

August 20th, 2007

Via facsimile: 250 356-6677
Ministry of the Environment
3rd floor, 808 Douglas Street
PO Box 9336 Stn Prov Govt
Victoria V8W 9M1

Attention: Peter Smith, Director, Information, Privacy and Records Office

Re: Documents related to Royal Dutch Shell's access to their tenure in the Sacred Headwaters area of northern BC

Dear Mr. Smith,

Pursuant to the *Freedom of Information and Protection of Privacy Act*, ("the Act", RSBC 1996, c. 165), I hereby request the following documents:

- All records, including email, memos, letters, minutes or other documents whatsoever, sent or received, or in the possession of the Ministry of the Environment touching on or relating to Shell's access (e.g. use of roads, railway grades, etc.) to their resource tenure in the Sacred Headwaters area of northern BC.

Best regards,

Eric Swanson
Researcher

(250) 381-3226 ext. 27
eswanson@dogwoodinitiative.org





December 28, 2007

File: 292-30\MOE07.140

Eric Swanson
Dogwood Initiative
PO Box 8701
Victoria, BC V8W 3S3

Dear Eric Swanson:

**Re: *Freedom of Information and Protection of Privacy Act (the Act)*
Request for Records – All records in the possession of the Ministry of Environment touching on or relating to Shell's access (eg. use of roads, railway grades, etc.) to their resource tenure in the Sacred Headwaters area of northern BC.**

This letter is further to your request for records received August 20, 2007. I am pleased to provide you with a copy of the records you requested. I apologize for the delay in responding and regret any inconvenience this may have caused.

This now completes your request. If you feel that your request has not been answered completely, or that you require further clarification, please contact me. If I cannot address your concerns, you have the right to ask the Information and Privacy Commissioner to review our decision. Please see enclosure for further information on the review and complaint process.

.../2

Eric Swanson

-2-

December 27, 2007
File: 292-30/MOE07.140

Yours truly,

A handwritten signature in black ink, appearing to read "P. Smith". The signature is fluid and cursive, with a large initial "P" and "S".

Peter J. Smith, Director
Information, Privacy, and Records

Enclosure

Enclosure

REVIEWS AND COMPLAINTS

Under section 52 of the *Freedom of Information and Protection of Privacy Act* (the Act), you may ask the Information and Privacy Commissioner to review this public body's decision, act or failure to act as it relates to this request. The Act allows you 30 days from the day you receive this notice to request a review by writing to:

Information and Privacy Commissioner
PO Box 9038, Stn. Prov. Govt
3rd Floor, 756 Fort Street
Victoria BC V8W 9A4

Telephone number: (250) 387-5629
Facsimile number: (250) 387-1696
Website: www.oipc.bc.ca

If you wish to request a review, please provide the Commissioner's office with:

- 1) the request number assigned to your request (the "file number" quoted at the top of our letter);
- 2) a copy of our response letter; and
- 3) a copy of your original request for records that you sent to this public body.

You may also ask the Commissioner to investigate matters subject to a complaint under section 42(2) of the Act, e.g., time extensions not in accordance with the Act and fee estimates which you feel may be inappropriate.



OIL AND GAS COMMISSION

OGC File: 9624966 (Amendment)

August 20, 2007

Shell Canada Limited
400 - 4th Avenue, SW
PO Box 100, Station M
Calgary, Alberta
T2P 2H5

Attention: Moss Giasson, Environmental Planner c/o Prospect Land Services (BC) Ltd.

RE: Oil and Gas Commission Act, Section 17, "Specified Enactment"
Conditional Approval of Application For Changes In and About a Stream
Water Act, Section 9

Pursuant to your application to undertake access road repairs, stream crossing installations and stream bank remediation works within the Klappan and Skeena River watersheds necessary to improve the Ealue Lake Road and Skeena River Rail Grade for access into the Klappan Tenure, the Oil and Gas Commission has reviewed the captioned referral and has the following response:

1. This permit does not constitute an approval under the *Federal Fisheries Act of Canada*.
2. This approval does not authorize any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat, described within the *Federal Fisheries Act of Canada*. Any such works require an authorization from the Federal Department of Fisheries and Oceans. Nor does this approval constitute an authorization under the Navigable Waters Protection Act of Canada.
3. This approval does not authorize entry on privately held or occupied or unoccupied Crown land.

CONDITIONS:

NOTE: This approval amends and replaces the original approval (OGC File: 9624966) dated March 15, 2007, which is now considered null and void.

1. Access road repairs, stream crossing installations and associated streambank stabilization and remediation works must comply with all relevant Best Management Practices and mitigation measures outlined in the Stream Crossing Planning Guide (Northeast BC) (the Guide), in addition to any guidance provided by the Department of Fisheries and Oceans Canada (i.e. Operational Statements, Letters of Advice, etc.).

2. Only those stream crossings and/or work sites identified in the attached "Application For Changes In And About A Stream" dated August 3, 2007 (Revised version, Pages 1 to 5) and illustrated on 1: 20,000 scale map titled "Road Washout Sites along the Ealue Lake Road and Rail Grade, July 2007" (Figure 1, dated July 25, 2007 by Rescan) and 1:100,000 and 1:75,000 scale maps titled "PROPOSED 2007 INSTREAM WORK AREAS FROM EALUE LAKE TO MOUNT KLAPPAN" and "PROPOSED 2007 INSTREAM WORK AREAS IN THE SKEENA WATERSHED," (both dated February, 2007 by TERA Environmental Consultants), are authorized under this approval. No other crossings or works are approved without the prior written consent of the Oil and Gas Commission.
3. A variance to the Guide is granted to undertake in-stream activities outside of the July 15th – August 15th fisheries in-stream work window cited in the Guide, **provided that a qualified environmental monitor(s) is onsite for all stream crossing repairs/installations and bank remediation works.** This individual must have an appropriate background and experience in fish ecology/habitat protection and have the authority to issue a work stoppage order if fish or fish habitat is determined to be at risk.
4. If field conditions do not permit the construction of a stream crossing method identified in the Guide; or, if adherence to the Guide and the Best Management Practices outlined therein cannot be achieved, a variance to the Guide must be approved by the Oil and Gas Commission prior to proceeding with the stream crossing or instream works.
5. Project activities must not damage or destroy any aquatic furbearer (i.e. beaver, muskrat or mustelid) dam, house or den. If an activity does not ensure the protection of these habitat features, an amendment must be submitted to the Oil and Gas Commission and approval received before conducting the activity.
6. Shell Canada Limited must ensure that any construction activities undertaken at stream crossing location B do not directly or adversely impact the beaver pond occurring upstream of the crossing. If remediation activities at this site cannot be completed as approved, activities must cease and the Oil and Gas Commission contacted to modify the project, with written authorization received before proceeding with the change.
7. Shell Canada Limited is encouraged to research and if feasible, install a beaver guard on the culvert at stream crossing location B to prevent future damming of the culvert by beavers. Monitoring of such a structure is imperative to ensure its continued functionality.
8. Where stream crossing repairs/installations and bank remediation construction activities have resulted in the exposure of mineral soil, disturbed areas must be re-contoured and re-seeded/planted using all appropriate measures to stabilize the site and facilitate its return to a vegetated state.

9. In the event that site conditions do not permit the works to proceed as outlined in this application, or if there is a risk that environmental damage may occur as a result of the planned activities, an amendment to this application must be applied for and authorization received from the Oil and Gas Commission prior to the revised works proceeding.
10. All waste materials from construction activities must be contained as work progresses and removed from the site upon project completion.
11. Post construction monitoring of the stream crossings and bank remediation worksites must be undertaken to ensure the streambed/streambanks are not exhibiting signs of erosion, which could adversely impact the aquatic ecosystem.
12. Shell Canada Limited must notify the Oil and Gas Commission (Jack Cann, Regional Compliance Manager – North Region, Fort Nelson field office 250-774-5501) and Ministry of Forests and Range (Claus Rygaard, Timber Tenure Specialist, Cassiar Field Office - Dease Lake 250-771-3143) 48 hours prior to the commencement of project construction.
13. A brief post-construction summary report must be submitted to the Oil and Gas Commission (OGC) within 30 days following the completion of all proposed works approved under this permit. This document must include a description of site conditions during in-stream works, results of any fish salvage work (if required), and photos of the access road repairs, stream channel/bed and banks, immediately following the prescribed works. This document can be forwarded to the OGC Fort St. John office (Attention: Tim Paull, Oil and Gas Resource Officer – North and Central West Regions).

