

2016/17

Orphan Site Reclamation Fund Annual Report

BC Oil and Gas Commission



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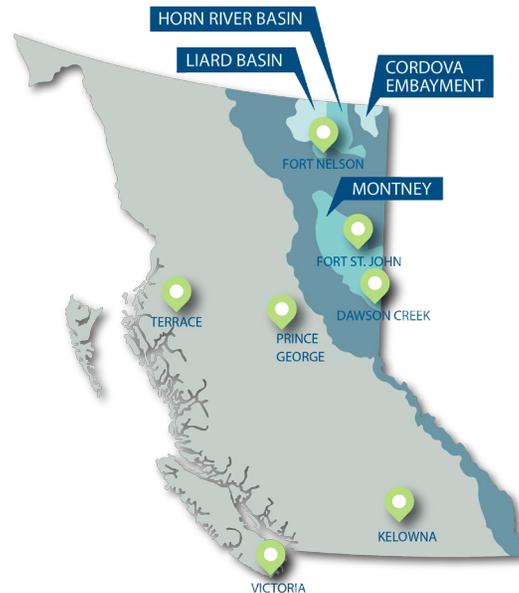
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About the

BC Oil and Gas Commission

The BC Oil and Gas Commission (Commission) is the single window regulatory agency with responsibilities for regulating oil and gas activities in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core services include reviewing and assessing applications for industry activity, consulting with First Nations, cooperating with partner agencies, and ensuring industry complies with provincial legislation and all regulatory requirements. The public interest is protected by ensuring public safety, respecting those affected by oil and gas activities, conserving the environment and ensuring equitable participation in production.



Mission

We regulate oil and gas activities for the benefit of British Columbians.

We achieve this by:

- Protecting public safety,
- Respecting those affected by oil and gas activities,
- Conserving the environment, and
- Supporting resource development.

Through the active engagement of our stakeholders and partners, we provide fair and timely decisions within our regulatory framework.

We support opportunities for employee growth, recognize individual and group contributions, demonstrate accountability at all levels, and instill pride and confidence in our organization.

We serve with a passion for excellence.

Vision

To provide oil and gas regulatory excellence for British Columbia's changing energy future.

Values

- Respectful
- Accountable
- Effective
- Efficient
- Responsive
- Transparent

In British Columbia oil and gas sites such as wells, facilities, pipelines and/or sites affected by oil and gas activities, where the operator is insolvent or cannot be located, may be designated as orphan sites by the BC Oil and Gas Commission.

Once sites have been designated as orphans, the Commission may use the Orphan Site Reclamation Fund (OSRF) to decommission and restore the site to obtain a Certificate of Restoration (CoR). The CoR provides assurance to stakeholders that the site has been restored in accordance with current standards and requirements, and that all known contamination risks or other hazards have been mitigated.

The 2016/17 fiscal year saw some additional pressures to the Orphan Site Reclamation Fund. Due to the conclusion of the Terra Energy Corp (Terra) receivership proceeding, 175 sites received orphan designation at the end of the fiscal year.

During the 2016/17 fiscal year, the OSRF spent approximately \$643,000 on orphan site decommissioning and restoration work. Total oil and gas levies from the fiscal year was \$1.5 million and at the end of the fiscal year, the orphan fund balance consisted of \$5.3 million in current assets. Following the designation of the Terra sites as orphans, the estimated liability to deactivate and decommission high risk sites, as well as remediate potential contamination, was approximately \$22 million. The full decommissioning and restoration costs for the orphan sites was estimated to be in the range of \$40 to \$60 million.

Orphan Site Reclamation Fund Summary

At the beginning of the fiscal year, there were 45 orphan sites, including 14 sites with CoRs. By the end of the 2016/17 fiscal year, three additional sites were granted CoRs and two more were submitted for approval.

Prior to the Terra well designations, the Commission took steps to protect public safety and the environment and completed deactivation of Terra sites. This included shutting-in wells, pigging and purging pipelines and draining tanks.



OSRF Spending Breakdown

Work on orphan sites is completed under five main categories, and general orphan expenditures. Spending in the 2016/17 fiscal year has been broken down by costs associated with each category below:

Well Decommissioning	\$310,806
Facility and/or Pipeline Decommissioning	\$104,618
Site Investigation	\$161,478
Site Remediation	\$5,885
Site Reclamation	\$26,700
General Orphan Expenditures	\$33,640
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	\$643,127



Well Decommissioning

Orphan sites that have not been properly decommissioned require plugging, as well as cut and cap activities, as part of the closure process. Well decommissioning activities include the permanent plugging of the producing zone(s) and isolating porous formations within a well. This prevents production fluid and gasses from travelling up the wellbore to the surface or between formations. Well decommissioning activities may also include repairing well integrity issues, such as surface casing vent flow and gas migration.

