



File: OF-EP-GeopOp-T077-9224-001E 01  
22 January 2007

Lowell MacDonald  
Geophysical Operations Consultant  
Talisman Energy Inc.  
Suite 3400, 888 3<sup>rd</sup> Street SW  
Calgary, AB T2P 5C5  
Fax: (403) 237-1144

Dear Mr. MacDonald

**Talisman Energy Inc. Great Bear Plains 2007 2D Vibroseis Program**

Attached is a Geophysical Operation Authorization for the subject 355 km 2D vibroseis program. For future correspondence and reports, please quote Operational Identifier No. **9224-T077-001E**.

Talisman, as the operator, is responsible for conducting this operation in accordance with the applicable legislation, Land Use Permit conditions and this authorization. Talisman must ensure that each of its contractors is aware of the terms and conditions of this authorization.

Please provide the NEB with ample notice of start-up so that an inspector may be dispatched to view operations. Take note that the inspector may wish to attend the start-up/safety meeting.

This survey is classified as **exclusive** and the data will fall under the five year rule for data confidentiality. Talisman Energy Inc. must file a complete report to the National Energy Board as outlined in the *Geophysical Operations Regulations* **one year** after program completion. As well, several report forms and information pages are attached for your information and use.

Sincerely,

Bharat Dixit, Ph.D.  
Chief Conservation Officer

jek/Encl.

Geophysical Operation Authorization  
Terms and Conditions  
Canada Labour Code – Part XVI Information  
NT-NU Spill Report Form  
NEB Contact List  
Weekly Progress Report Form  
Hazardous Occurrence Report Form

National Energy  
Board



Office national  
de l'énergie

NATIONAL ENERGY BOARD  
Exploration and Production

DEC 17 2006

## GEOPHYSICAL OPERATION AUTHORIZATION

Applicant: Talisman Energy Inc.  
Operating Licence No.: 1157 Land Use Permit / Water Licence No.: \_\_\_\_\_  
Geographical Area: Great Bear Plains NWT  
Grids or NTS Map Sheets: 96 B, C, F, G, J and K  
Interests Identifier: Exploration Licence 436,437, 438  
Description of Operation: 2D Seismic Program

### SPECIFICS OF OPERATION

Exclusive ☒ For (if different from applicant): \_\_\_\_\_ Non-Exclusive ☐ Participation ☐ Purchase / Reprocessing ☐  
Proposed Commencement Date: 01/01/2007 Proposed Completion Date: 31/03/2007  
No. of Personnel: 79 No. of Crews: 1  
Data Acquisition Equipment: Sercel 408 Estimated Kilometres: 354.94km  
Vessel / Aircraft Names / Registration Numbers: \_\_\_\_\_  
Energy Source: Vibroseis  
Depth: 0.00m Charge Size: 0.00kg  
Source Parameters: 17m Detector Parameters: 17m

### OPERATIONAL CONTACT

Name: Lowell Macdonald Secondary Contact - Vern Krause 403-237-1270  
Address: Suite 3400, 888 3<sup>rd</sup> ST. SW Calgary, AB T2P 5C5  
Telephone: (403)231-3649 Facsimile: (403)237-1144

### ESTIMATED EXPENDITURES

	On-Interest	Off-Interest
Field Work:	<u>\$14696872.00</u>	<u>\$</u>
Data Processing:	<u>\$</u>	<u>\$245160.00</u>
Interpretation / Laboratory:	<u>\$</u>	<u>\$0.00</u>

### CONTRACTORS

Data Acquisition: Veritas Dgc Land (Yamoria Geophysical Ltd.)  
Data Processing: Veritas Geoservices  
Data Interpretation / Laboratory Studies: Inhouse

"I certify that I have complied with the notification, permitting and / or licencing requirements of all federal / territorial legislation that are applicable to this operation".

Signed: [Signature] Date: Dec 11, 2006  
Responsible Officer  
Name: Vern Krause Operator: Talisman Energy Inc.  
Title: Team Leader-Geophysical Operations Telephone: (403)237-1270

### NEB USE ONLY

This operation is authorized under Section 5.1(b) of the *Canada Oil and Gas Operations Act* (O-7) and is subject to the terms and conditions attached to this authorization.

