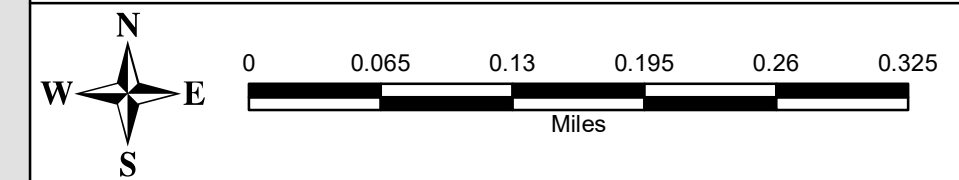


# WESTHOPE 2018 3D

<b>Equipment:</b>	Wheeled	<b>Receiver Interval:</b>	200m
<b>Source:</b>	Vibe	<b>Source Interval:</b>	250m
<b>Depth:</b>	N/A	<b>Receiver Spacing:</b>	50m
<b>Size:</b>	N/A	<b>Source Spacing:</b>	50m
<b>Source Points:</b>	585	<b>Receiver Points:</b>	655
<b>Program Total:</b>		<b>Project Area:</b>	

Survey Map

Date: 1/10/2018



Projection: UTM Zone 14 Datum: NAD83 Scale: 1:6,000

### Legend

- Postplot\_Source
- Postplot\_Receiver
- Preplot\_Source
- Preplot\_Receiver
- Roads\_State
- Roads\_County
- Access
- Waterline
- Ditch
- Fence
- OHPL\_Digitized
- ▲ ACCESS
- DROP FENCE
- DROP GATE
- × FENCE
- × FIBER
- GATE
- HAZ
- LOCKED GATE
- OHPL
- STAGING
- ▲ TA
- TANK
- WATERWELL
- WELLHEAD
- WELLSHACK
- WINDMILL
- Cemetery
- Buildings
- Buffers\_300'
- Parcels
- <all other values>
- Status
- NOTIFICATION SENT
- VERBAL
- GOOD

### Vehicle Hazards

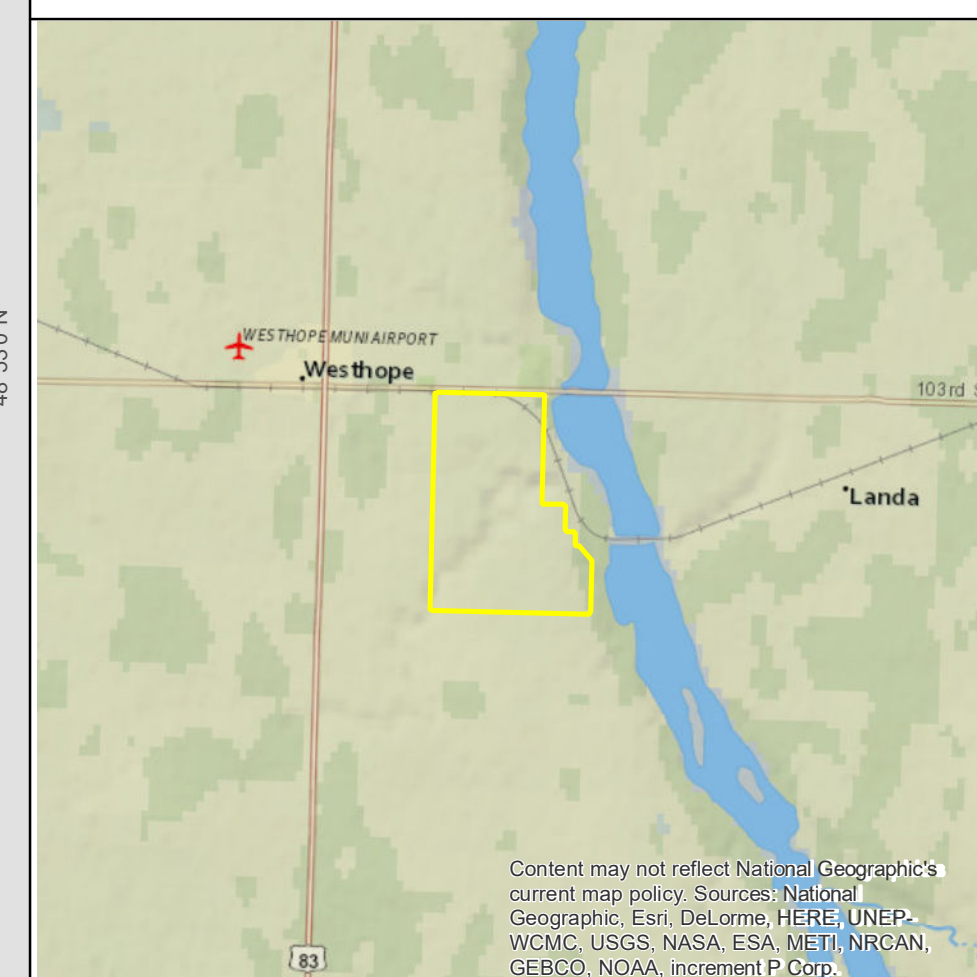
- × 1. No or narrow road shoulder
- × 2. Coulees
- × 3. Narrow bridges
- × 4. Steep hills
- × 5. Uncontrolled railway crossings
- × 6. Side hills
- × 7. Icy approaches
- × 8. Icy bridge decks
- × 9. Roads subject to drifting
- × 10. School bus stop
- × 11. Rough crossing on texas gates
- × 12. Blind curves
- × 13. Construction on traveled routes
- × 14. Blind hills
- × 15. Localized weather i.e. fog
- × 16. Wildlife
- × 17. Fences: bared wire & electric
- × 18. Drainage ditches
- × 19. Local Traffic
- × 20. Logging trucks

