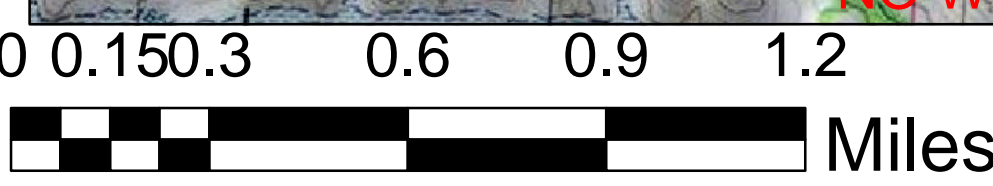
UTV USE ONLY "NO TRUCKS"
 \$500.00 Fine for EVERY time a truck
 is caught of road.
 DO NOT DRIVE IN CROP LAND



Keep gates locked
 Combo 2396
 NO WET WORK (Tracks to a Minimum)

DO NOT USE
 ROAD Going to
 House 141105

DO NOT USE
 ROAD GOING
 TO HOUSE
 141106



Kodiak Polar BA

- Legend**
- Kodiak Post Plot
 - Gates
 - No Permit



GEOPHYSICAL EXPLORATION AFFIDAVIT OF COMPLETION REPORT - FORM GE 6B

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51456 (03-2011)

PERMIT NAME (Required): Kodiak Scanlon Wells EXT
PERMIT NUMBER: 97-0246

AFFIDAVIT OF COMPLETION (GEOPHYSICAL CONTRACTOR)

STATE OF Texas)

COUNTY OF Midland)

Before me, ^{NH} Nancy Hanson
~~Dimas Gonzalez Jr.~~, a Notary Public in and for the said

County and State, this day personally appeared Dimas Gonzalez Jr.

who being first duly sworn, deposes and says that (s)he is employed by Micro Seismic

_____ , that (s)he has read North Dakota

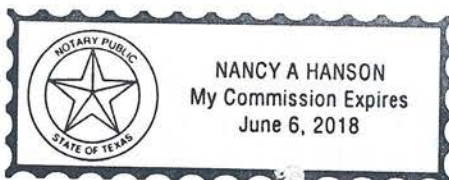
Century Code Section 38-08.1, that the foregoing seismic project has been completed in

accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on

the reverse side of this document are true.

[Signature]
Geophysical Contractor Representative

Subscribed in my presence and sworn before me this 19 day of March, 2015.



Notary Public Nancy A. Hanson

My Commission Expires 6-6-2018



GEOPHYSICAL EXPLORATION AFFIDAVIT OF PLUGGING (HOLE PLUGGER) - FORM GE 7B

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51457 (03-2011)

PERMIT NAME (Required): _____

PERMIT NUMBER: _____

AFFIDAVIT OF PLUGGING (HOLE PLUGGER)

STATE OF Texas)
)
COUNTY OF Midland)

Before me, Nancy Hanson a Notary Public in and for the said
County and State, this day personally appeared Dimas Gonzalez Jr.

who being first duly sworn, deposes and says that (s)he is employed by
Micro Seismic, that (s)he has read North Dakota

Century Code Section 38-08.1 and that the foregoing seismic project has been plugged in
accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on
the attached documents are true.

[Signature]
Hole Plugger Representative

Subscribed in my presence and sworn before me this 19 day of March, 2015.



Notary Public Nancy A. Hanson

My Commission Expires 6/6/2018



Industrial Commission of North Dakota
Oil & Gas Division
600 East Blvd. Dept. 405
Bismarck, North Dakota 58505

Kodiak Scanlan Wells Extension Ba # 97-0246

Dear, Mr. Todd Holweger,

We have contacted landowners during the permitting process to explain the project followed by the rules and guidelines that apply while performing the Buried Array project.

Best Regards,
Austin Cottongame

Permit Agent

Streamline Permit Services



GEOPHYSICAL EXPLORATION COMPLETION REPORT - FORM GE 6A

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51456 (03-2011)

Permit No. 97-0246	
Shot Hole Operations none	*Non-Explosive Operations yes

SECTION 1

Geophysical Contractor Microseismic Inc.	
Project Name and Number Kodiak Scanlan Wells Extention	County(s) Williams
Township(s) see attached	Range(s) see attached
Drilling and Plugging Contractors Val's Drilling	
Date Commenced February 19, 2014	Date Completed April 9, 2014

SECTION 2

First S.P. # 141201	Last S.P. # 141232										
Loaded Holes (Undetonated Shot Points)											
S.P.#s											
Charge Size											
Depth											
Reasons Holes Were Not Shot											

SECTION 3

Flowing Holes and/or Blowouts S.P.#s none
Procedure for Plugging Flowing Holes and/or Blowouts see schematic
Include a 7.5 minute USGS topographic quadrangle map or a computer generated post-plot facsimile of the approximate scale displaying each individual shot hole, SP #, line #, and legal location.

*Non-Explosive Operations - Complete Section 1 and Affidavit (Form GE 6B).