Signed: [Signature] Date: January 22 / 07  
Chief Conservation Officer  
Operation Identifier: 9224-T077-001E Number of Attachments: \_\_\_\_\_

Canada

**Terms and conditions of the approval are as stated below:**

1. Unless otherwise directed by the Chief Conservation Officer, the operator shall implement or cause to be implemented all the policies, practices, mitigative measures, recommendations and procedures for operational safety and the protection of the environment included in or referred to in the operator's application and subsequent submissions.
2. The operator shall, within 30 days of the completion of the geophysical survey, file with the Chief Conservation Officer, a confirmation, by an officer of the company, that the approved Project was completed in compliance with all applicable conditions in the Geophysical Operation Authorization. If compliance with any of these conditions cannot be confirmed, the officer of the company shall file with the Chief Conservation Officer details as to why compliance cannot be confirmed.
3. The operator shall submit a final plan in digital format compatible with ARC GIS software for the footprint used and a map at a minimum scale of 1:250,000 for the operations.
4. The operator shall notify the NEB, by the most expedient communication means available, of any major incidents, accidents or any lost time occurrences. Any changes or updates in field contacts or Journey Management procedures in the Emergency Response Plan are to be conveyed to the NEB as soon as the changes are or updates are made. Telephone numbers are provided on the attached NEB contact list.
5. Prior to crossing or working on any body of water, not found to be frozen to bottom, the following procedures are to be followed:
  - Where practicable, electronic profiling should be utilized to determine ice thickness prior to vehicular travel;
  - Ice areas shall not be crossed or worked on until profiling indicates that the ice thickness is satisfactory as per approved company Health Safety and Environmental Manual;
  - A record of profiles shall be available upon request by the NEB Safety Officer;
  - Equipment and personnel shall not travel beyond or on ice that has not been previously tested and profiled;
  - If gas is encountered or may be expected in an area, frequency of profiling is to increase so as to identify any areas that may have been eroded due to ice thinning; and
  - If gas is found to be venting through the ice a NEB Safety Officer must be informed prior to any work being conducted in that area.
6. To promote additional safety and environmental protection, it is recommended that the spill response procedures and equipment needs be periodically reviewed and, where necessary, upgraded to ensure that these are adequate for the volumes of fuel or other materials to be stored or used.
7. Immediately reportable spills are to be reported to the NT-NU 24-Hour Spill Report Line, (867) 920-8130, fax (867) 873-6924. If Indian and Northern Affairs Canada (INAC) is assigned as lead agency, INAC will determine if its December 2003 Spill Reporting Protocol applies.

8. Weekly status reports, with the **Operation Identification No.** in the subject line, are to be emailed to [dailyreports@neb-one.gc.ca](mailto:dailyreports@neb-one.gc.ca) or faxed to the attention of the Chief Conservation Officer (fax number (403) 292-5876) by Monday 8:30 am. Please contact Lori-Ann Sharp (telephone (403) 299-1994) should there be any difficulty in delivery of the weekly status reports.
9. Final reports are required **within twelve (12) months** following termination of field work, the format and content of which are described in Part V, Section 38 of the *Canada Oil and Gas Geophysical Operations Regulations* (COGGOR). The report is to include:
  - One (1) copy of the written report and one (1) electronic copy (pdf-protatable document format).
  - A reproducible, mylar or suitable digital image (tif format is preferred), and a prefolded paper copy of each seismic line are to be submitted with the final report. The seismic lines should be suitably processed, migrated and displayed at a vertical scale of ~3.75" per second for 6 second data or ~5" per second for 4 second data with a compatible horizontal scale, with digital images **or** paper copies of both normal and reverse polarity.
  - Digital shot point location data in UKOA, SEG-P1 or any flat ANSI format is to be submitted along with a reproducible, mylar or suitable digital image (tif format is preferred) and 2 prefolded paper copies of all location maps, shot point maps, or 3D bin maps, at a suggested scale of 1:50,000.