### Hazards Pertinent to Both Vehicles and work on Foot

- × 1. Coulees
- × 2. Badger holes
- × 3. Steep hills / cliffs
- × 4. Open excavations
- × 5. Drainage ditches
- × 6. Thin ice
- × 7. Poor footing & slippery conditions
- × 8. Snags

### Other General Hazards

- × 1. Fire (grass or forest fires)
- × 2. Dangerous animals bull, bears, etc
- × 3. H2S hazard
- × 4. Hunting activity
- × 5. Footpath hazards: stumps, pokers, etc
- × 6. Buried power lines
- × 7. High-watt radio / TV transmitters
- × 8. Bee / wasp nests
- × 9. Buried pipeline
- × 10. Overhead power lines



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

CARTOGRAPHY BY NORTHEAST DRAFTED BY S.WOJCICHOWSKY



## Harbinger Exploration Corp.

Calgary Office Suite 300, 520 – 3<sup>rd</sup> Avenue SW Calgary, Alberta Canada T2P 0R3 Tel: 403-262-1541 Fax: 403-262-1568

### SENT VIA EMAIL/COURIER

March 7, 2018

Industrial Commission of North Dakota  
Oil and Gas Division  
600 East Boulevard Dept 405  
Bismarck, ND 58505-0840

Dear Mr. Todd Holweger:

**Re: Geophysical Final Project Information**  
**Geophysical Prospect: Westhope 2018 3-D**  
**File No. 97-0284**  
**Company: PanAmerican Seismic Inc.**  
**Location: Bottineau County**

Please find attached the final project information for the above-mentioned exploration program. Should you have any questions concerning this matter, please contact me at 403-262-1541 or email [James.Switzer@Harbinger.ca](mailto:James.Switzer@Harbinger.ca)

Yours truly,

James Switzer, General Manager  
Harbinger Exploration Corp.  
[James.Switzer@Harbinger.ca](mailto:James.Switzer@Harbinger.ca)  
/js  
encl.



# Harbinger Exploration Corp.

Calgary Office Suite 300, 520 - 3rd Avenue SW Calgary, Alberta Canada T2P 0R3 Tel: 403-262-1541 Fax: 403-262-1568

December 12, 2017

Industrial Commission of North Dakota  
Oil and Gas Division  
600 East Boulevard Dept. 405  
Bismarck, ND 58505-0840

Received

MAR - 7 2018

ND Oil & Gas  
Division

Dear Mr. Todd Holweger:

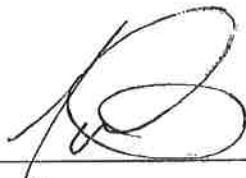
### AFFIDAVIT

Canada )  
Province of Alberta ) S.S.  
)

I, James Switzer, of Calgary, Alberta, Canada, MAKE OATH AND SAY THAT:

1. I, James Switzer, of Calgary, Alberta, Canada an approved agent of PanAmerican Seismic Inc., State that all landowners impacted by the Westhope 2018 3D Seismic exploration program have been provided with a copy of Section 38-08.1 and NDCC Chapter 38.11.1, per the requirement of Geophysical Exploration Permit 97-0284 .