Installation of Micro Seismic monitors in the Kodiack Scalan Well Extension

This project involves the installation of Micro Seismic monitors in 30 locations over an area as noted below and on the attached map. All specific locations will be approved by landowners and care will be taken to locate monitors where they will be easily accessible by Micro Seismic, Inc. technicians on a regular basis, and where they will not conflict with farming or ranching operations. Monitors will be in use for at least one year and up to five years.

Area of Monitor Installation:

Project area is in Williams County, North Dakota:

• 153N 98W Sec 5,6,7,8,9,15,16,17,18,21

• 153N 99W Sec 1,12

• 154N 98W Sec 31

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Purpose of Monitors:

To record the sounds emitted when the reservoir is stimulated with high pressure fluid during the hydro fracturing procedures in the area. By mapping the spatial and temporal location of the points of sound emission in the reservoir and by relating these positions to the rate of fluid injection, much can be determined to improve the effectiveness of hydro fracturing.

Installation Process and Plugging Information:

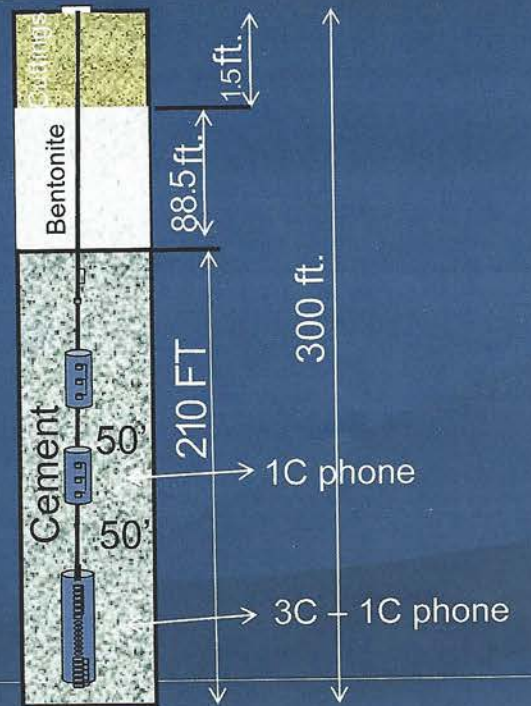
A 300' hole will be drilled (using conventional drill trucks) at each predetermined location as approved by landowners. The geophone string will be attached to a 1" PVC pipe and lowered in to the hole. The geophones are spaced 50' apart to a depth of 300' (with the top geophone located 150' below surface).

Once the geophones are installed they will be cemented in, using a light slurry of "Quick Crete" Portland cement pumped through the PVC to a level approximately 100 feet from the surface. The compressive strength of the cement will be 945 psi @ 140 deg After 72 hours. From past experience, it is expected to take 20 sacks of cement from 300 ft to 150ft. Once the cement is pumped the hole is temporarily plugged to allow the cement 24 hrs to set up. The cement will settle to the 150 foot level.

24 hrs later the temporary plug is removed and one bag of sand is added to assist in attenuating noise from above reaching the cemented area. The hole will then be filled with course bentonite to within 18 inches of the surface. A non metallic plug (which will have MSI scribed into the plug) will be inserted in to a depth of 18 inches. The hole will then be filled with cuttings to the surface. Cuttings will be spread out or removed

Geophone Installation

MicroSeismic Inc. proprietary information, which is PRIVILEGED, CONFIDENTIAL, or subject to COPYRIGHT belonging to MicroSeismic Inc.





GEOPHYSICAL EXPLORATION HOLE PLUGGING REPORT - FORM GE 7A

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51457 (03-2011)

Geophysical Company MicroSeismic Inc.	Date Plugged April 9, 2014
Hole Plugging Contractor Val's Drilling	Permit No. 97-0246
Prospect Kodiak Scanlan Wells Extention	Hole Plugger Val's Drilling

Line No.	S.P. No.	Hole Depth	Drill Type *CABP	Wet/ Dry	Bent. Sx	Bent. Capsules	Capsule Size**	Surface Plug Depth	Remarks Hole Bridged, Thick Mud, Etc.
1	see attached	document							
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