Three wells (d-027-J/094-A-10, 02-29-088-17 and 08-29-088-17) were plugged and decommissioned during the fiscal year.



d-027-J/094-A-10 Well was plugged, cut and capped in January, 2017.

Facility and Pipeline Decommissioning

Orphan sites with permitted surface and subsurface facilities require the safe removal and disposal of associated equipment prior to completing any intrusive soil and groundwater quality assessments. Decommissioning activities would also include the removal of all facility flow lines, piles, concrete and debris that may also be on a site. Pipelines require proper purging before being removed to the site's boundary and cut and capped below grade.

Three sites had their remaining surface facilities and pipelines decommissioned during this fiscal year (d-027-J/09-A-10, 02-29-088-17 and 08-29-088-17). One additional orphan pipeline that is not tied to the other orphan sites was also decommissioned.



d-027-J/094-A Pipeline decommissioning.



Site Investigation

A site investigation is required as part of the issuance of a CoR. The CoR process is divided into two parts. Part I is the soil and groundwater investigation and confirms if the soil, surface and groundwater quality at the site meets the standards for final land use, or the site does not pose a significant risk to human health or the environment. Investigation at each site is subject to areas of potential environmental concern that are identified during a historical file review. Results of the investigation determine if the site is suitable for closure or if remediation is required.

File reviews were completed on four sites to support a CoR Part I site investigation (d-027-J/094-A-10, 02-29-088-17, 08-29-088-17 and 07-30-088-17). Additional data collection to support the initial investigations was completed at b-070-L/094-P-03 and d-071-I/094-P-4.



Site Remediation

If a site investigation identifies contamination, then remediation is required prior to the application and acceptance of a CoR Part I. Remediation may include the excavation, transport and subsequent disposal of contaminated soil at a licensed facility, or treatment of the soil and subsequent use as backfill for the excavation (concentrations of contaminants of concern are less than the applicable provincial standards).

While no remediation activities were completed this year, reporting for previous activities was completed.



Part II of the CoR process is to ensure the land has been properly reclaimed so it meets appropriate land use productivity standards. Surface reclamation commonly includes surface contouring, topsoil replacement, re-vegetation, and monitoring to return the site to pre-disturbance conditions.

The OSRF is also responsible for managing orphaned pipelines through the BC One Call system. All orphaned pipelines are registered with BC One Call following designations. The Commission responds to calls regarding ground disturbance near orphaned pipelines. For work identified within proximity to orphan pipelines,

At the end of the 2016/17 fiscal year, unsold Terra Energy Corp sites (wells, facilities and pipelines) were designated orphan sites, bringing the total count of orphan sites to 220. Seventeen of the previously designated orphan sites had been issued CoRs, where no further work is required.

Site Reclamation

Three sites received a CoR Part II in the 2016/17 fiscal year (d-071-D/094-P-12, 05-21-085-15 and c-042-I/092-F-11). Applications were submitted for an additional two sites. Reclamation inspections and weed treatments were completed on sites that are nearing final reclamation.

General Orphan Expenditures

the Commission may have the pipelines marked out for the proponent(s) as per the membership responsibilities to BC One Call. Other general expenditures may include Commission expenses for the management of designated orphan sites, which may include, but is not limited to, site visits and signage, as per Section 15(1) of the *Drilling and Production Regulation*.

Summary

As the Commission transitions to the 2017/18 fiscal year, management of orphan sites will focus on protecting public safety and the environment through a large-scale well suspension and abandonment program. Due to the increase in the number of orphan sites, the rate of decommissioning will increase to address the backlog as the Commission carries out larger restoration programs.