## **CANADA LABOUR CODE**

### **Oil and Gas Occupational Safety and Health Regulations**

#### **PART XVI**

#### **HAZARDOUS OCCURRENCE INVESTIGATION, RECORDING AND REPORTING**

[SOR/94-165, s. 59(F)]

##### **Interpretation**

16.1 In this Part,

"disabling injury" means an employment injury or an occupational disease that

(a) prevents an employee from reporting for work or from effectively performing all the duties connected with the employee's regular work on any day subsequent to the day on which the disabling injury occurred, whether or not that subsequent day is a working day for that employee,

(b) results in the loss by an employee of a body member or part thereof or in the complete loss of the usefulness of a body member or part thereof, or

(c) results in the permanent impairment of a body function of an employee;

"minor injury" means an employment injury or an occupational disease for which medical treatment is provided and excludes a disabling injury. (blessure légère) SOR/94-165, s. 60.

##### **Report by Employee**

16.2 Where an employee becomes aware of an accident or other occurrence arising in the course of or in connection with his work that has caused injury to him or to any other person, he shall without delay report the accident or other occurrence to his employer, orally or in writing.

##### **Investigation**

16.3 (1) Where an employer is aware of an accident, occupational disease or other hazardous occurrence affecting any of his employees in the course of employment, the employer shall, without delay,

(a) take necessary measures to prevent a recurrence of the hazardous occurrence;

(b) appoint a qualified person to carry out an investigation of the hazardous occurrence; and

(c) notify the safety and health committee or the safety and health representative, if either exists, of the hazardous occurrence and of the name of the person appointed to investigate it.

(2) In addition to the investigation referred to in paragraph (1)(b), where the hazardous occurrence referred to in subsection (1) is an accident involving a ship or aircraft or a motor vehicle on a public road, the employer shall investigate the accident by obtaining from the appropriate police or other investigating authority a copy of the report made by that authority in respect of the accident.

(3) As soon as possible after receipt of the report referred to in subsection (2), the employer shall provide a copy thereof to the safety and health committee or the safety and health representative, if either exists. SOR/94-165, s. 61.

### **Hazardous Occurrence Report**

[SOR/94-165, s. 62(F)]

16.4 (1) The employer shall report, by the most rapid means of communication available to the employer, the date, time, location and nature of any accident, occupational disease or other hazardous occurrence referred to in section 16.3 to a safety officer and to the safety and health committee or the safety and health representative, if either exists, as soon as possible but not later than 24 hours after becoming aware of the occurrence, where the occurrence resulted in one of the following circumstances:

- (a) the death of an employee;
- (b) a missing person;
- (c) a disabling injury to an employee;
- (d) the implementation of emergency rescue, revival or evacuation procedures;
- (e) a fire or explosion that threatened the safety or health of an employee;
- (f) the free fall of an elevating device that rendered the elevating device unsafe for use by an employee;
- (g) an accidental accumulation, spill or leak of a hazardous substance; or
- (h) the loss of or damage to support craft.

(2) A written report of the accident, occupational disease or other hazardous occurrence referred to in subsection (1) shall be submitted by the employer within 14 days after the occurrence to

- (a) the regional safety officer at the regional office; and
- (b) the safety and health committee or the safety and health representative, if either exists.

(3) The report referred to in subsection (2) shall be in the form set out in Schedule I to this Part and contain the information required by the form. SOR/88-199, s. 19; SOR/94-165, s. 63.

16.5 Where an investigation referred to in subsection 16.3(2) discloses that the accident resulted in a circumstance referred to in subsection 16.4(1), the employer shall, within 14 days after the receipt of the report of the accident made by the police or other investigating authority, submit a copy of the report to the regional safety officer at the regional office.

### **Minor Injury Record**

16.6 (1) Every employer shall keep a record of each minor injury of which he is aware that affected any of his employees in the course of employment.

(2) A record made pursuant to subsection (1) shall contain

- (a) the date, time and location of the occurrence that resulted in the minor injury;
- (b) the name of the injured or ill employee;
- (c) a brief description of the minor injury; and
- (d) the causes of the minor injury.