*Conventional-Auger-Buggy-Portable

**Diameter X Length

Kodiak Scanlan Wells Extension BA

Model #: GA110-029-300

HOLE #	DRILLER	DATE	START TIME	END TIME	DEPTH	CEMENT	Bentonite
32	32	32	32	32	32	32	32
141201	Tim Hoffer	20-Feb	12:05 PM	1:45 AM	300	8	8.0
141202	Tim Hoffer	20-Feb	2:20 AM	3:15 AM	300	8	8.0
141203	Tim Hoffer	21-Feb	10:30 AM	11:20 AM	300	8	12.0
141204	Tim Hoffer	21-Feb	1:40 AM	2:30 AM	300	8	6.0
141205	Tim Hoffer	20-Feb	11:00 AM	12:10 PM	300	8	12.0
141206	Tim Hoffer	21-Feb	8:50 AM	10:00 AM	300	8	3.5
141207	Tim Hoffer	23-Feb	8:45 AM	9:45 AM	300	8	6.0
141208	Tim Hoffer	20-Feb	8:30 AM	10:30 AM	300	8	12.0
141209	Tim Hoffer	21-Feb	12:05 PM	1:00 AM	300	8	2.5
141210	Tim Hoffer	22-Feb	1:45 AM	2:35 AM	300	8	8.0
141211	Tim Hoffer	22-Feb	10:40 AM	11:35 AM	300	8	11.0
141212	Tim Hoffer	22-Feb	12:10 PM	1:00 AM	300	8	6.5
141213	Tim Hoffer	19-Feb	5:00 AM	6:00 AM	300	8	13.0
141214	Tim Hoffer	22-Feb	8:50 AM	8:50 AM	300	8	8.0
141215	Tim Hoffer	23-Feb	10:45 AM	11:40 AM	300	8	4.0
141216	Tim Hoffer	19-Feb	3:00 AM	4:30 AM	300	8	12.0
141217	Tim Hoffer	25-Feb	1:55 AM	2:47 AM	300	8	3.0
141218	Tim Hoffer	23-Feb	1:55 AM	2:35 AM	300	8	7.0
141219	Tim Hoffer	26-Feb	9:00 AM	10:00 AM	300	8	8.0
141220	Tim Hoffer	23-Feb	12:15 PM	1:10 AM	300	8	2.5
141221	Tim Hoffer	26-Feb	1:50 AM	2:40 AM	300	8	7.0
141222	Tim Hoffer	24-Feb	10:30 AM	11:35 AM	300	8	3.0
141223	Tim Hoffer	26-Feb	10:35 AM	11:30 AM	300	8	6.0
141224	Tim Hoffer	24-Feb	8:40 AM	9:45 AM	300	8	7.0
141225	Tim Hoffer	26-Feb	12:05 PM	1:00 AM	300	8	8.0
141226	Tim Hoffer	24-Feb	12:20 PM	1:05 AM	300	8	5.0
141227	Tim Hoffer	24-Feb	1:40 AM	2:25 AM	300	8	4.0
141228	Tim Hoffer	25-Feb	12:10 PM	1:00 AM	300	8	9.0
141229	Tim Hoffer	25-Feb	9:00 AM	10:00 AM	300	8	4.5
141230	Tim Hoffer	25-Feb	10:40 AM	11:35 AM	300	8	5.5
141231	Tim Hoffer	9-Apr	1:00 PM	2:40 PM	300	8	7.0
141232	Tim Hoffer	9-Apr	11:00 AM	12:30 PM	300	8	6.5



GEOPHYSICAL EXPLORATION AFFIDAVIT OF PLUGGING (HOLE PLUGGER) - FORM GE 7B

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51457 (03-2011)

PERMIT NAME (Required): Kodiak Scanlan Wells Extension BA

PERMIT NUMBER: 970246

AFFIDAVIT OF PLUGGING (HOLE PLUGGER)



STATE OF North Dakota)
)
COUNTY OF Williams)

Before me, Kimberly Shanks a Notary Public in and for the said

County and State, this day personally appeared Dimas Gonzalez Jr.

who being first duly sworn, deposes and says that (s)he is employed by Micro Seismic, that (s)he has read North Dakota

Century Code Section 38-08.1 and that the foregoing seismic project has been plugged in accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on the attached documents are true.

[Signature]
Hole Plugger Representative

Subscribed in my presence and sworn before me this 22 day of April, 2014.

My Commission Expires _____
Notary Public
KIMBERLY SHANKS
Notary Public
State of North Dakota
My Commission Expires November 21, 2019

Kimberly Shanks



GEOPHYSICAL EXPLORATION SUNDRY NOTICE - FORM 684
 INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 600 EAST BOULEVARD DEPT 405
 BISMARCK, ND 58505-0840
 SFN 51458 (03-2011)



PERMIT # 970246

Project Name
Kodiak Scanlan Wells Extension

County
Williams County, North Dakota

Supplemental Information

Please see attached map.
MicroSeismic would like to drill two additional holes on the Kodiak Scanlan Wells project holes will be drilled to a depth of 300'. The holes will be drilled 5 feet on either side of existing hole 141217 which is located on 153N 98 W sec 8 on the SE 1/4.

The purpose of these holes is to get a data a comparison between our old geophone (model GA110-029-300) that is installed in hole 141217, the 2 new models are DTRD 116-G1SA which will be installed on 9217 and 016-300 GUMBY will be installed in 8217.