SWORN/AFFIRMED BEFORE ME, )  
at Calgary )  
Alberta. on )  
this 12th day of December, 2017 )  
)

  
\_\_\_\_\_  
James Switzer

\_\_\_\_\_  
A NOTARY PUBLIC IN AND FOR )  
The Province of Alberta )  
My Commission expires June 26, 2018 )  
)





# 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)

Received

MAR - 7 2018

Permit No. <b>#97-0284</b>		ND Oil & Gas Division
Shot Hole Operations <b>n/a</b>	*Non-Explosive Operations <b>Vibroseis</b>	

## SECTION 1

Geophysical Contractor <b>PanAmerican Seismic Inc.</b>	
Project Name and Number <b>Westhope 2018 3-D</b>	County(s) <b>Bottineau</b>
Township(s) <b>162N-163N</b>	Range(s) <b>79W-80W</b>
Drilling and Plugging Contractors <b>N/A</b>	
Date Commenced <b>January 15, 2018</b>	Date Completed <b>January 21, 2018</b>

## SECTION 2

First S.P. #	Last S.P. #											
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
Procedure for Plugging Flowing Holes and/or Blowouts
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).



# 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): Westhope 2018 3D

PERMIT NUMBER: 97-0284

## AFFIDAVIT OF COMPLETION (GEOPHYSICAL CONTRACTOR)

Received

MAR - 7 2018

ND Oil & Gas  
Division

STATE OF North Dakota )

COUNTY OF Bottineau )

Before me, Kim Hunt, a Notary Public in and for the said

County and State, this day personally appeared Braeden Peters

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

Pan American 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.

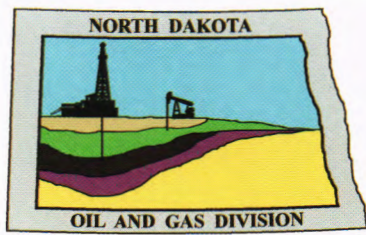
[Signature]  
Geophysical Contractor Representative

Subscribed in my presence and sworn before me this 29 day of January, 2018

KIM HUNT  
Notary Public  
State of North Dakota  
My Commission Expires Mar 17, 2020

Notary Public [Signature]

My Commission Expires \_\_\_\_\_



# 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/](http://www.dmr.nd.gov/oilgas/)

December 29, 2017

Mr. Mitchell Peters  
Director  
PanAmerican Seismic, Inc.  
10700 Richmond Avenue,  
Suite 105  
Houston, TX 77042

RE: WESTHOPE 2018 3-D  
GEOPHYSICAL EXPLORATION PERMIT #97-0284  
BOTTINEAU COUNTY  
NON EXPLOSIVE METHOD

Dear Mr. Peters:

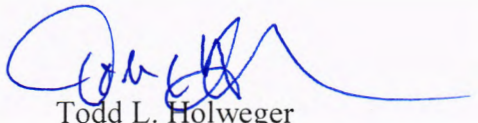
Please be advised that we are in receipt of your Geophysical Exploration permit application and it is conditionally approved; effective for one year from December 29, 2017. **PURSUANT TO NDAC 43-02-12-05 (DISTANCE RESTRICTION) non-explosive exploration method may not be conducted not less than 300 feet from a water well, building, underground cistern, pipelines, and flowing spring. In addition, pursuant to NDAC 43-02-12-06 (NOTIFICATION OF WORK PERFORMED), "The director is authorized to suspend operations of the entire geophysical project, or any portion thereof, if further activity will cause excessive damage to the surface of the land".** 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. Must provide a GIS layer using NAD83 in an Esri shape file format and an Image file (.img) on a Flash Drive or email: [ttorstenson@nd.gov](mailto:ttorstenson@nd.gov) with all source and receiver points,
4. 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.
5. 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/>
6. 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  
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)