Canada

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B OCCURRENCE DATE: MONTH – DAY – YEAR		B OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES                      MINUTES                      SECONDS			LONGITUDE DEGREES                      MINUTES                      SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						



## NEB Contacts for COGO Act-regulated Work or Activities

### INCIDENT PHONE NUMBERS

\* Hazardous occurrences (under Part XVI of the *Canada Oil and Gas Occupational Safety and Health Regulations*) and incidents requiring medical evacuation are to be reported to the NEB immediately.

**NEB 24-hour Incident Cell:** (403) 807-9473  
**NWT/Nunavut Spill Line Phone:** (867) 920-8130  
**NWT/Nunavut Spill Line Fax:** (867) 873-6924  
**Transportation Safety Board Hotline:** (819) 997-7887

NEB Operations Staff	Internet	Telephone Numbers
<b>Rick Turner</b> Operations Specialist Safety & Conservation Officer	<a href="mailto:rturner@neb-one.gc.ca">rturner@neb-one.gc.ca</a>	Work: (403) 299-3868 Cell: (403) 540-3754 Home: (403) 257-0840
<b>Chris Knoechel</b> Petroleum Engineering Specialist Safety & Conservation Officer	<a href="mailto:cknoechel@neb-one.gc.ca">cknoechel@neb-one.gc.ca</a>	Work: (403) 299-3866 Cell: Home: (403) 241-0047
Environment and Spill Reporting	Internet	Telephone Numbers
<b>John Korec</b> Environmental Specialist Conservation Officer	<a href="mailto:jkorec@neb-one.gc.ca">jkorec@neb-one.gc.ca</a>	Work: (403) 292-6614 Cell: (403) 818-2403 Home: (403) 275-6256
<b>Anne-Marie Buchwald</b> Environmental Specialist	<a href="mailto:abuchwald@neb-one.gc.ca">abuchwald@neb-one.gc.ca</a>	Work: (403) 292-4931 Cell: Home: (403) 366-9899
<b>Pam Romanchuk</b> Environmental Specialist	<a href="mailto:promanchuk@neb-one.gc.ca">promanchuk@neb-one.gc.ca</a>	Work: (403) 299-3906 Cell: Home: (403) 253-3128
Chief Conservation & Safety Officers	Internet	Telephone Numbers
<b>Bharat Dixit</b> Exploration and Production, Team Leader Chief Conservation Officer	<a href="mailto:bdixit@neb-one.gc.ca">bdixit@neb-one.gc.ca</a>	Work: (403) 299-2792 Cell: (403) 617-3887 Home: (403) 239-1093
<b>Alan Murray</b> Professional Leader, Engineering Chief Safety Officer	<a href="mailto:amurray@neb-one.gc.ca">amurray@neb-one.gc.ca</a>	Work: (403) 299-3903 Cell: (403) 815-6661 Home: (403) 282-5637
<b>NEB OPERATIONS PHONE NUMBERS</b>	<b>Main Office:</b> (403) 292-4800 <b>Operations Fax:</b> (403) 292-5876 <b>Alternate Fax:</b> (403) 292-5875	

# WEEKLY PROGRESS REPORT

PROGRAM NAME: \_\_\_\_\_ PERIOD \_\_\_\_\_ TO \_\_\_\_\_

## APPROVALS

	NATIONAL ENERGY BOARD	INDIAN & NORTHERN AFFAIRS CANADA		SAHTU LAND & WATER BOARD
OPERATION ID#				
EXP. DATE				

COMPANY NAME: \_\_\_\_\_

SEISMIC CONTRACTOR: \_\_\_\_\_

## AUTHORIZED PROGRAM PARAMETERS

ALTERATION OR MODIFICATION OF THE APPROVED PARAMETERS REQUIRES APPROVAL FROM APPROPRIATE REGULATORY AGENCY

TOTAL # OF 2D Km APPROVED		3D SIZE KM SQ APPROVED		SOURCE TYPE	
TOTAL # OF LINES 2D APPROVED		NUMBER 3D SOURCE LINES		CHARGE SIZE/# VIBS	
RECEIVER WIDTH		3D SOURCE Km		SHOT HOLE DEPTH (m)	
SOURCE WIDTH		NUMBER 3D REC. LINES		CAP LEAD LENGTH (m)	
		3D RECEIVER Km		CAP LEAD LENGTH ABOVE GROUND (m)	