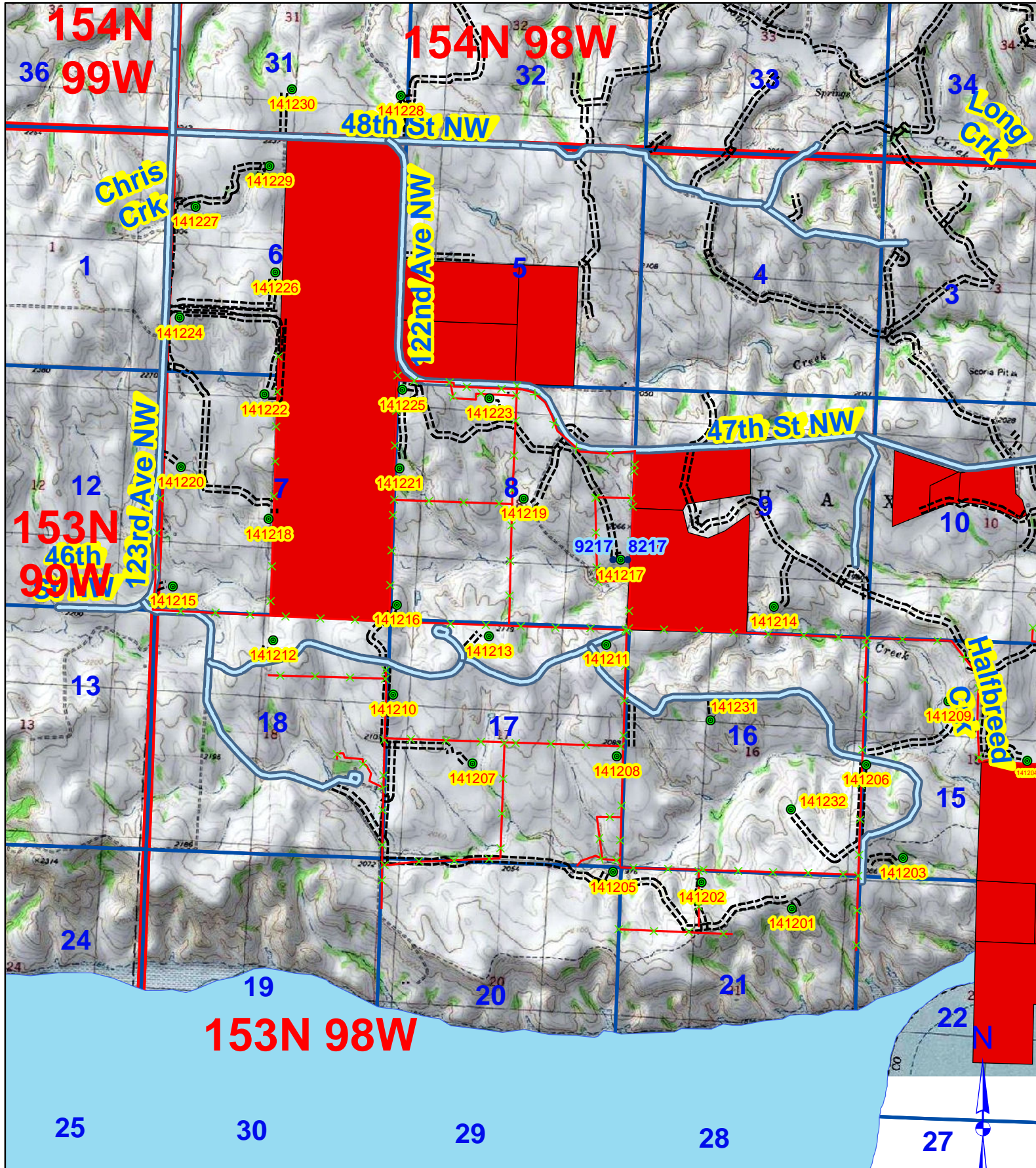
The changes we made from one geophone to another was the metal casing, spacing between sonds and we want to be sure the data quality remains the same.

*Holes must be properly plugged with bentonite.
 * contact Tom Torstensen @ 290-1546 24 hrs prior to plugging.*

Company MicroSeismic, Inc.		Telephone Number (432) 238-9700	
Address 10777 Westheimer Rd Suite 500			
City Houston		State TX	Zip Code 77042
Signature <i>[Signature]</i>		Printed Name Dimas Gonzalez	
Title Sr. Project Manager		Date April 10, 2014	
Email Address dgonzalez@microseismic.com			

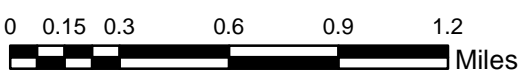
FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 4/11/14	
By <i>[Signature]</i>	
Title Mineral Resources Permit Manager	



*Kodiak Scanlan Well Extension BA
Williams County, North Dakota
Kodiak Oil and Gas U.S.A
2 Holes 5 feet away on either side of
141217 153N 98W sec. 8*

- Legend**
- Holes 9217,8217
 - Scanlan Wells Extension Post



Date: 4/9/2014

Coordinate System: NAD 1927 StatePlane North Dakota North FIPS 3301



GEOPHYSICAL EXPLORATION SUNSHINE NOTICE FORM GE 4
 INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 600 EAST BOULEVARD DEPT 405
 BISMARCK, ND 58505-0840
 SFN 51456 (03-2011)



PERMIT # 970246

Project Name
Kodiak Scanian Wells Extension

County
Williams County North Dakota

Supplemental Information
Please note revised map.
The original job consisted of 30- 300 foot holes. and We would like to add two more holes.