Received

DEC 17 2017

ND Oil & Gas  
 Division

1) a. Company <b>PanAmerican Seismic Inc.</b>		Address <b>10700 Richmond Avenue, Suite 105, Houston, Texas, 77042</b>			
Contact <b>Mitchell Peters</b>		Telephone <b>(403) 319-0922</b>		Fax <b>(403) 319-0933</b>	
Surety Company <b>Lexon Insurance Company</b>		Bond Amount <b>\$25,000.00</b>		Bond Number <b>1119012</b>	
2) a. Subcontractor(s)		Address			
b. Subcontractor(s)		Address			
3) Party Manager <b>Braedon Peters</b>		Address (local) <b>Super 8 1007 11th Street East, Bottineau</b>		Telephone (local) <b>(403) 969-5845</b>	
4) Project Name or Line Numbers <b>Westhope 2018 3D</b>					
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D, Other) <b>Non-Explosive 2D</b>					
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 <b>3-D</b>	Amt of Charge <b>n/a</b>	Depth <b>n/a</b>	Source points per sq. mi. <b>248</b>	No. of sq. mi. <b>2.4</b>	
Size of Hole <b>2-D</b>	Amt of Charge	Depth	Source points per ln. mi.	No. of ln. mi.	
8) Approximate Start Date <b>January 2, 2017</b>			Approximate Completion Date <b>March 14, 2018</b>		

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

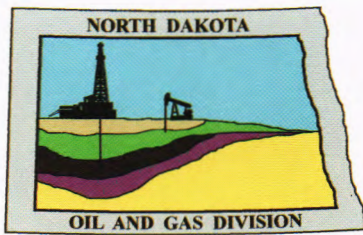
9) Location of Proposed Project - County <b>Bottineau</b>						
Section(s), Township(s) & Range(s)	Section	<b>1</b>	T.	<b>162N</b>	R.	<b>80W</b>
	Section	<b>6</b>	T.	<b>162N</b>	R.	<b>79W</b>
	Section	<b>36</b>	T.	<b>163N</b>	R.	<b>80W</b>
	Section		T.		R.	
	Section		T.		R.	
	Section		T.		R.	

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.			Date <b>November 27, 2017</b>
Signature 	Printed Name <b>James Switzer</b>	Title <b>General Manager</b>	
Email Address(es) <b>James.Switzer@Harbinger.ca</b>			

(This space for State office use)		<p align="center"><b>Permit Conditions</b></p> <p>* Permit in hand required at pre-program meeting with field inspector and be aware of all NDIC Rules and Regulations (i.e. distance restrictions).</p> <p>* See attached letter.</p>
Permit No. <b>97-0284</b>	Approval Date <b>12/29/17</b>	
Approved by 	Title <b>Mineral Resources Permit Manager</b>	

\*See Instructions On Reverse Side





# 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/](http://www.dmr.nd.gov/oilgas/)

December 29, 2017

The Honorable Lisa Herbel  
Bottineau County Auditor  
314 W 5<sup>th</sup> St.  
Ste. 10  
Bottineau, ND 58318-1268