<b>UNDETONATED CHARGES:</b>	
LOCATION: (NAD 27)	
REASON:	

<b>INSPECTIONS: (INAC, NEB, ILA,DFO)</b>	
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<b>OPERATIONAL ISSUES:</b>	
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<b>SUMMARY OF INCIDENTS: (eg: fuel spills, vehicles breaking through ice)</b>	
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<b>GENERAL COMMENTS:</b>	
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<b>LAT. / LONG. STAGING AREAS</b>	
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<b>LAT. / LONG. CAMP LOCATIONS</b>	
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DATE SUBMITTED TO: INAC  NEB     
 For Sahtu >> descenes@inac.gc.ca dailyreport@neb-one.gc.ca

PARTY MANAGER: \_\_\_\_\_

FIELD FAX \_\_\_\_\_

FIELD PHONE# \_\_\_\_\_

FIELD E-MAIL \_\_\_\_\_

ACTIVITY DURING REPORTING PERIOD



<b>1. Type of Occurrence / Genre de situation</b> <input type="checkbox"/> Explosion <input type="checkbox"/> Loss of consciousness / Perte de conscience <input type="checkbox"/> Disabling injury / Blessure invalidante <input type="checkbox"/> Emergency procedure / Procédure d'urgence <input type="checkbox"/> Other (specify) / Autre (préciser) _____		<b>2. Department file no. / N° de dossier du ministère</b> _____ Regional or district Office / Bureau régional ou de district _____ Employer ID no. / Numéro d'identification de l'employeur _____	
<b>3. Employer name and mailing address / Nom et adresse postale de l'employeur</b> _____ _____ _____		Postal code / Code postal _____ Telephone number / Numéro de téléphone _____	
Site of hazardous occurrence / Lieu de la situation comportant des risques _____ _____ _____	Date and time of hazardous occurrence / Date et heure de la situation comportant des risques _____ Weather / Conditions météorologiques _____		
Witnesses / Témoins _____ _____ _____	Supervisor's name / Nom du surveillant _____ Operator / Exploitant _____		
Identification of drilling rig, drilling unit, production facility or support craft / Identification de l'appareil de forage, installation de forage, installation de production ou du véhicule de service _____ _____			
<b>4. Description of what happened / Description des événements</b> _____ _____ _____ _____			
Brief description and estimated cost of property damage / Description sommaire et coût estimatif des dommages matériels _____ _____		Operation in progress / Opération en cours _____	
<b>5. Injured employee's name (if applicable) / Nom de l'employé blessé (s'il y a lieu)</b> _____		Age / Âge _____	Sex / Sexe _____
Occupation / Profession _____		Years of experience in occupation / Nombre d'années d'expérience dans la profession _____	
Description of injury / Description de la blessure _____ _____ _____			
Was training in accident prevention given to injured employee in relation to duties performed at the time of the hazardous occurrence? / L'employé blessé a-t-il reçu une formation en prévention des accidents relativement aux fonctions qu'il exerçait au moment de la situation comportant des risques? <input type="checkbox"/> Yes <input type="checkbox"/> No    Specify Oui    Non    Préciser			
<b>6. Direct causes of hazardous occurrence / Causes directes de la situation hasardeuse</b> _____ _____ _____			
<b>7. Corrective measures and date employer will implement / Mesures correctives qui seront appliquées par l'employeur et date d'entrée en vigueur</b> _____ Reasons for not taking corrective measures / Raisons pour lesquelles aucune mesure corrective n'a été prise _____ Supplementary preventative measures / Mesures supplémentaires de prévention _____			
<b>8. Name of person investigating / Nom de la personne menant l'enquête</b> _____		Signature _____	Date _____
Title / Titre _____		Telephone number / Numéro de téléphone _____	
<b>9. Safety &amp; Health committee's or representative's comments / Observations du comité de sécurité et de santé ou du représentant en matière de sécurité et de santé</b> _____ _____ _____			
Committee member's or representative's name / Nom du membre du comité ou du représentant _____		Signature _____	Date _____
Title / Titre _____		Telephone number / Numéro de téléphone _____	