



Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

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Request for review and comment on the Annual Progress Report submitted by Apache Canada

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Permits

From: ORS Administrator <lwbors@yk.com>
Sent: Tuesday, April 5, 2016 1:55 PM
To: Undisclosed Recipients
Cc: Miki Ehrlich; Jen Potten; Heather Scott; Lynn.Huntley@apachecorp.com; sam.bird@worleyparsons.com
Subject: Request for Comments on MVLWB Item - Apache Canada Ltd. - Annaul Progress Report (MV2014X0011)

The Mackenzie Valley Land and Water Board invites reviewers to submit comments on **Apache Canada Ltd. - Annaul Progress Report (MV2014X0011)** via the LWB Online Review System.

- To access **Apache Canada Ltd. - Annaul Progress Report (MV2014X0011)**, please follow this link: [LWB Online Review System](#).
- The deadline for reviewers to submit comments is Apr 19 at 9:59pm Mountain Time.
- The deadline for the proponent to submit responses is Apr 29 at 9:59pm Mountain Time.
- The User Manual for the LWB Online Review System is available [here](#).

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- Heather Scott: 867-766-7463 heather.scott@mvlwb.com
- Jen Potten: 867-766-7468 jpotten@mvlwb.com
- Miki Ehrlich: 867-766-7469 mehrlich@mvlwb.com

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From: [Miki Ehrlich](#)
To: [Permits](#)
Subject: FW: MV2014X0011 Annual Progress Report - Apache Pointed Mountain
Date: Wednesday, March 23, 2016 9:35:37 AM
Attachments: [image001.png](#)
[Pointed Mnt-2015 Annual Progress Rot-LUP-MV2014X0011-Final-Rev0.pdf](#)

Please post email and attachment to MV2011X0011 – Reports and studies – Annual reports
Title: Apache - 2015 Annual Progress Report – Mar17-16.pdf

From: Bird, Sam (Calgary) [<mailto:SAM.BIRD@advisian.com>]
Sent: Thursday, March 17, 2016 12:33 PM
To: Miki Ehrlich
Cc: Lynn Huntley (lynn.huntley@apachecorp.com)
Subject: MV2014X0011 Annual Progress Report - Apache Pointed Mountain

Good afternoon Miki,

I have attached a copy of the 2015 Annual Progress Report for Apache's Pointed Mountain Remediation program being conducted under Land Use Permit number MV2014X0011. This report has been produced on behalf of Apache Canada to comply with Condition 8 of the Land Use Permit. Please call or e-mail me if you have any questions regarding this report.

Regards,

Sam

Sam Bird
Environmental Scientist

Suite 500, 151 Canada Olympic Road | Calgary AB T3B 6B7
P +15879521597 | M +14039997781
E sam.bird@advisian.com

www.advisian.com



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Suite 500, 151 Canada Olympic Rd SW
Calgary, AB T3B 6B7 CANADA
Phone: +1 403 247 0200
Toll-Free: 1 800 668 6772
Facsimile: +1 403 247 4811
www.advisian.com

16 March 2016

Proj. No.: 407074-00349-100
File Loc. Calgary

Mackenzie Valley Land and Water Board (MVLWB)
7 Floor, 4922 - 48 Street
Yellowknife, NT
X1A 2P6

Attention: Miki Ehrlich, Regulatory Officer

Dear Ms. Ehrlich:

**RE: FORMER POINTED MOUNTAIN GAS FIELD, LAND USE PERMIT
MV2014X0011, CONDITION 8, 2015 ANNUAL PROGRESS REPORT**

1. INTRODUCTION

This letter has been prepared on behalf of Apache Canada Ltd. (Apache) by WorleyParsons Canada Ltd., operating as Advisian¹ (Advisian) and is intended to address the annual progress report requirement under Condition 8 of Land Use Permit (LUP) MV2014X0011 for activities undertaken in 2015.

2. BACKGROUND

Land Use Permit MV2014X0011 covers remediation activities at the former Pointed Mountain Gas Field (Site) located west of the Liard River within the Liard Range of the Franklin Mountains, approximately 30 km northwest of Fort Liard, Northwest Territories (NT). The LUP covers activities at the following locations: a Plant Site, Airstrip, pipeline network, roadways, a barge landing, and six well sites (A-1, A-2, A 3, A-4, B-1 and B-2). The well sites and associated infrastructure are located within an area of approximately 740 km². The Site is located on Public Land and is an area of interest to the Acho Dene Koe (ADK) First Nation. It is accessible by air or by crossing the Liard River via ice bridge or by boat (WorleyParsons 2015a).

¹ As of July 1, 2015, Advisian became the independent consulting business line of WorleyParsons.



3. MVLWB REQUIREMENTS FOR REPORTING

Pursuant to Condition 8 of LUP MV2014X0011, Apache is required to submit an annual progress report. The report shall include, but not be limited to, the information listed in Condition 8 of the LUP. Table A summarizes the required information and references the corresponding location in this report.