Tim Paull
Oil and Gas Resource Officer
North and Central West Regions

Diemert, Karen ENV:EX

From: Diemert, Karen ENV:EX
Sent: Friday, August 17, 2007 10:46 AM
To: 'Giasson, Moss SCAN'
Subject: Klappan 2007 Program

Hello Moss:

I've left you a voice mail and I'm following with this e-mail.

I have received a letter from Kathy Penney outlining Shell's proposal for work in the Klappan commencing soon. It reminds me that you and I were to get together when you returned from the Klappan area. But due to everyone's hectic schedules, that didn't happen.

When you visited in my office a couple of weeks ago with an update, you had a map with 80 locations marked on it as areas where work along the rail grade is required. You said you'd get me a copy of that map and have all the fish sensitive areas and other information compiled into one map and send it to me. I would still like that map so if you could get it to me it would be much appreciated.

At the same time please send a copy of the Water Approvals that have been issued via the OGC. We should keep a copy here for our files. The OGC doesn't send them here. Paul Christensen, DFO, has sent a copy of the DFO letter issued yesterday.

Thanks for the assistance Moss.

Karen A Diemert BSc
Section Head, Ecosystems
Environmental Stewardship Division
Ministry of Environment
Skeena Region

Phone: 250 847 7300

Fax: 250 847 7728

e-mail: karen.diemert@gov.bc.ca

Mailing address: 3726 Alfred Avenue PO Bag 5000 Smithers BC V0J 2N0



Fisheries and Oceans Pêches et Océans
Canada Canada

Oceans Habitat and Enhancement Branch
Yukon Transboundary Rivers Area
100-419 Range Road
Whitehorse Yukon
Y1A 3V1

August 16, 2007

Your file Votre référence

Our file Notre référence
07-HPAC-PA5-000-000057

Moss Giasson, Environmental Planner
Shell Canada Energy
400 – 4th Ave SW
Calgary, Alberta
T2P 2H5

Dear Mr. Giasson:

Subject: Proposed works or undertakings will not likely result in negative effects to fish habitat if additional protection measures are implemented.

Fisheries and Oceans Canada (DFO) received your proposal on August 9, 2007 to conduct bank stabilization and other repairs to various portions of the Ealue Lake Road. To expedite future correspondence or inquiries, please refer to your referral title and file numbers when you contact us.

Referral File No.: 07-HPAC-PA5-000-0000057
Referral Title: Ealue Lake Road Repairs

It is our understanding that your proposal consists of:

- *Constructing banks stabilization works at two locations along the Klappan River;*
- *Repairing washed out road portions adjacent to bridge abutments;*
- *Replacing a non-functional culvert with a temporary clear span bridge;*
- *Conducting repairs to a failing culvert.*

as outlined in the following plans:

- *Cover letter from Moss Giasson, Shell Canada Energy, dated August 9, 2007 to Paul Christensen entitled "Letter of Advice Request"*
- *Document entitled "DFO Application, Temporary Road Access Work Description" not dated, and no author indicated;*
- *Document entitled "Re: Washout Assessments along Ealue Lake Road" dated August 7, 2007 and authored by Rescan Environmental Services Ltd.*

- *Engineered plans authored by Allnorth Consultants Limited entitled "Ealue Lake Road, Klappan River, km 1+000 (Local Chainage) Site A and B.*

We have reviewed your proposal under the habitat protection provisions of the *Fisheries Act*. The measures described in your plans are not adequate to protect fish and fish habitat. Therefore, please ensure that the following additional measures are incorporated into your plans:

- Instream work should only occur prior to August 31 of this year (2007). Any requirement to work beyond that date should be discussed with DFO prior to continuation of work;
- Disturbed areas should be stabilized as soon as possible after construction, and effective, long-term erosion control measures should be implemented.
- Effective temporary and permanent erosion and sediment control measures should be implemented on disturbed areas during and after construction to prevent sediment from entering any watercourse. These measures should be implemented and installed prior to the start of construction. This may require the use of a turbidity curtain to ensure that sediment does not enter watercourses;
- Excavated materials and debris should be disposed of above the high water mark and located such that they do not enter any watercourse;
- Only clean coarse material (i.e. rip rap) should be used for construction material. All fill material should be obtained from off-site and not from below the average high water level of any watercourse;
- Rip rap should follow an uneven shoreline profile;
- Rip rap should be placed by equipment, not dumped;
- All machinery should work above the high water mark;
- Heavy machinery should be operated in a manner that minimizes disturbance to the bed and banks of any waterbody;
- Machinery should be washed, refuelled and serviced well away from any waterbody to prevent and deleterious substances from entering the watercourse;

By implementing these additional measures, it is our opinion that the proposed works and undertakings will not likely result in the harmful alteration, disruption or destruction (HADD) of fish habitat, which is prohibited unless authorized by DFO. These are recommendations to ensure that the proposed works will likely not result in a HADD of fish habitat. Therefore a subsection 35(2) authorization is not necessary.

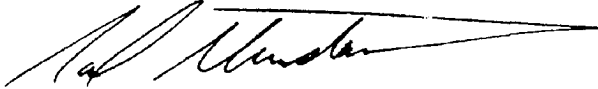
You could contravene subsection 35(1) of the *Fisheries Act* if a HADD of fish habitat results from any change in your proposed plan or from failure to properly implement these additional measures. Subsection 35(1) states, "*no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.*"

This letter of advice does not permit the deposit of a deleterious substance into waters frequented by fish nor does it release you from the responsibility to obtain any other federal (for example, the *Navigable Waters Protection Act*), territorial or municipal approvals.

If these plans have changed since the time of submission, the advice in this letter may no longer apply and you should consult with us to determine if further review is required.

We request that you keep a copy of this letter on site while work is in progress. If you have any questions concerning the above, or if my understanding of the proposal is either incorrect, incomplete, or if there are changes to the proposed works or undertakings, please contact me directly by telephone at (867) 393-6730, or by fax at (867) 393-6737.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Paul Christensen", with a long horizontal flourish extending to the right.

Paul Christensen
A/Senior Habitat Biologist
Habitat Management Division
c.: Conservation and Protection Branch, Fisheries & Oceans Canada
RHM, Pacific Region, Fisheries and Oceans Canada

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AUG 1 2007

PROVINCE OF BRITISH COLUMBIA
SMITHERS BC



Shell Canada Energy 400 - 4th Avenue SW
P.O. Box 100, Station M
Calgary, Alberta, T2P 2H5
TEL (403) 691-3111

August 6, 2007

Subject: Commencement of the Shell Klappan 2007/2008 Field Program

As you are aware, Shell is preparing to begin its proposed coalbed gas exploration field program this summer. The exploration field program was licensed from 2005 to 2007 by the B.C. Oil and Gas Commission, and will begin with re-entry of two of our wells drilled in 2004, and the drilling of new wells.

We are still at the early stages of exploration in the Klappan, and the objective of our work plan is to gather information about the ability to produce natural gas in the area. While we have licenses to drill up to 14 wells, any decision to proceed with the full program will be based upon operational results and weather conditions.

Commencement of 2007/2008 Field Work

We anticipate that our exploration program will begin in early August, starting with Ealue Lake Road repairs. Shell's program activities will include:

- road repairs;
- camp construction and use;
- construction, drilling, testing and flaring of wells;
- sump construction and use;
- construction of communication towers;
- reclamation;
- quarrying and blasting for rock and gravel; and
- withdrawal of small amounts of water from streams to support operations

For the most part, Shell will be using previously disturbed locations along the Ealue Lake road and railbed for these activities. Shell will not be creating any new access into the Klappan for the 2007/2008 program.

Shell has made a commitment to the Tahltan leadership to maximize the local benefits of any of our work in the area, and to the greatest extent possible we will use local Tahltan suppliers and contractors to perform the proposed work.

Schedule

Weather permitting; Shell expects that personnel and equipment will be brought into the area according to the following schedule:

- July 2007: scouting of the Ealue Lake Road and abandoned railway bed
- August 2007: mobilization of construction equipment
- Fall 2007: repair access road, construct camp, put up radio-communication towers
- December 2007 - 2008: drilling and testing wells

Ealue Lake Road Repairs

Shell will access the Klappan Area using the Ealue Lake Road (located off Highway 37) as well as the abandoned rail bed. As indicated in our last letter, the road and rail bed were significantly damaged this year as a result of spring run-off. Repairs to the Ealue Lake Road and the abandoned railway bed are needed to bring equipment into the project area safely.