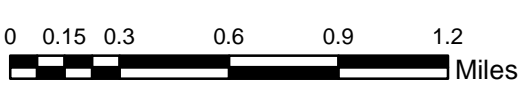
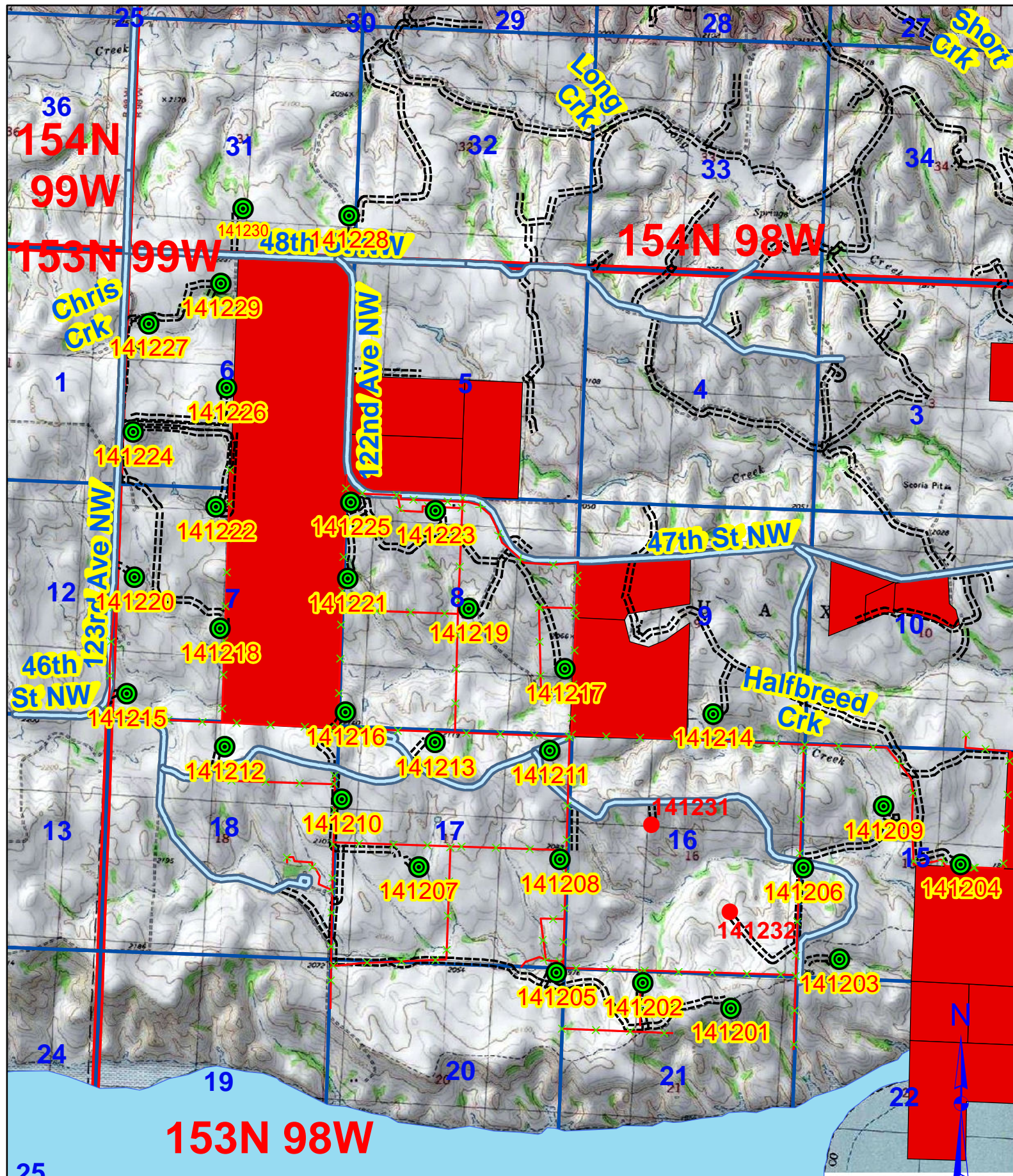
The ND Department of State Lands issued me a permit number ROW#7020 for 153N 98W section 16 located in Williams , County ND.

MicroSeismic would like to drill 2 - 300 foot holes in 153N 98W section 16.
Hole numbers are 141231 and 141232

Company MicroSeismic, Inc.		Telephone Number (432) 238-9700	
Address 10777 Westheimer Rd Suite 500			
City Houston		State TX	Zip Code 77042
Signature 		Printed Name Dimas Gonzalez	
Title Sr. Project Manager		Date March 26, 2014	
Email Address dgonzalez@microseismic.com			

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 4/7/14	
By 	
Title Mineral Resources Permit Manager	

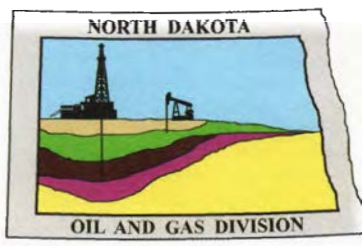


Date: 3/26/2014

Kodiak Scanlan Well Extension
Williams County, North Dakota
Kodiak Oil and Gas U.S.A
30 Holes plus 2 holes on 153N 98W sec. 16

- Legend**
- Preplot with points on State land
 - Scanlan Wells Extension Post

Coordinate System: NAD 1927 StatePlane North Dakota North FIPS 3301



Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas/

FEBRUARY 14, 2014

MR. DIMAS GONZALEZ
PARTY MANAGER
MICROSEISMIC, INC.
ONE WESTCHASE CENTER
10777 WESTEIMER ST
HOUSTON, TX 77042

RE: KODIAK SCANLAN WELLS EXTENSION
GEOPHYSICAL EXPLORATION PERMIT # 97-0246
WILLIAMS COUNTY
NON EXPLOSIVE METHOD

Dear Mr. Gonzalez:

Please be advised that we are in receipt of your Geophysical Exploration (noise attenuation test) permit application and it is conditionally approved; effective for one year from FEBRUARY 14, 2014. **PURSUANT TO NDAC 43-02-12-05 (DISTANCE RESTRICTION) non-explosive exploration method may not be conducted not less than 300 feet from a water well, building, underground cistern, pipelines, and flowing spring.** Review the following conditions for your permit:

1. A pre-program meeting with state seismic inspector Tom Torstenson is required. You must contact him at 701-290-1546 (cell) or 701-227-7436 at least 24 hours prior to any exploration operations. Also, a copy of the entire permit is required for all contractors at the pre-program meeting.
2. All variances for distance restrictions are to be furnished, and a pre-plot map displaying any source points that do not comply with the distance restriction rule must be supplied to the inspector.
3. The following information must be submitted within 30 days of the completion of the project by the Geophysical Company:
 - a. Completion Report,
 - b. Completion Affidavit,
 - c. Post Plot Map. It must show all water wells, buildings, underground cisterns, pipelines, and flowing springs that fall within the program area and within one half mile of the perimeter of the program.
 - d. SD card or email: ttorstenson@nd.gov with all source and receiver points,

- e. Letter stating that the Geophysical Company has given all surface owner's a copy of the Section and Chapter of the NDCC as stated in paragraph 5.
4. The following information must be submitted within 30 days of the completion of the project by the SUBCONTRACTOR(s) (when applicable):
 - a. Plugging Report
 - b. Plugging Affidavit
5. It is required that within seven days of initial contact between the permitting agent and the operator of the land, the permitting agent shall provide the operator of the land and each landowner owning land within one-half mile of the land on which geophysical exploration activities are to be conducted a written copy of NDCC Section 38-08.1-04.1 (Exploration Permit) and NDCC Chapter 38-11.1 (Oil and Gas Production Damage Compensation). The permitting agent shall file an affidavit with this office confirming compliance with such notification. For your convenience, a copy of both Sections are enclosed.
6. The permit agent shall notify the operator of the land at least seven days before commencement of any geophysical exploration activity, unless waived by mutual agreement of both parties. The notice must include the approximate time schedule and the location of the planned activity.
7. Information regarding the location of water wells, springs, etc.; refer to the following ND State Water Commission Mapservice website, at: <http://mapservice.swc.state.nd.us/>
8. The entire permit can be viewed, as well as the status of various seismic projects in the state, at: <https://www.dmr.nd.gov/oilgas/seismic/seismicstats.asp>

Should you have any questions regarding this matter, feel free to contact me at 701-328-8020, or Tom Torstenson at the number listed in paragraph 1.

Sincerely,



Todd L. Holweger
DMR Permit Manager



GEOPHYSICAL EXPLORATION PERMIT - FORM GE 1

INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 600 EAST BOULEVARD DEPT 405
 BISMARCK, ND 58505-0840
 SFN 51459 (03-2011)



1) a. Company Microseismic, Inc.		Address 10777 Westheimer Rd Suite 500 Houston Texas 77042			
Contact Dimas Gonzalez		Telephone (432) 238-9700		Fax (713) 781-2326	
Surety Company U.S. Specialty Insurance Company		Bond Amount \$50,000		Bond Number B005315	
2) a. Subcontractor(s) Glacier Exploration Surveys, Ltd.		Address 3301 Highway 2 NW, Havre, Mt. 59501		Telephone (713) 304-3044	
b. Subcontractor(s) Val's Drilling		Address 186 Dawn Dr. Columbia Falls, Mt. 59		Telephone (403) 226-2057	
3) Party Manager Dimas Gonzalez		Address (local) 189 14th st Sidney, MT 59270		Telephone (local) (432) 238-9700	
4) Project Name or Line Numbers Kodiak Scanlan wells extension					
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D, Other) burried geophones monitors at specific locations within project area. (see attached document)					
6) Distance Restrictions (Must check all that apply)					
<input checked="" type="checkbox"/> 300 feet - NonExplosive - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
<input type="checkbox"/> 660 feet - Shot Hole - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
7) Size of Hole	Amt of Charge	Depth	Source points per sq. mi.	No. of sq. mi.	
3-D n/a	n/a	300'	n/a		
Size of Hole	Amt of Charge	Depth	Source points per ln. mi.	No. of ln. mi.	
2-D					
8) Approximate Start Date February 20, 2014			Approximate Completion Date February 20, 2023		

THE COMMISSION MUST BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF COMMENCEMENT OF GEOPHYSICAL OPERATIONS

9) Location of Proposed Project - County Williams, County North Dakota				
Section(s), Township(s) & Range(s)	Section	See Attached document	T.	R.
	Section		T.	R.
	Section		T.	R.
	Section		T.	R.
	Section		T.	R.
	Section		T.	R.