Table A Annual Progress Report Content Requirements Concordance Table

Condition 8 Information Requirement	Report Location
a. a detailed description of work completed during the [reporting] year to remediate the site;	Section 4
b. any engineering studies/designs, monitoring results, or remediation research completed or updated during the [reporting] year;	Section 4
c. a detailed waste audit of all waste produced, transported, and disposal method/location (in volumes and by types). This includes all hazardous waste, waste petroleum products, and any other wastes identified in the Waste Management Plan;	Section 5
d. a list of unauthorized discharges;	Section 6
e. a summary of residual risks on the site to environmental, human and wildlife health;	Section 7
f. updated remediation cost liability and financial security estimates;	Section 8
g. updated life of project work plan for all project activities including reclamation and monitoring activities; and	Section 9
h. a summary of all activities that took place under the Engagement Plan.	Section 10

4. WORK COMPLETED IN 2015

4.1 2015 Monitoring, Assessment and Remediation Activities

The four former production wells on the A Mountain and the disposal well at the Plant Site were inspected as per Office of the Regulator of Oil and Gas Operations (OROGO) requirements. The inspection reports were sent to OROGO.

Four surficial background soil samples were collected to further understand the concentration of naturally occurring metals at the Site. The results are unpublished at this time and are intended to be included with future assessment of background soil chemistry.

No other monitoring, assessment, or remediation activities occurred at the Site in 2015. However, the following reports were completed in 2015:

- a supplementary Phase 2 Environmental Site Assessment report (WorleyParsons 2015a) which describes the assessment work that occurred on Site in 2014;



- an ecological and human health risk assessment (WorleyParsons 2015b) which used Site information to derive Site-specific remediation guidelines; and
- an update of the remediation plan (WorleyParsons 2015c).

All three documents have been submitted to the MVLWB and are posted on the on-line public registry.

5. WASTE SUMMARY

No waste was transported from Site in 2015.

6. UNAUTHORIZED DISCHARGES

No unauthorized discharges occurred in 2015.

7. RESIDUAL RISKS

There was no significant change in residual risks at the Site to environmental, human, and wildlife health in 2015.

The residual risk from historical activities has most recently been described in the Supplemental Phase 2 ESA (WorleyParsons 2015a) and the Site-Specific Remediation Guidelines (WorleyParsons 2015b) as listed in Section 4.

Contaminated soil and groundwater at the Site are summarized in Table B. Additional risks at the Site have been identified as scattered inert debris, two barrels of product, remnant pipelines that may contain product or corrosion inhibitor and 10 landfills or areas of buried debris.

Table B Contaminants of Concern at the former Pointed Mountain Gas Field

Location	Affected Media to be Remediated	Hydrocarbons	Polycyclic Aromatic Hydrocarbons	Metals	EC/ Salinity/pH
A1	Soil	X		X	pH (acidic)
A2	Soil	X	X	X	
A3	Soil	X		X	
A4	Soil	X		X	
B1	Soil	X		X	pH (acidic)
B2	Soil	X		X	
Plant Site	Soil and Groundwater	X		X	chloride
Air Strip	Soil	X		X	
Barge Landing	Soil (if required)	possible		unlikely	unlikely
Pipeline junctions/valves	Soil (as required)	isolated		unlikely	unlikely

Note: "X" indicates the presence of a COC that has been identified at a location.



8. COST ESTIMATES

An updated remediation cost of between 15 and 20 million dollars has been provided in the Pointed Mountain Remediation Plan (version 2) (WorleyParsons 2015c).

9. REMEDIATION TIMELINE

An updated remediation schedule was provided in the Pointed Mountain Remediation Plan (version 2) (WorleyParsons 2015c) and is summarized in Table C with additional updates. Any further updates to this schedule will be communicated to the ADK, Metis Local 67, community of Fort Liard, and the MVLWB as Apache becomes aware of any changes.

Table C Proposed Remediation Schedule

Year	Activity
2016	<ul style="list-style-type: none">• cut and cap remaining well heads A-1, A-2, A-3, A-4;• evaluate and abandon C-1 disposal well at Plant Site;• community engagement meeting;• continue to work toward a decision on whether to proceed with investigation of a non-hazardous waste landfill on site including consultation with local community groups;• if decision reached is to proceed, conduct geotechnical evaluation at Plant Site for the construction of a non-hazardous waste landfill and evaluations of identified borrow source material locations;• a survey for naturally occurring radioactive material (NORMS) at exposed pipelines and assessment of associated risk;• evaluation of site conditions, inventory bridges and culverts;• establish Surveillance Network Program (SNP) for the monitoring of water and vegetation quality down-gradient of surge pond plume;• modify fencing around surge pond to improve visibility and safety;• weed control program; and• re-evaluate soil volumes for disposal based on additional background information.