The Ealue Lake Road and railbed have been washed away at km 24 and 29, and the road is currently impassible by vehicle beyond km 24. Shell estimates that it will take approximately 100 days to replace these stretches of road, and for safety reasons, the road will remain impassible by vehicle beyond these locations while we are conducting our repairs.

Once the road at kms 24 and 29 has been repaired, additional roadwork will be required to another 140 km of road along the railbed. The repair work will include: grading, brushing, removing debris, installing signs, replacing culverts, repairing bridge abutments, and armouring areas at risk of erosion. We recognize the cultural significance of the Klappan area to the Tahltan and will try to accommodate local traffic when conducting these activities. However, during these road repairs, Shell will have to carefully manage traffic for safety reasons and some of our activities may result in temporary delays to users of the road. Shell will notify road users of any significant delays.

Environmental Work

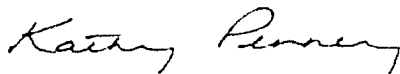
Shell will also be conducting a number of environmental studies this year, including studies on:

- wildlife habitat;
- fish habitat in the Skeena;
- fish sampling in the Skeena and Nass;
- local fisheries assessments to support our permits;
- water quality; and
- traditional knowledge.

Through Rescan Tahltan Environmental Consultants, there will be local Tahltan hired to serve as Environmental Monitors during our 2007/2008 Field Program.

More information regarding our construction work on Ealue Lake Road and the rail bed will be contained in our next Klappan Bulletin, scheduled for distribution by mid-August. If you have any questions, or would like to discuss our 2007 Exploration Program or other matters, please don't hesitate to contact John Brown at our Dease Lake office 1-250-771-3151 or our new toll free information number 1-888-262-1979.

Best Regards,



Kathy Penney
Klappan Commercial and Regulatory Manager

CC: Chiefs & Council

Tahltan Central Council
PO Box 69
Dease Lake, BC
V0C 1L0

Iskut First Nation
PO Box 30
Iskut, BC
V0J 1K0

Tahltan Band Council
PO Box 46
Telegraph Creek, BC
V0J 2W0

- permits & map → from Mrs Giasson

Diemert, Karen ENV:EX

From: Diemert, Karen ENV:EX
Sent: Monday, July 23, 2007 10:41 AM
To: Kelly, Loren M FOR:EX; Rygaard, Claus FOR:EX
Subject: SUP for the Klappan Rail Grade and Ealue Lake Road
Importance: High

Loren and Claus:

I'm in receipt of a letter from Shell Canada concerning road washouts and repairs required to the Klappan Rail Grade and Ealue Lake Road. They are going in to assess the damage and decide whether repairs can be conducted to provide them access into their proposed drill sites.

I know that Fortune Minerals held a SUP for the rail grade/Ealue Lake Road. Is that still the case? If not is Shell being issued a SUP for the rail grade/Ealue Lake road? If Shell comes back for approvals through the Water Act, I'll need to know what authority they have for the road .

If you have a current SUP for the roads, please pass it along to me.

Thanks for the help.

Karen A Diemert BSc
Section Head, Ecosystems
Environmental Stewardship Division
Ministry of Environment
Skeena Region

Phone: 250 847 7300
Fax: 250 847 7728
e-mail: karen.diemert@gov.bc.ca
Mailing address: 3726 Alfred Avenue PO Bag 5000 Smithers BC V0J 2N0

Loren Kelly -

Fortune Minerals has the SUP -

Shell has permission from Oil + Gas
commission to use the road.

Fortune Minerals has only use of
existing + new for more land ...



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JUL 19 2007

SMITHERS BC

Shell Canada Energy
400 - 4th Avenue S.W.
P.O. Box 100, Station M
Calgary, Alberta T2P 2H5
Internet www.shell.ca

June 27, 2007

Subject: Shell's 2007 activity in the Klappan area

As you are aware, Shell is preparing to proceed with its proposed 2007 coalbed gas exploration program this summer. The 2007 exploration program was fully licensed in 2005/2006 by the British Columbia Oil and Gas Commission, and includes a program that will consist of the re-entry of two of our wells drilled in 2004, and the drilling of a few new wells.

Shell had intended to access the Klappan using the Ealue Lake Road (located off Highway 37) as well as the abandoned rail bed. However, as you may be aware, the road, rail bed and bridges have been significantly damaged this year as a result of spring run-off. I have attached some photographs of the road, rail bed and bridges that we took the week of June 18, 2007. The week of July 2, 2007, we will be conducting an engineering integrity inspection of the road, rail bed and bridges to determine whether they can be repaired to provide for safe access during the 2007 program, and what work would be required. After reviewing the results of next week's inspection, I will provide you with an update of our plans for access.

In the interim, if you have any questions or comments, please don't hesitate to contact John Brown (at our Dease Lake office 250-771-3151) or Doug Ford of our Public Consultation group, through our new toll free information number at 1-888-262-1979.

Best Regards,

Kathy Penney 403 691-4542
Klappan Commercial and Regulatory Manager

Moss Grasson - Env. Mgr.

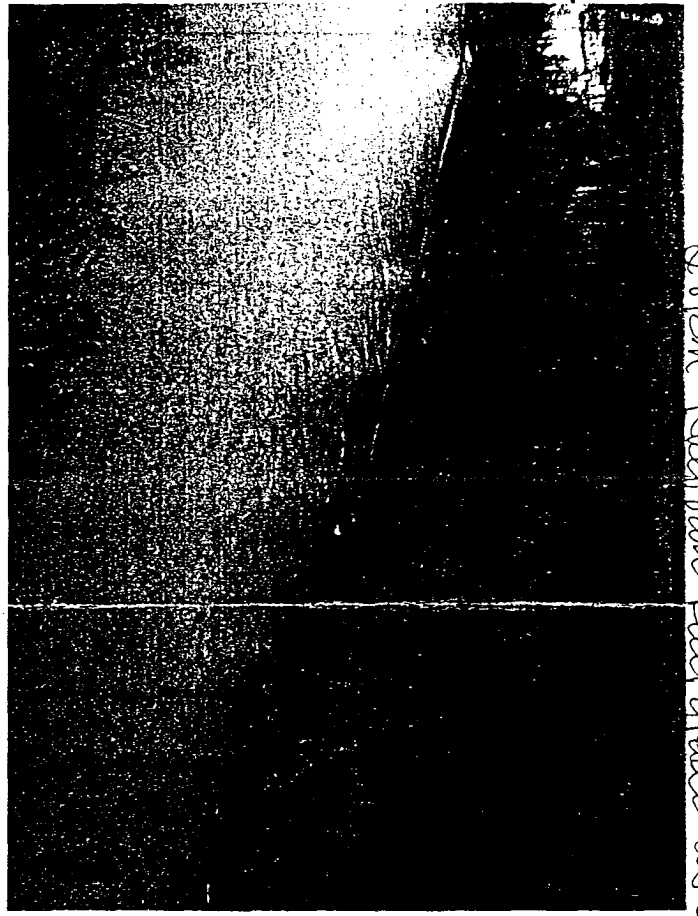
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Attention: Chiefs and Council