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.			Date
Signature <i>Dimas Gonzalez</i>	Printed Name Dimas Gonzalez	Title Sr. Project Manager	
Email Address(es) dgonzalez@microseismic.com			

(This space for State office use)		Permit Conditions	
Permit No. 970246	Approval Date 2/14/14	* Permit in hand required at pre-program meeting with field inspector and be aware of all NDIC Rules and Regulations (i.e. distance restrictions). * See attached letter.	
Approved by <i>Todd L. Hoeger</i>			
Title Mineral Resources Permit Manager			

Installation of Micro Seismic monitors in the Kodiack Scalan Well Extension

This project involves the installation of Micro Seismic monitors in 30 locations over an area as noted below and on the attached map. All specific locations will be approved by landowners and care will be taken to locate monitors where they will be easily accessible by Micro Seismic, Inc. technicians on a regular basis, and where they will not conflict with farming or ranching operations. Monitors will be in use for at least one year and up to five years.

Area of Monitor Installation:

Project area is in **Williams** County, North Dakota:

• **153N 98W Sec 5,6,7,8,9,15,16,17,18,21**

• **153N 99W Sec 1,12**

• **154N 98W Sec 31**

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Purpose of Monitors:

To record the sounds emitted when the reservoir is stimulated with high pressure fluid during the hydro fracturing procedures in the area. By mapping the spatial and temporal location of the points of sound emission in the reservoir and by relating these positions to the rate of fluid injection, much can be determined to improve the effectiveness of hydro fracturing.

Installation Process and Plugging Information:

A 300' hole will be drilled (using conventional drill trucks) at each predetermined location as approved by landowners. The geophone string will be attached to a 1" PVC pipe and lowered in to the hole. The geophones are spaced 50' apart to a depth of 300' (with the top geophone located 150' below surface).

Once the geophones are installed they will be cemented in, using a light slurry of "Quick Crete" Portland cement pumped through the PVC to a level approximately 100 feet from the surface. The compressive strength of the cement will be 945 psi @ 140 deg After 72 hours. From past experience, it is expected to take 20 sacks of cement from 300 ft to 150ft. Once the cement is pumped the hole is temporarily plugged to allow the cement 24 hrs to set up. The cement will settle to the 150 foot level.

24 hrs later the temporary plug is removed and one bag of sand is added to assist in attenuating noise from above reaching the cemented area. The hole will then be filled with course bentonite to within 18 inches of the surface. A non metallic plug (which will have MSI scribed into the plug) will be inserted in to a depth of 18 inches. The hole will then be filled with cuttings to the surface. Cuttings will be spread out or removed

depending on the landowner's preference.

Surface Indications:

On the surface there will be a small vault that will be flush to the ground for the purpose of housing the geophone leads. There will be a sign installed on location indicating geophone buried-do not dig. The sign will also have Micro Seismic, Inc. contact information and client name.

During periods of data acquisition each geophone string is plugged in to a Remote Acquisition Unit (RAUL) used to digitize the analog geophone output. Each RAUL is approximately 6" x 6" x 10" in size, has a 12 volt external power supply and sits on the ground near the buried geophone string.

Four wheeled all-terrain vehicles (UTV's) such will be used for bulk equipment movement along approved roads and trails. Some time in the future when the monitoring is completed, wire leads will be cut, signs removed and the surface will be restored to normal.

Upon Completion of Monitor Installation:

An inventory of locations will be done upon completion and landowners will be paid pursuant to the permit agreement.

The NDIC Oil & Gas Division will be provided;

A post-plot map showing actual monitor location installations and an SD Card with the Latitude and Longitude of each monitor location that is installed.

MicroSeismic

Passive Monitoring, Active Listening

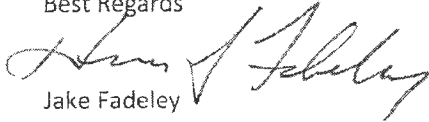
Industrial Commission of North Dakota
Oil & Gas Division
600 East Blvd. Dept. 405
Bismarck, North Dakota 58505

RE: Glacier Exploration Services Ltd., Contracted to MicroSeismic, Inc.

Dear, Mr. Todd Holweger,

We at MicroSeismic, Inc. are engaged in the process of conducting, a Buried Array Service, in Williams County, North Dakota. Our client Kodiak Oil and Gas U.S.A has contracted MicroSeismic, Inc. to bury Geophones in the Ground and Monitor their Fracing programs. Microseismic has contracted Streamline Permit Services to acquire permission from the surface Owners of the property were we will be placing the Buried Array. Streamline Permitting, will obtain all permits for the surface, to bury the Geophones. Please call if you have questions. (713) 304-3044.