RE:    Geophysical Exploration  
       Permit #97-0284  
       Permit #97-0285

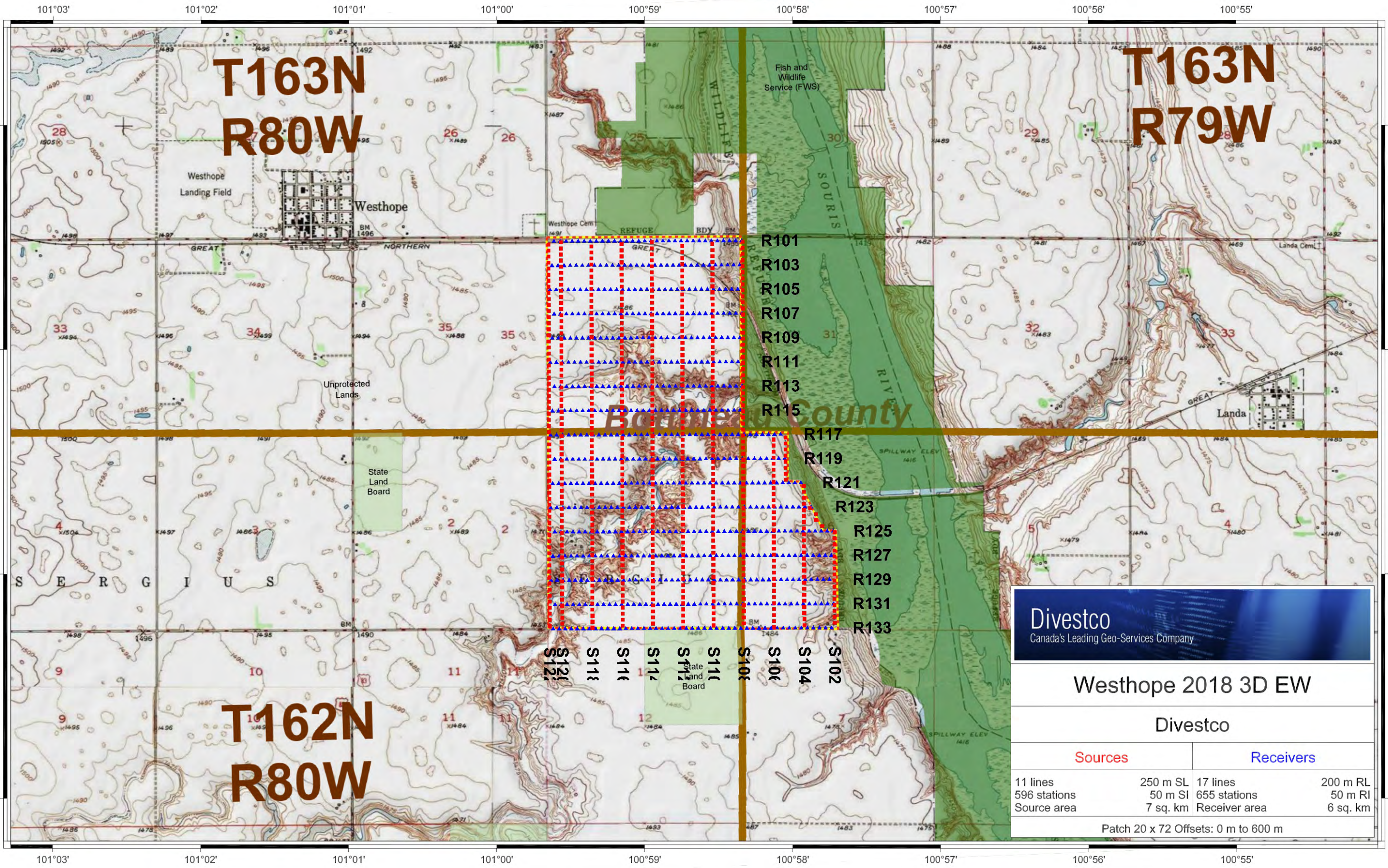
Dear Ms. Herbel:

Pursuant to Section 38-08.1-04.2 of the North Dakota Century Code, please be advised that PanAmerican Seismic, Inc. was issued the above captioned permits on December 29, 2017 will remain in effect for a period of one year. The permits 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  
Permit Manager