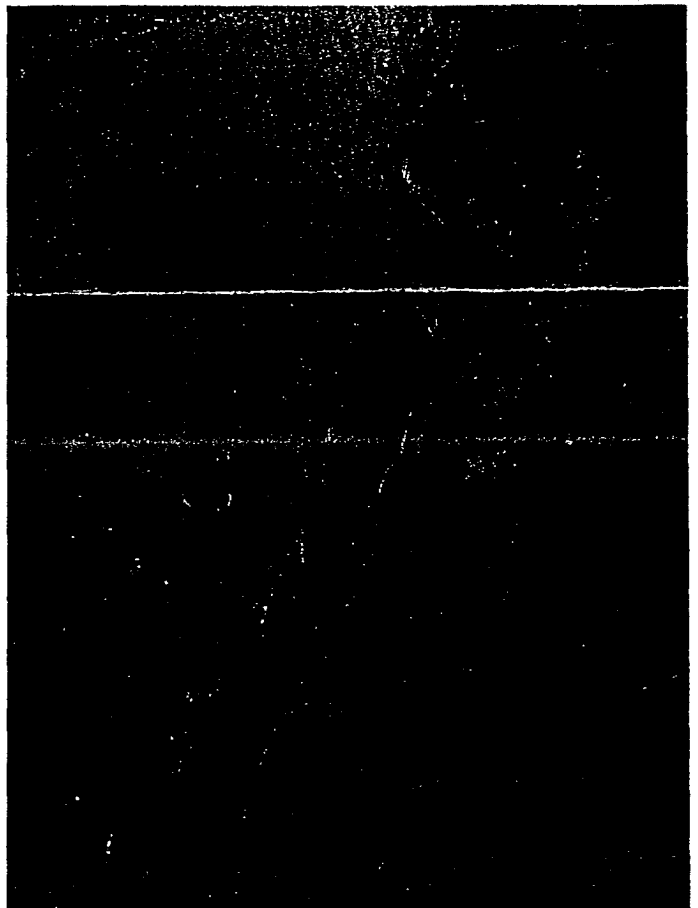
Tahltan Central Council
PO Box 69
Dease Lake, BC
V0C 1L0

Iskut First Nation
PO Box 30
Iskut, BC
V0J 1K0

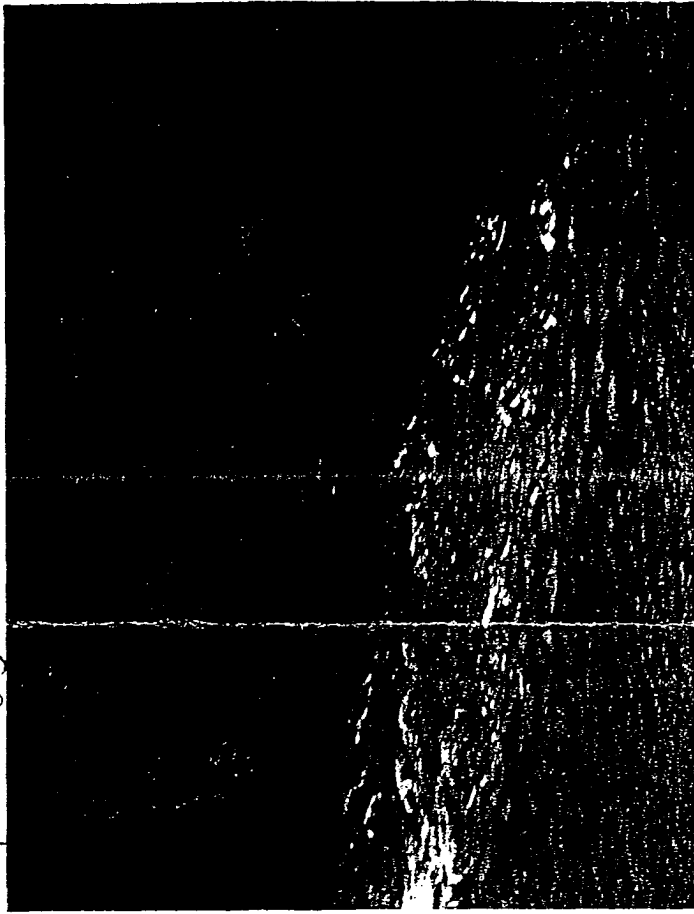
Tahltan Band Council
PO Box 46
Telegraph Creek, BC
V0J 2W0



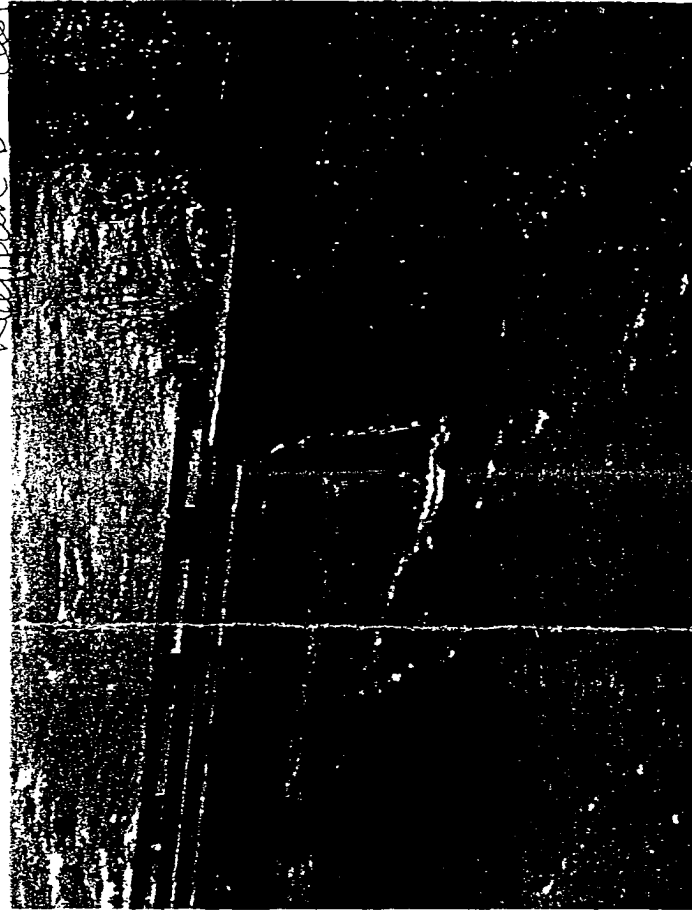
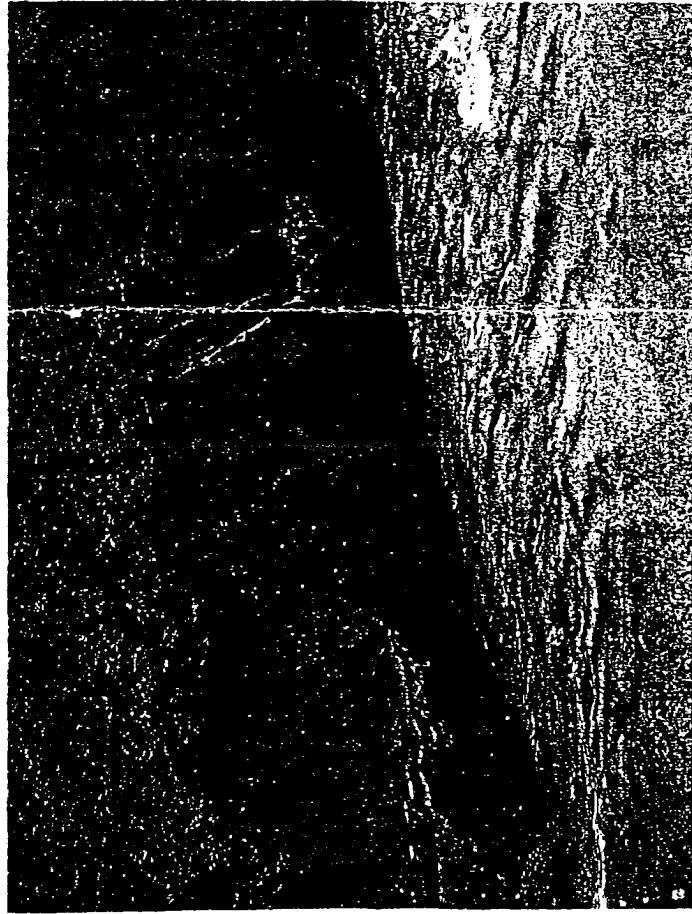
28 km Kapanan Peil anadi 250m ~



on E. side of Rd 100m long - Km 23



Manzan B. - east side



43250-29/60M.D.S.D
METHUEN

REVIEWED	
Date:	<u>July 27/07</u>
By:	<u>[Signature]</u>
Response	
<input checked="" type="radio"/> none	<input type="radio"/> e-mail / phone / letter
routing sheet	



Shell Canada Energy 400 - 4th Avenue SW
P.O. Box 100, Station M
Calgary, Alberta, T2P 2H5
TEL (403) 691-3111

August 6, 2007

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PROVINCE OF BRITISH COLUMBIA

AUG 1 4 2007

SMITHERS BC

Schedule

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Environmental Work

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- wildlife habitat;
- fish habitat in the Skeena;
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- local fisheries assessments to support our permits;
- water quality; and
- traditional knowledge.