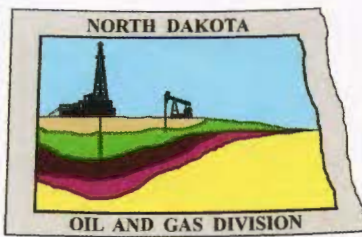
Best Regards



Jake Fadeley
(713) 304-3044

Permit Agent
Glacier Exploration Surveys

2-6-14



Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas/

FEBRUARY 14, 2014

The Honorable Beth Innis
Williams County Auditor
P.O. Box 2047
Williston, ND 58802-2047

RE: Geophysical Exploration
 Permit #97-0246

Dear Ms. Innis:

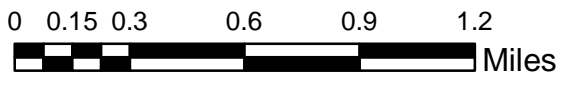
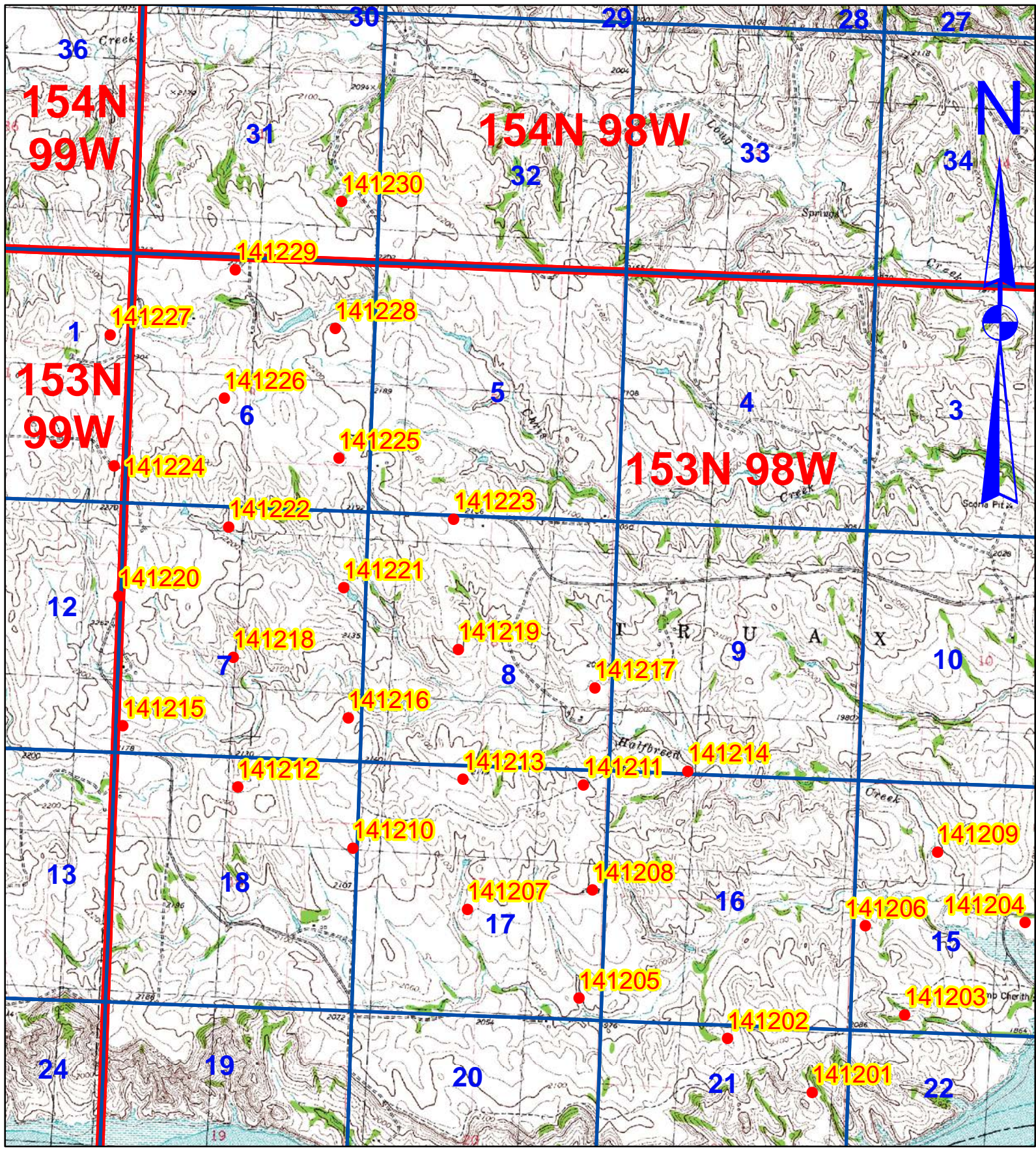
Pursuant to Section 38-08.1-04.2 of the North Dakota Century Code, please be advised that MICROSEISMIC, INC. was issued the above captioned permit on FEBRUARY 14, 2014 and will remain in effect for a period of one year. The entire permit can be viewed on our website at:

<https://www.dmr.nd.gov/oilgas/seismic/seismicstats.asp>

Should you have any questions, please contact our office.

Sincerely,

Todd L. Holweger
DMR Permit manager



Kodiak Scanlan Well Extension

Williams County, North Dakota
Kodiak Oil and Gas U.S.A
30 total stations

Legend

- Kodiak Scanlan well extension pre nad27
- section
- Town ship

Coordinate System: NAD 1927 StatePlane North Dakota North FIPS 3301

Date: 2/6/2014

Geophone Installation

MicroSeismic Inc. proprietary information, which is PRIVILEGED, CONFIDENTIAL, or subject to COPYRIGHT belonging to MicroSeismic Inc