Appendix 1

Table 1: Designated Orphan Sites (does not include Terra sites)

Orphan Site Name and Location	Permit #	Site Status and Scope of Work	Orphan Site Name and Location	Permit #	Site Status and Scope of Work
ORPHAN POCKETKNIFE d-033-I/094-G-06	1393	No work scheduled. Requires a file review .	ORPHAN W. BEATTON b-041-L/094-H-02	6691	No work scheduled. Requires site investigation.
ORPHAN WOLF d-014-G/094-A-15	2062	CoR issued in 2011.	ORPHAN W. BEATTON d-041-L/094-H-02	6727	No work scheduled. Requires site investigation.
ORPHAN SUNRISE 10-08-079-16 W6M	2538	CoR issued in 2013.	ORPHAN E. RIGEL b-028-K/094-A-09	6870	Site undergoing reclamation monitoring.
ORPHAN SUNRISE 11-05-079-16	2559	CoR issued in 2006.	ORPHAN GRASSEY b-A095-D/094-G-07	7465	CoR issued in 2013.
ORPHAN SUNRISE 11-06-079-16 W6M	2560	CoR Part II submitted. No further work required.	ORPHAN FLATROCK 06-24-085-17	7683	No work scheduled. Requires site investigation.
ORPHAN SUNRISE 11-09-79-16 W6M	2564	CoR issued in 2010.	ORPHAN RIGEL d-027-J/094-a-10	8475	Well and surface facilities decommissioned. File review completed. Requires site investigation.
ORPHAN SUNRISE 11-04-079-16 W6M	2569	CoR issued in 2011.	ORPHAN PARADISE 05-21-085-15	9361	CoR issued April 29, 2016. No further work required.
ORPHAN SUNRISE 07-12-079-17 W6M	2772	CoR issued in 2010.	ORPHAN RIGEL 02-29-088-17 (includes FAC#7668 and P#7624)	9452	Well and surface facilities decommissioned. Requires site investigation.
ORPHAN SUNRISE A11-06-079-16 W6M	2878	CoR Part II submitted. No further work required.	ORPHAN ELLEH c-008-K/094-I-12	9702	No work scheduled. Requires further investigation and reclamation
ORPHAN SEXTET c-022-K/094-I-12	2884	No scheduled work. Requires reclamation.	ORPHAN RIGEL 08-29-088-17 (includes FAC#3272)	10504	Well and surface facilities decommissioned. Requires site investigation.
ORPHAN SUNRISE 06-07-079-16 W6M	2983	CoR issued in 2011, no further work required.	ORPHAN RIGEL 07-30-088-17	11057	File review completed.
ORPHAN SUNRISE 10-05-079-16 W6M	2998	CoR issued in 2010, no further work required.	ORPHAN COMOX c-042-I/092-F-11	14607	CoR issued June 23, 2016. No further work required.
ORPHAN SUNRISE 11-02-079-17 W6M	3360	CoR issued in 2011, no further work required.	ORPHAN TH QUESNEL NO. a-001-A/093-G-01	15594	CoR issued in 1990.
ORPHAN N. BUICK d-054-F/094-A-14	3995	Site investigation.	ORPHAN DILLY b-040-K/094-P-12	20506	Site undergoing reclamation monitoring.
ORPHAN N. BUICK a-075-F/094-A-15	4121	No work scheduled. Requires surface reclamation.	ORPHAN TSEA d-071-D/094-P-12	20522	CoR issued April 18, 2016. No further work required.
ORPHAN ELLA b-008-K/094-I-12	4343	Site remediation.	ORPHAN CRUSH d-B096-C/094-A-16	20629	No work scheduled. Requires surface reclamation.
ORPHAN BUICK a-041-D/094-A-15	4446	Legacy site. Further investigation and remediation required.	ORPHAN CURRANT d-A056-C/094-A-16	20634	Site undergoing reclamation monitoring.
ORPHAN LOUISE b-070-L/094-P-03	4799	Additional investigation and data collection completed.	ORPHAN PETITOT a-002-D/094-P-13	21051	Site undergoing reclamation monitoring.
ORPHAN LOUISE d-071-I/04-P-04	5156	Additional investigation and data collection completed.	ORPHAN DRAKE c-A088-K/094-H-01	22305	No work scheduled. Requires surface reclamation.
ORPHAN WENDY c-073-G/094-H-06	5625	Legacy site. No work scheduled. Requires site investigation.	ORPHAN GUNNEL a-079-A/094-P-04	23749	File review.
ORPHAN BOUNDARY 08-17-084-13	5712	No work scheduled. Requires site investigation.	PIPELINE FROM b-050-C/094-A-14 to d-037-C/094-A-14	P# 2790	No further work required.
ORPHAN BOUNDARY 16-03-086-14	6325	No work scheduled. Requires further site investigation.	For a full list of orphan sites, including the designated Terra sites, visit the Orphan Site Management page on www.bcogc.ca .		
ORPHAN BOUNDARY 09-03-086-14 W6	6651	No work scheduled. Requires further site investigation.			



More Information

www.bcogc.ca

This report was published in April, 2018 and is updated annually.

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