01/19/07

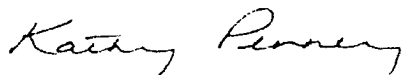
8:11 AM

01/19/07

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Best Regards,



Kathy Penney
Klappan Commercial and Regulatory Manager

CC: Chiefs & Council

Tahltan Central Council
PO Box 69
Dease Lake, BC
V0C 1L0

Iskut First Nation
PO Box 30
Iskut, BC
V0J 1K0

Tahltan Band Council
PO Box 46
Telegraph Creek, BC
V0J 2W0



43250-20 Klappan

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PROVINCE OF BRITISH COLUMBIA

CBM

JUL 19 2007

SMITHERS BC

Shell Canada Energy
400 - 4th Avenue S.W.
P.O. Box 100, Station M
Calgary, Alberta T2P 2H5
Internet www.shell.ca

June 27, 2007

Subject: Shell's 2007 activity in the Klappan area

As you are aware, Shell is preparing to proceed with its proposed 2007 coalbed gas exploration program this summer. The 2007 exploration program was fully licensed in 2005/2006 by the British Columbia Oil and Gas Commission, and includes a program that will consist of the re-entry of two of our wells drilled in 2004, and the drilling of a few new wells.

Shell had intended to access the Klappan using the Ealue Lake Road (located off Highway 37) as well as the abandoned rail bed. However, as you may be aware, the road, rail bed and bridges have been significantly damaged this year as a result of spring run-off. I have attached some photographs of the road, rail bed and bridges that we took the week of June 18, 2007. The week of July 2, 2007, we will be conducting an engineering integrity inspection of the road, rail bed and bridges to determine whether they can be repaired to provide for safe access during the 2007 program, and what work would be required. After reviewing the results of next week's inspection, I will provide you with an update of our plans for access.

In the interim, if you have any questions or comments, please don't hesitate to contact John Brown (at our Dease Lake office 250-771-3151) or Doug Ford of our Public Consultation group, through our new toll free information number at 1-888-262-1979.

Best Regards,

Kathy Penney
Klappan Commercial and Regulatory Manager

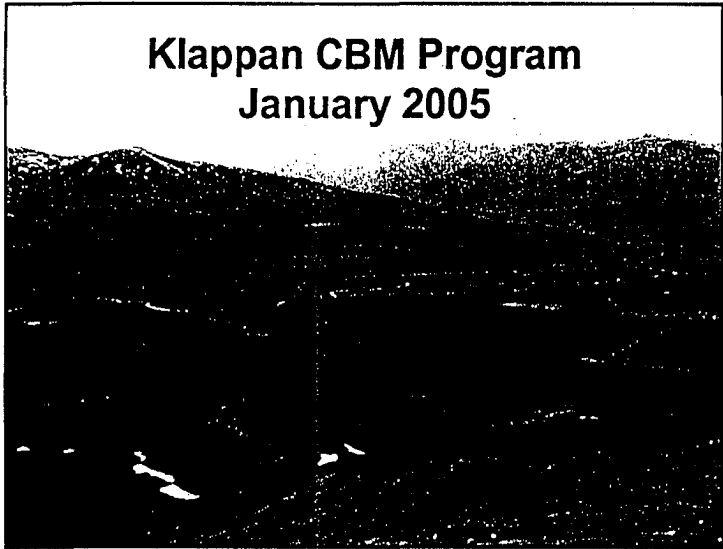
CC:

Attention: Chiefs and Council

Tahltan Central Council
PO Box 69
Dease Lake, BC
V0C 1L0

Iskut First Nation
PO Box 30
Iskut, BC
V0J 1K0

Tahltan Band Council
PO Box 46
Telegraph Creek, BC
V0J 2W0



Shell Canada Unconventional Gas

Our Agenda Today

- Shell experience in other areas
- Shell's current view of environmental aspects
- What is CBM?
- Shell's sustainable development framework
- Klappan Project
 - General Overview
 - Results of 2004 Klappan Drill Program
 - Klappan 2005 Program
- Questions

January 10, 2005 Klappan CBM Program September 2004

Shell Canada Unconventional Gas


Objectives

- Discuss Shell Oil & Gas business practices
- Discuss Shell's approach to Coalbed Methane
 - In the early exploration phase
- Introduce Klappan project

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Shell Canada Unconventional Gas

Shell Canada Limited



- Shell employs approximately 3,800 people at its Calgary head office and operating locations across the country.
- Major integrated petroleum company
 - new oil sands business
- Exploration and Production
 - four natural gas processing facilities in the Foothills
 - In-situ oil sands project near Peace River
 - share of the Sable Offshore Energy Project, Nova Scotia

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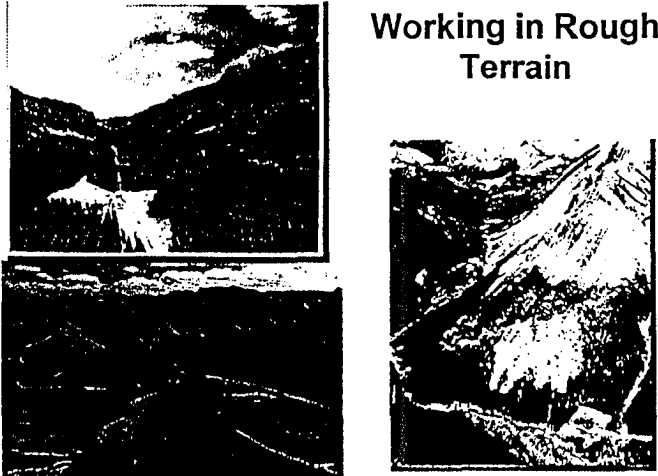
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Shell Canada's Experience

January 10, 2008 Wapiti CBM Program September 2004

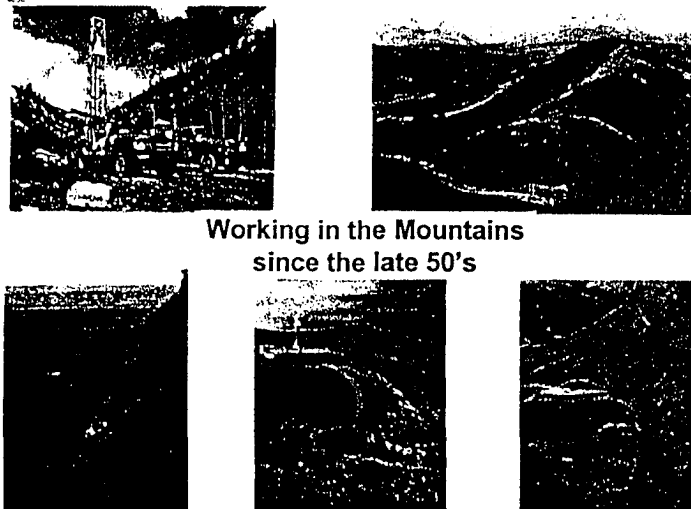
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Working in Rough Terrain



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Working in the Mountains since the late 50's