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Year	Activity
2017	<ul style="list-style-type: none">• final decision regarding on Site or off Site Landfill disposal of waste soil and debris;• design and approval of a non-hazardous waste Landfill on Site (if required);• conduct vegetation and archaeological assessments (desktop or field) of new vegetation clearing activity (if required);• conceptual engineering for site roads to accommodate expected haul rates;• apply for an amendment to the LUP to clear additional areas of vegetation for collection of surface debris and possible borrow sources;• repair or construction of site roads as needed;• excavation and remediation of soil at Plant Site (tank farm bio-remediation);• excavation and remediation of soil at A-4 (re-mix), Airstrip (bio-remediation), A-1 (bio-remediation);• collect on Site inert debris as identified by community (Barge Landing, Airstrip, Clearing);• remove remaining underground infrastructure at Plant Site;• stockpile inert debris at Plant Site or haul off Site;• conduct SNP water and vegetation monitoring; and• conduct weed control program.
2018	<ul style="list-style-type: none">• develop long term schedule for SNP monitoring;• construction of a non-hazardous waste landfill at the Plant Site if required;• installation and baseline sampling of perimeter monitoring wells at new landfill and around remediated well sites (if required) and inclusion into SNP;• excavation and transport of untreatable soil from all locations to Landfill; may involve winter work;• remove water from surge pond. Sample and discharge at site to surface if water meets discharge criteria or haul for off Site disposal;• excavation of impacted soil from surge pond area and placement in Landfill;• backfill and re-grade in the area of the surge pond;• SNP water and vegetation monitoring; and• conduct weed control program.



Year	Activity
2019	<ul style="list-style-type: none"> • apply for two-year extension to LUP; • non-hazardous waste landfill closure capping; • re-grading of disturbed areas as required. Baseline vegetation assessments; • SNP water and vegetation monitoring; • conduct weed control program; and • removal or sign over to community, site infrastructure (culverts, bridges) as required.
2020-2021	<ul style="list-style-type: none"> • reclamation monitoring of all disturbed areas; vegetation assessments; • SNP water and vegetation monitoring, (landfill, well sites and natural attenuation down-gradient of surge pond); • initiate geotechnical monitoring program as part of SNP; and • weed control program.
2022-2045	<ul style="list-style-type: none"> • SNP water and vegetation monitoring (landfill, well sites and natural attenuation down-gradient of surge pond); • geotechnical monitoring program; and • re-evaluate SNP monitoring schedule based on evidence collected.

10. ENGAGEMENT PLAN

A summary of the key engagement activities that occurred during 2015 are listed in Table D. The names of individuals involved have been omitted to preserve confidentiality in this public document.

Table D Summary of Engagement Activities

Date	Activity	Attendees (other than Apache and Advisian)
March 30, 2015	Emails to inform interested parties that Apache would seek an extension to the reporting deadline for the RAP	ADK, Metis Local 67, Hamlet of Fort Liard
April 1, 2015	Phone call follow-up to March 30 e-mail	ADK, Metis Local 67, Hamlet of Fort Liard
April 27, 2015	Community meeting with presentation, and question and answer session. Open to public	Approximately 40 people (ADK, community members, local businesses)
November 20, 2015	Phone call from local business about Spectra Energy project	Business owner



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Date	Activity	Attendees (other than Apache and Advisian)
December 15, 2015	Letter sent via e-mail to interested parties about possible winter work	ADK, Metis Local 67, Hamlet of Fort Liard
December 21, 2015	Phone call from ADK regarding LUP amendment application for winter work.	ADK
December 26, 2015	Email from ADK regarding LUP amendment application for winter work.	ADK
December 15 to 31, 2015	Phone calls placed and received with local businesses and service providers in Fort Liard and northeast British Columbia	Various businesses



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11. CLOSURE

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

Sincerely,

A handwritten signature in cursive script, reading "Sam Bird".

Sam Bird, B.Sc.
Staff Environmental Scientist

A handwritten signature in cursive script, reading "Ron Thiessen".

Ron Thiessen, M.Sc (Eng), P.Eng., EP
Principal Consultant



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12. REFERENCES

- WorleyParsons (WorleyParsons Canada Services Ltd.), 2015a. 2014 Supplemental Phase 2 Environmental Site Assessment, Former Pointed Mountain Gas Field. Prepared for Apache Canada Ltd. File No. 407074-00280.100. Final. 29 June 2015.
- WorleyParsons (WorleyParsons Canada Services Ltd.), 2015b. Site Specific Remediation Guidelines, Former Pointed Mountain Gas Field. Prepared for Apache Canada Ltd. Final. File No. 407074-00280.300. 29 June 2015.
- WorleyParsons (WorleyParsons Canada Services Ltd.), 2015c. Remediation Plan (Revision 2), Former Pointed Mountain Gas Field. Prepared for Apache Canada Ltd. File No. 407074-00414.300. Final. 30 June 2015.



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April 5, 2016

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Hay River Metis Council	Karen Lafferty	President	(867)874-4472; hrrmc@northwestel.net ;
[Liard First Nation if in asserted area]	Daniel Morris	Chief	(867)536-7910;
Northwest Territory Métis Nation	Garry Bailey c/o Tim Heron	NWTMN IMA Coordinator	(867)872-3586; rcc.nwtmn@northwestel.net ;

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MS: Mailbox save

MP: Mailbox print
RP: Report
FF: Fax Forward

CP: Completed
FA: Fail
TU: Terminated by user

TS: Terminated by system
G3: Group 3
EC: Error Correct