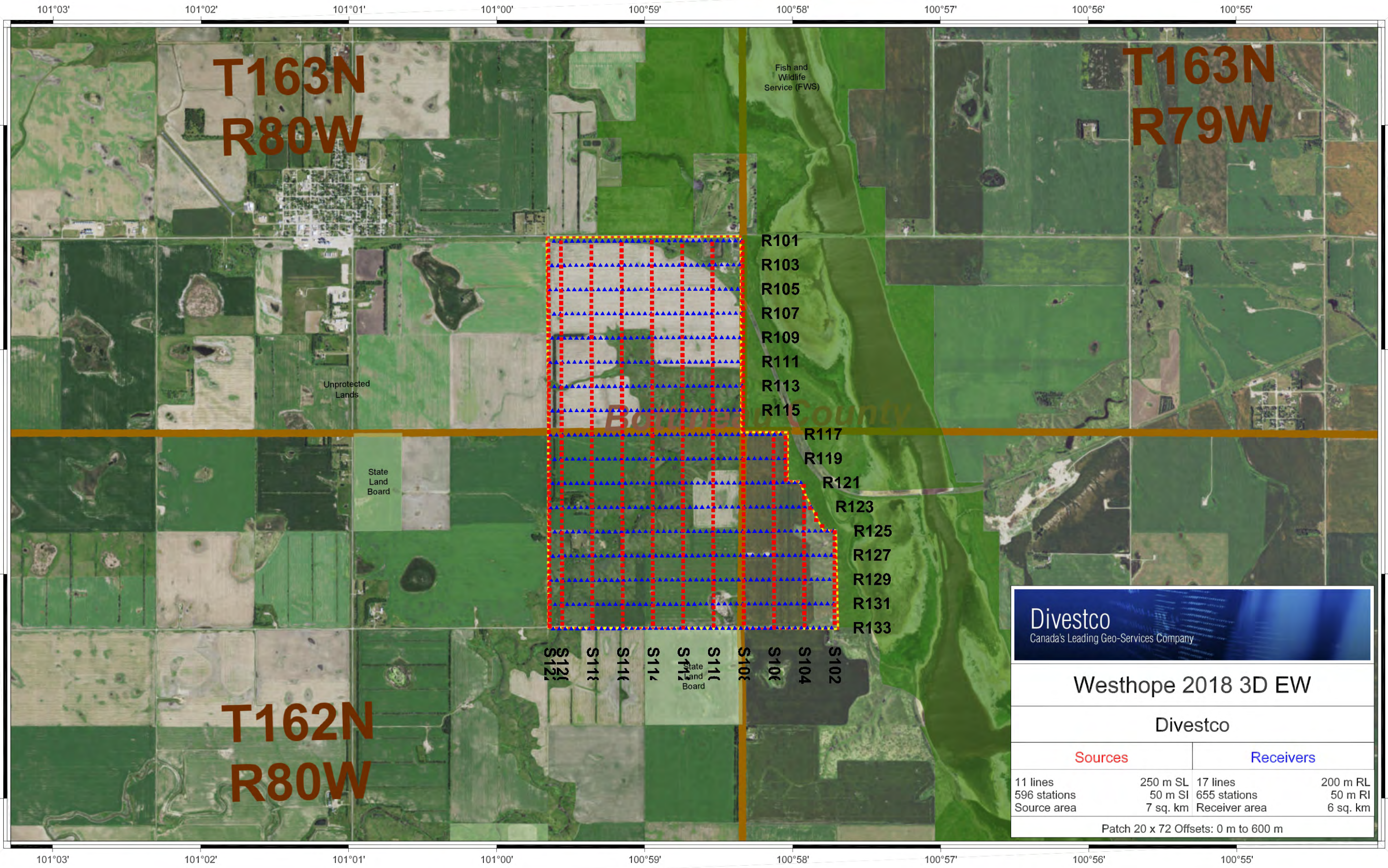


### Westhope 2018 3D EW

Divestco

Sources		Receivers	
11 lines	250 m SL	17 lines	200 m RL
596 stations	50 m SI	655 stations	50 m RI
Source area	7 sq. km	Receiver area	6 sq. km

Patch 20 x 72 Offsets: 0 m to 600 m



**T163N  
R80W**

**T163N  
R79W**

**T162N  
R80W**

Fish and  
Wildlife  
Service (FWS)

Unprotected  
Lands

State  
Land  
Board

*Boulder County*

- R101
- R103
- R105
- R107
- R109
- R111
- R113
- R115
- R117
- R119
- R121
- R123
- R125
- R127
- R129
- R131
- R133

- S102
- S104
- S106
- S108
- S110
- S112
- S114
- S116
- S118
- S120
- S122

**Divestco**  
Canada's Leading Geo-Services Company

**Westhope 2018 3D EW**

**Divestco**

Sources		Receivers	
11 lines	250 m SL	17 lines	200 m RL
596 stations	50 m SI	655 stations	50 m RI
Source area	7 sq. km	Receiver area	6 sq. km

Patch 20 x 72 Offsets: 0 m to 600 m



# Harbinger Exploration Corp.

Calgary Office Suite 300, 520 – 3<sup>rd</sup> Avenue SW Calgary, Alberta Canada T2P 0R3 Tel: 403-262-1541 Fax: 403-262-1568

December 12, 2017

Industrial Commission of North Dakota  
Oil and Gas Division  
600 East Boulevard Dept. 405  
Bismarck, ND 58505-0840

Dear Mr. Todd Holweger:


### AFFIDAVIT

Canada )  
Province of Alberta ) S.S.  
)

I, James Switzer, of Calgary, Alberta, Canada, MAKE OATH AND SAY THAT:

1. I, James Switzer, of Calgary, Alberta, Canada an approved agent of PanAmerican Seismic Inc., State that all landowners impacted by the Westhope 2018 3D Seismic exploration program have been provided with a copy of Section 38-08.1 and NDCC Chapter 38.11.1, per the requirement of Geophysical Exploration Permit \_\_\_\_\_.