January 10, 2008 Wapiti CBM Program September 2004

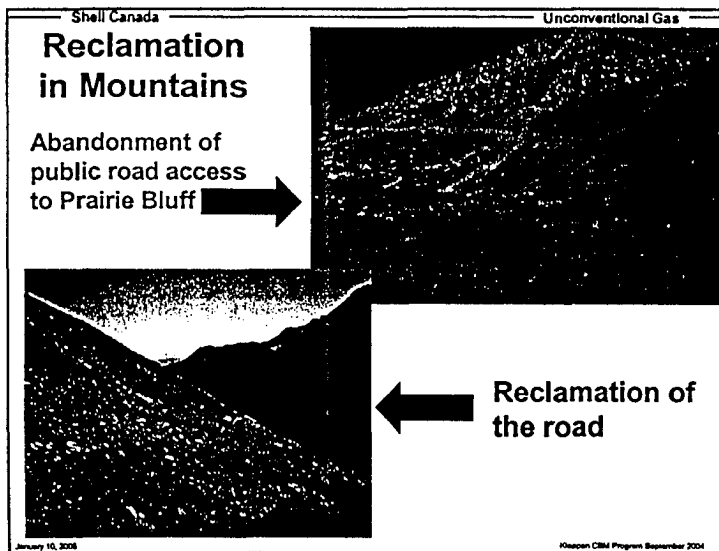
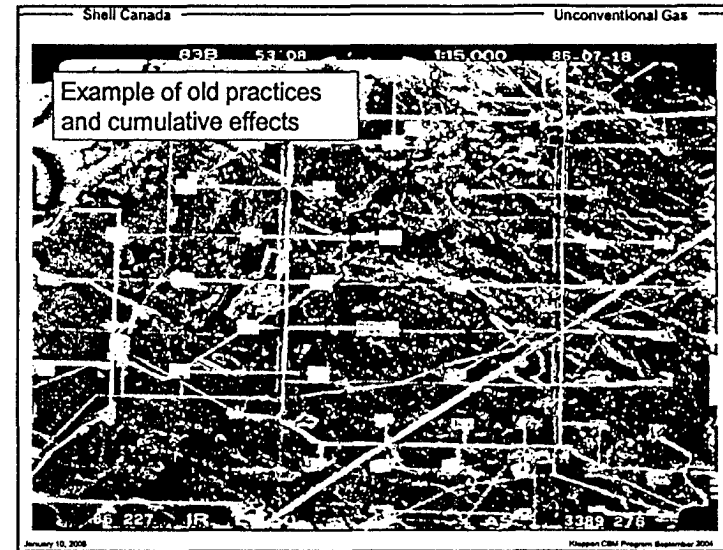
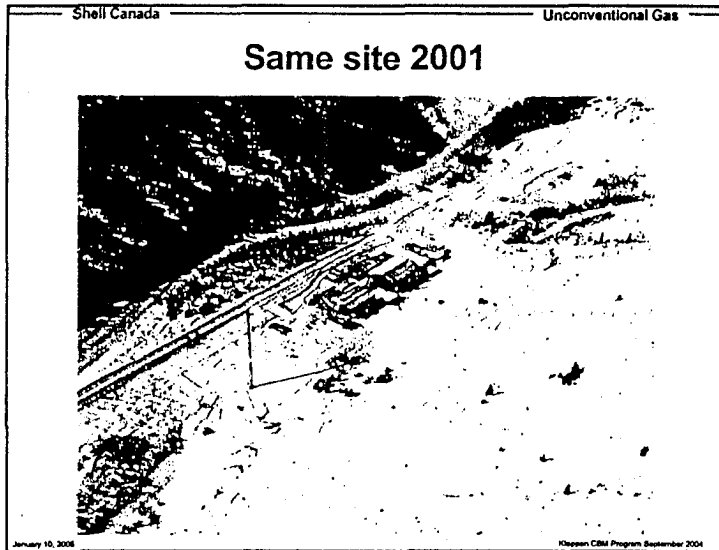
Shell Canada

Waterton Area

- equipment pre 1970



January 10, 2008



Shell Canada Unconventional Gas

Opportunities for Footprint* Reduction


- Seismic programs
- Well site and access road construction
- Access road operations
- Pipeline routing and construction

*Footprint: area that is disturbed for the activity

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Shell Canada

Foot Print and Access Management in Waterton



Service Rig (specific to Waterton)

Drilling rig (specific to Waterton)

- Triple (big rig)
- Multiple wells from one pad
- Now working on very close well spacing

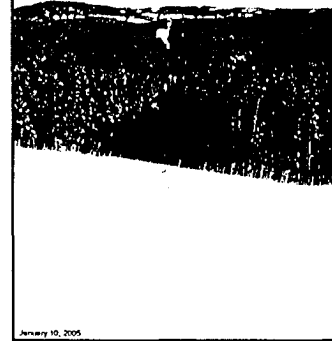
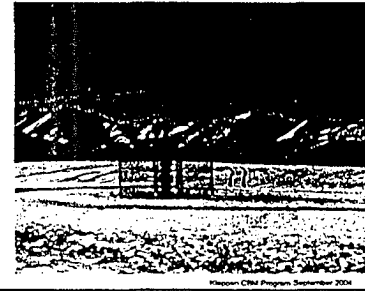
January 10, 2005

Mapcon CEM Program September 2004

Shell Canada

Unconventional Gas

Use of Existing Disturbances for New Developments



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“Low Impact” Techniques Enabled by Improvements in Geophysical Software and GPS



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Use of an Existing Corridor and Trying to Maintain Minimal New Disturbance during Road Construction

January 10, 2005

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Access Management Requires Consultation

Effective access plan implementation will need the cooperation of groups that share an interest in wild land and wildlife conservation

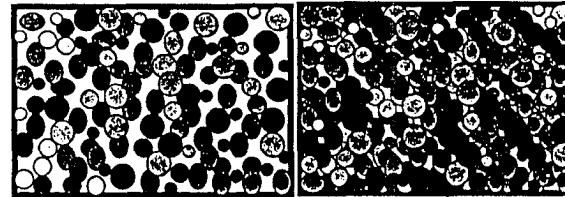
What is Coalbed Methane?

- Known by many names:
 - CBM
 - coalbed gas
 - natural gas from coal
- Means “methane found in coal seams”
 - natural gas found in coal, instead of sandstone or limestone
 - the natural gas we use at home is methane

Coalbed Methane

Conventional Natural Gas

- Conventional natural gas – free gas exists in the pores (holes) in the rock



- The more holes in the rock – the more gas it contains and higher the production rate

Gas in Coal

Coal has many very, very, very, tiny holes

If required, reduce the pressure (by pumping out water) and the methane "desorbs" from the coal and slowly flows into the fractures

Coal also has fractures (cleats)

Coal particle magnified many billions of times

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CBM Early Development History

- Production started in USA in early 1980s and grew rapidly after 1990
- There have been good as well as bad experiences with CBM development
 - We can learn from the US experience
- Some issues in some areas of USA
 - Number of wells required - roads, surface disturbance
 - Water handling
 - Methane migration
 - Noise
 - Landowner relations
 - Some examples of how to develop this resource in the USA can be found on websites
- Every area is different

January 10, 2006 Western CBM Program September 2004

Natural Gas Desorbing From Coal

Photo courtesy of Devon Canada Corporation

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Powder River Issues

- Websites to visit:
 - powderriverbasin.org
 - www.cbmcc.vcn.com

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Powder River - What We Saw - Well sites

- Painted tan to blend in
- Roads not visible from highway but very visible from hill tops

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Typical Powder River Basin Scene

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San Juan: Well sites

- Deeper wells vs. Powder River
- Bigger well sites

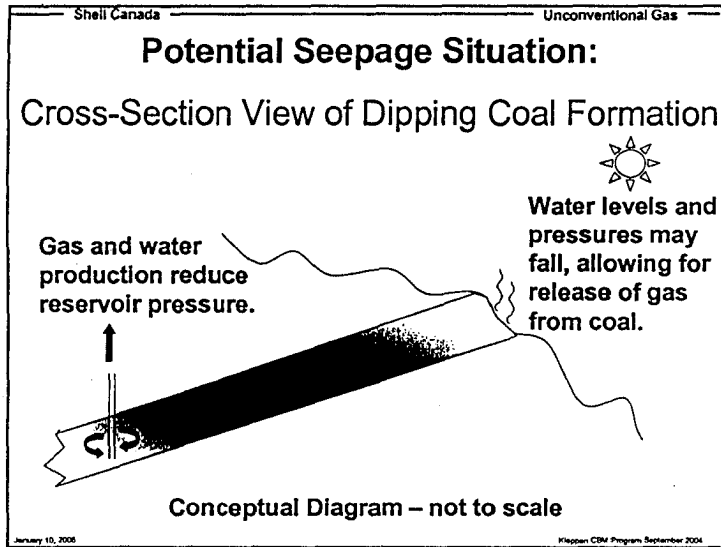
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Shell's Identified Best Practices Surface Footprint

- Strive to re-use disturbed sites e.g. coal exploration sites, rail-beds
- Locate infrastructure with roads
- Collect and interpret site-specific wildlife and plant information, identify data gaps and prepare for the next development phase
- Investigate pad drilling concepts for development

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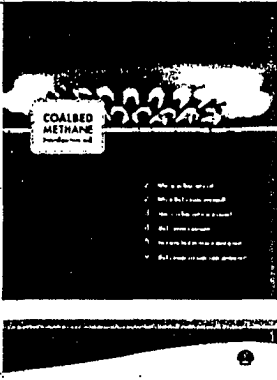
- Shell Canada Unconventional Gas
- ### Shell's Identified Best Practices Water Management
- Investigate multitude of water management techniques
 - Finding appropriate uses & treatments for use
 - Deep well injection
 - Best practice will be site specific
 - Need water (quality and quantity) information to implement site specific best practice
 - Assess site-specific impacts
 - Monitor
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- ### Shell's Identified Best Practices Natural Gas Seepage
- Model reservoir properties to predict possibility
 - ➔ Need:
 - Reservoir characteristic information from exploration wells
 - Seismic interpretation to model potential for this problem & mitigation concepts
 - Collect baseline data
 - Develop and employ mitigation concepts
- January 10, 2008 Klappan CBM Program September 2004

- Shell Canada Unconventional Gas
- ### Environmental Aspects
- Learn from U.S. experiences
 - Shell staff visited Powder River, Wyoming and San Juan, Colorado for insight to environmental issues
 - Every basin is different, concerns vary:
 - footprint
 - water production and management
 - natural gas seepage
 - Shell applies best practices to projects
- ...In order to determine best path
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Shell's Approach to CBM



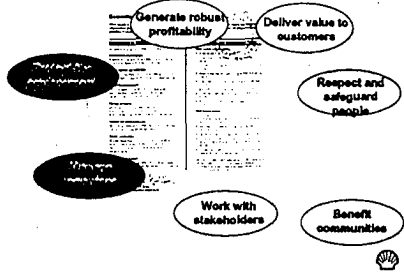
- Phased
 - Exploration (data gathering)
 - Pilot
 - Commercial
- Stakeholder Consultation and Feedback at each stage
 - We want to hear your ideas
- Best Practices
 - Please see our brochure
 - Plus we will make water data available

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Sustainable Development

Our overarching commitment to Sustainable Development (Economic, Social, Environmental).....a key element of our Business Principles



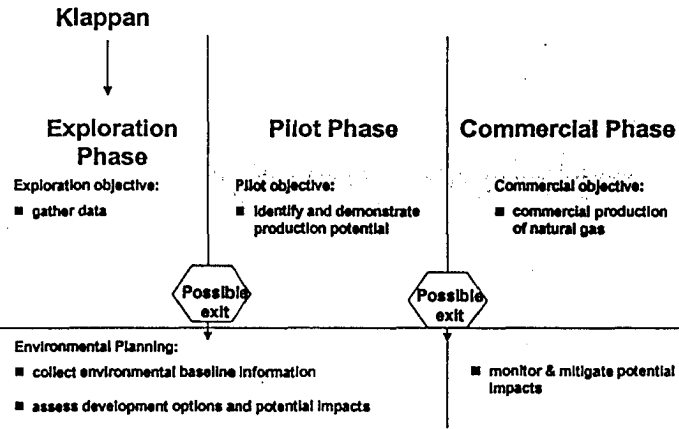
Context in which specific CBM opportunities WILL be evaluated

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Staged Approach to CBM Assessment

Klappan



Exploration Phase
Exploration objective:
■ gather data

Pilot Phase
Pilot objective:
■ identify and demonstrate production potential

Commercial Phase
Commercial objective:
■ commercial production of natural gas

Environmental Planning:
■ collect environmental baseline information
■ assess development options and potential impacts

■ monitor & mitigate potential impacts

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Social Benefits - General

- Development of job-skills
- Local business development
- More secure access to natural gas
- Royalties and taxes to provincial and federal governments

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Klappan Project

General Overview

January 15, 2008

Unconventional Gas Program - September 2004

Shell Canada Unconventional Gas

January 15, 2008

Unconventional Gas Program - September 2004

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January 15, 2008

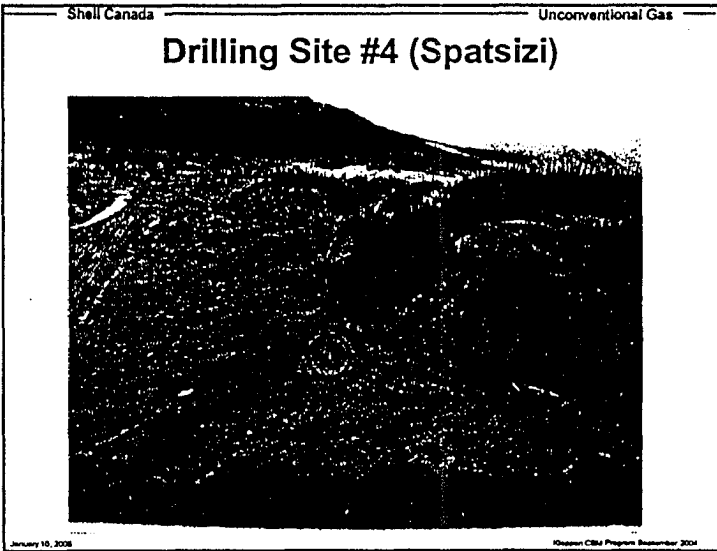
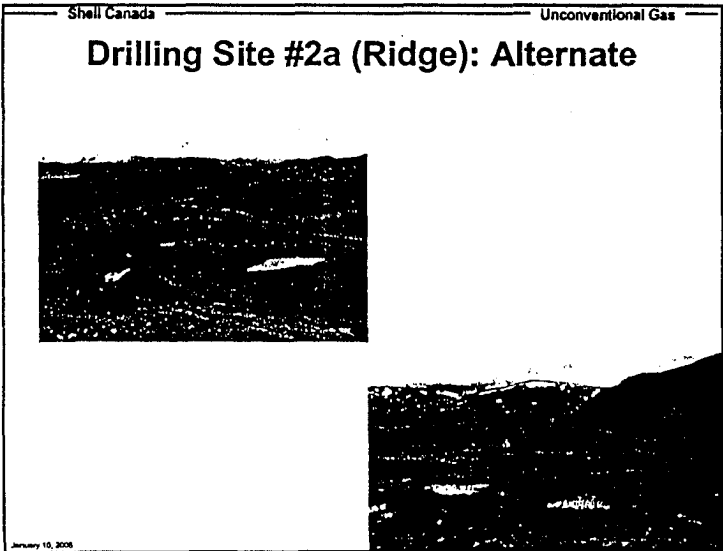
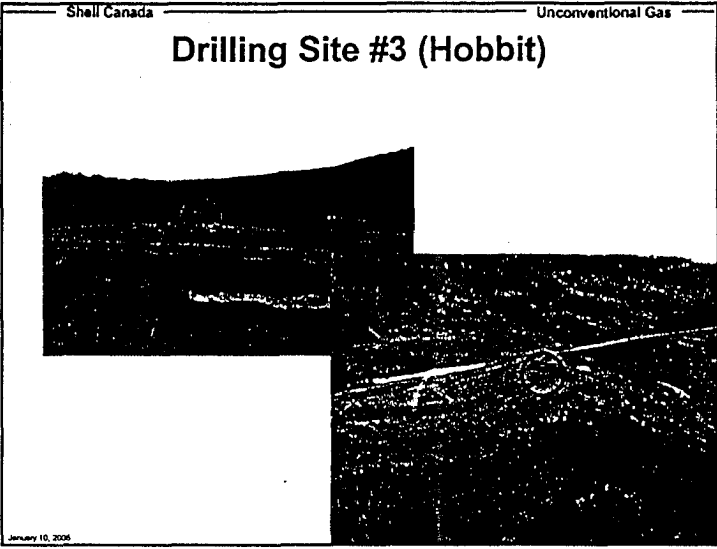
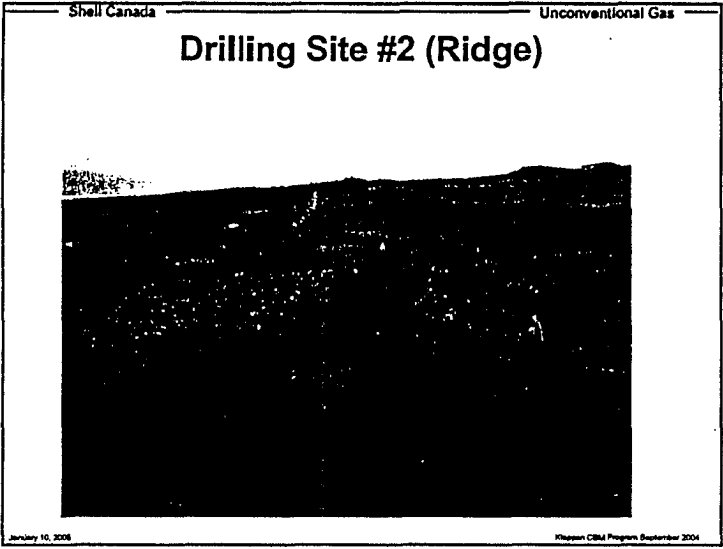
Unconventional Gas Program - September 2004