SWORN/AFFIRMED BEFORE ME, )  
at Calgary )  
Alberta, on )  
this 12th day of December, 2017 )

  
\_\_\_\_\_  
James Switzer

*Anna Marie*  
A NOTARY PUBLIC IN AND FOR )  
The Province of Alberta )  
My Commission expires *June 26, 2018* )





## Harbinger Exploration Corp.

Calgary Office Suite 300, 520 – 3<sup>rd</sup> Avenue SW Calgary, Alberta Canada T2P 0R3 Tel: 403-262-1541 Fax: 403-262-1568

### SENT VIA EMAIL/COURIER

December 12, 2017

Industrial Commission of North Dakota  
Oil and Gas Division  
600 East Boulevard Dept 405  
Bismark, ND 58505-0840

Dear Mr. Todd Holweger:

**Re: Request for Geophysical Exploration Permit**  
**Geophysical Prospect: Westhope 2018 3D**  
**Company: PanAmerican Seismic Inc.**  
**Location: Bottineau County**

Please find attached our request for a Geophysical Exploration Permit – Form GE 1 and required additional information. If you have any questions concerning this matter, please contact me at 403-262-1541.

Yours truly,

James Switzer, General Manager  
Harbinger Exploration Corp.  
James.Switzer@Harbinger.ca  
/js  
encl.



---

10700 Richmond Ave. #105 Houston, Texas 77042, Phone +1 713 587 9111

**Industrial Commission of North Dakota**

December 12, 2017

Oil and Gas Division  
600 East Boulevard Dept. 405  
Bismarck, ND 58505-0840

**Attn: Mr. Todd Holweger**

**Re: Assignment of Agents  
Westhope 2017 3D/Starbuck 2017 2D – Seismic Exploration Projects  
Bottineau County ND**

Dear Mr. Holweger,

Please accept this letter as authorization for the following parties to act as our agents in the State of North Dakota.

We have included two (2) maps and a breakdown of the location of our proposed seismic program.

If you have any questions concerning this matter, please do not hesitate to contact me at [braeden@geostrata.ca](mailto:braeden@geostrata.ca) or cellular (403) 969-5845

Best regards,

**PanAmerican Seismic Inc.**

Braeden Peters  
Field Operations Manager



North Dakota Industrial Commission  
 Department of Mineral Resources  
 Oil & Gas Division

FORM GE 1  
 FILING AUTHORIZATION

COMPANY NAME: PanAmerican Seismic Inc.  
 ADDRESS: 10700 Richmond Avenue, Suite 105  
 CITY: Houston STATE: Texas ZIP: 77042

This form authorizes the person(s) listed below to submit a NDIC Geophysical Exploration Permit – Form GE 1 for approval on behalf of the designated company as listed above.

A new authorization will be required if any changes are to be made to the authorized individuals on the form.

The data submitted from the authorized individuals listed below have been checked and conform to the standards and procedures set forth by the NDIC Department of Mineral Resources.

The authorized individual(s) will ensure that the company, as listed above, and party manager receive a copy of the approved Form GE 1

<u>Authorized Individuals</u>	<u>E-Mail Address</u>	<u>Phone Number</u>
James Switzer	James.Switzer@Harbing	403-262-1541
William Bevan	wbevan@northeastssurve	814-853-8054
Bill Peterson	petersonseismic@yahoo	989-858-0455

Company Authorized Signature: [Signature] Date: Feb 22/2016

Printed Name: MITCHELL PETERS Title: DIRECTOR

Phone: 713 537 9116 Email Address: m.peters@panamgeo.com

\*\*\*\*\*

Witness Signature: [Signature] Date: Feb 22/2016

Witness Printed Name: Braeden Peters

SEPTEMBER, 2017

WESTHOPE 2018 3D

PARAMETERS

LAYOUT

250M SOURCE LINE INTERVAL

200M RECEIVER LINE INTERVAL

50M VIBRATOR POINTS

50M RECEIVER

SOURCE

2 VIBRATORS

10 X 12 SECOND SWEEPS

8-150 HZ

PRE-EMPHASIS/FINAL SWEEP TBD

GEOPHONES

AS PER AVAILABILITY



## Parameter Summary

## Westhope 2018 3D EW Divestco

Source	source interval	50.00 m
	line spacing	250.00 m
	line direction	north-south
	number of lines	11
	source points per line	54 (average)
	total number of stations	596
	total source line	29803.07 m
	total source area	6.53 sq. km
Receiver	receiver interval	50.00 m
	line spacing	200.00 m
	line direction	east-west
	number of lines	17
	receiver points per line	38 (average)
	total number of stations	655
	total receiver line	32897.88 m
	total receiver area	5.92 sq. km