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Drilling Site #1 (Summit)

January 15, 2008

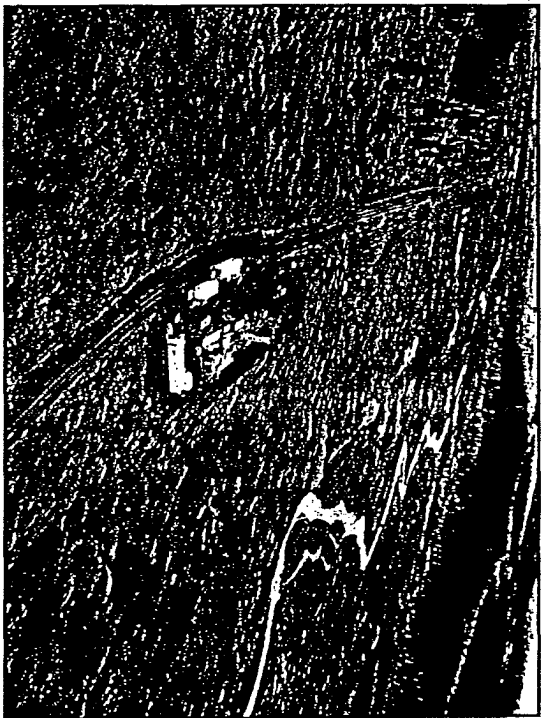
Unconventional Gas Program - September 2004



Clappan Project 2004 Drilling and Seismic Operations

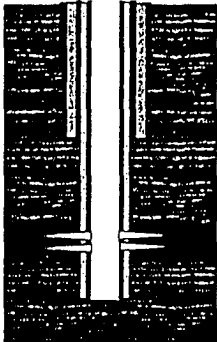
January 16, 2005

Highway 630 Project, September 2004



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Drilling



Drive conductor pipe
10-20 m deep

Drill surface hole 80-120 meters deep
Set surface casing (steel pipe)
Cement to surface

Drill main hole 600 – 950 meters deep
Log well (electronic devices to identify rock & coal!)
Set casing (steel pipe)
Cement to surface



Perforate casing into coal seam

Test (water sample, permeability)

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Geophones (Receivers)

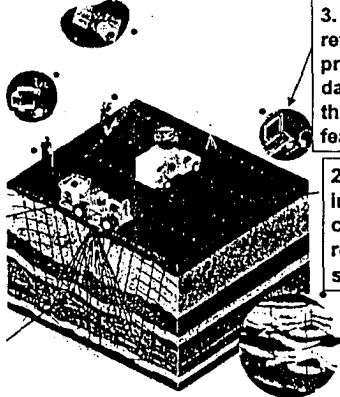
Shell Canada Limited Klappan 2D Seismic Proposal

January 10, 2008 September 2004 Klappan CBM Program September 2004

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Seismic Mapping

1. Vibroseis trucks emit signals in the ground through vibration. These trucks will remain on existing railway bed.



2. Receivers are installed to capture the reflection of the signal.

3. The signal reflection is processed and this data can help map the subsurface features.



Shell Canada Limited Klappan 2D Seismic Proposal

September 2004

January 10, 2008 Klappan CBM Program September 2004

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Example of Hand Cut Line - 1 Meter Wide

Shell Canada Limited Klappan 2D Seismic Proposal

September 2004

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Environmental Considerations:

- Main 2D line was on an old abandoned railway bed so there was no new ground disturbance
- Avoidance cutting techniques were planned to be utilized on all new hand cut lines
Avoidance techniques involve access around trees and other natural features to minimize impacts as opposed to cutting in a straight line.
- To properly achieve good avoidance cutting techniques, we requested that approval be given for a variance of 100m on either side of lines
- Planned to avoid features such as merchantable timber, wildlife features, archaeological/heritage sites, cabins, beaver ponds, mineral licks, steep terrain or specific ground conditions.

Shell Canada Limited Klappan 2D Seismic Proposal
January 10, 2005 September 2004 Klappan CBM Program September 2004

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Klappan 2004 Results

- Three wells were drilled and a 84km seismic program was performed
- 2004 drill program shows encouraging indications about the presence of natural gas
- We need to do more work to determine if the gas can be produced

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60K lb Vibroseis truck



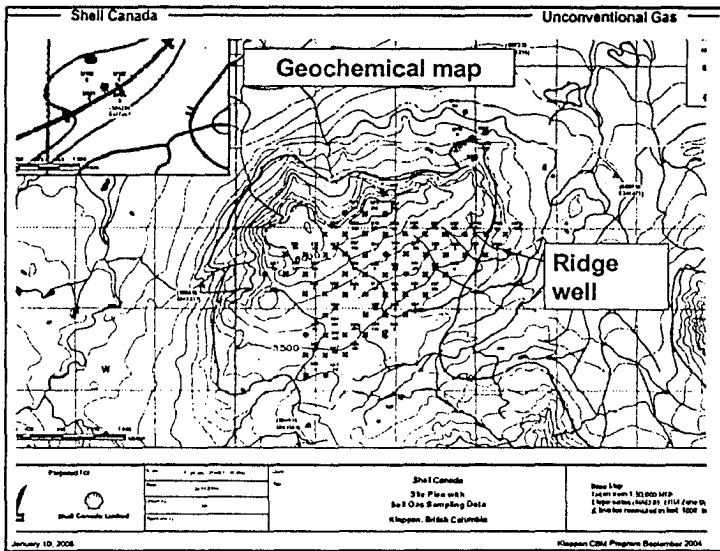
Shell Canada Limited Klappan 2D Seismic Proposal
January 10, 2005 September 2004 Klappan CBM Program September 2004

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Klappan 2004 Results

- Water
 - During the drilling of the first well, water flow was observed at shallow depths;
 - During testing, no water was collected from the coal;
 - We tried to produce from the wells, but they did not flow much (only a small amount of gas);
 - We do not know if the gas can be produced;
 - We need to try different well techniques to see if gas and/or water will flow to the well.

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2005 Preliminary Plan

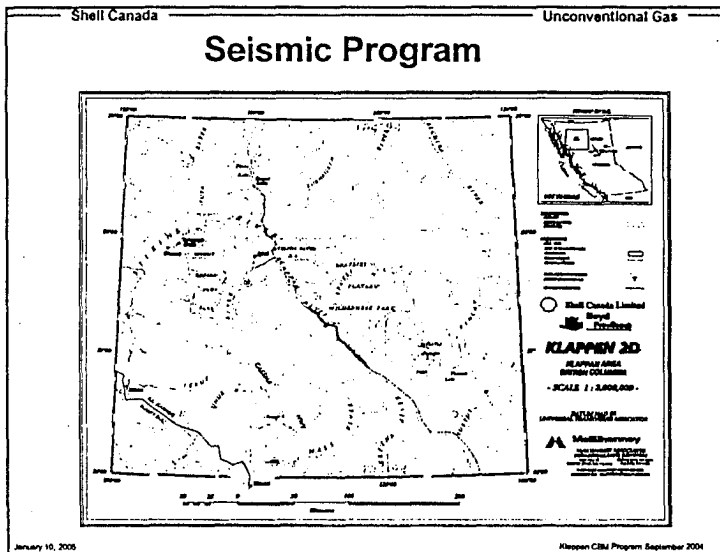
Assessment Phase 2a
Objective: measure if gas or water will flow to the well

Possible Assessment Phase 2b (Subject to approval)

Good

Bad

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Klappan 2005 Proposed Preliminary Program

- Exploration Phase 2a – Equipment (TBC)
 - One or two rigs and associated contractors
 - Associated logistical support (road maintenance etc)
 - Camp: 30-50 people

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Klappan 2005 Proposed Preliminary Program

- Exploration Phase 2b – equipment (TBC)
- If results are encouraging
 - Two rigs and associated contractors
 - Associated logistical support
 - Camp: appr. 40-80 people
- If results are not encouraging
 - Possibly one rig and associated contractors
 - Associated logistical support

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THANK YOU ANY QUESTIONS?

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Next steps

- Technical analyses for Phase 2a to be completed and program finalized – March/April 2005
- We will come back and present you the proposed program and invite any comments

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