# Analysis Report



WHETHER TO DESIGNATE THE RYCROFT ALTERNATIVE WATER HUB FACILITY PROJECT IN ALBERTA

December 2019



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# **Purpose**

The Impact Assessment Agency of Canada (the Agency) prepared this report for consideration by the Minister of Environment and Climate Change (the Minister) in deciding whether to designate the Rycroft Alternative Water Hub Facility (the Project) pursuant to subsection 9(1) of the Impact Assessment Act (IAA).

## **Project**

The Project, proposed by Trace Water Solutions Ltd., would recycle oilfield wastewater via treatment and return it to market for re-use in hydraulic fracking operations by oil producers. The Project is proposed to be located near Woking, Alberta, in Birch Hills County and within Treaty 8.

## **Context of Request**

On June 28, 2019, a member of the public requested the Project be designated. The request expressed concerns about project-related impacts on water quality and fish in Kakut Lake, Alberta, and surrounding areas, and on the habitats of migratory birds. On August 25, 2019, the requestor relayed additional concerns regarding effects of heavy truck traffic on safety for nearby communities and wildlife, potential impacts to groundwater from possible spills, and increased air pollution. On September 10, 2019, Halfway River First Nation in British Columbia also requested that the Project be designated due to potential for the Project to result in adverse environmental effects and impacts to their rights under Treaty 8.

On July 5, 2019, the Agency notified Trace Water Solutions Ltd. (the proponent) of the designation request and requested information. The proponent responded on August 5, August 28, and September 6, 2019 with information about the Project, its potential adverse effects, proposed design and mitigation measures, and its view that the Project should not be designated. The Agency requested views from federal authorities, the Alberta Energy Regulator (AER), and Indigenous groups. Comments on potential effects due to the Project were received from Environment and Climate Change Canada (ECCC), Fisheries and Oceans Canada, and Health Canada.

On August 28, 2019, the IAA came into force, repealing the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), and terminating the designation request under CEAA 2012. The designation request is being considered under the IAA, in accordance with the Minister's powers to designate projects under subsection 9(1).

# **Project Context**

# **Project overview**

The Project involves the receipt and treatment of oilfield wastewater (including produced water, sour water, and fracturing flow back water) which is then returned to market as an alternative water source for re-use



within hydraulic fracturing operations. The Project is located near the town of Woking, Alberta in Birch Hills County on private land currently used for agricultural purposes (Figure 1).

Construction of the Project has not yet begun and the Project is subject to provincial regulatory processes. The AER determined that the Project is required to undergo a provincial hearing pursuant to the *Responsible Energy Development Act*, likely to be scheduled for 2020.

The Project is considered phase one of two possible phases (Figure 2). The second phase would involve the construction of a new pipeline for injecting treated water downhole into one of three wellsites for storage and recovery. Due to the tentative nature of phase two plans, the scope of this analysis is limited to phase one.

## Project components and activities

The key components of the Project include: a water treatment hub; truck loading stations; storage tanks; a vapour recovery unit; administrative buildings; and an on-site 7500 cubic metres stormwater run-off pond. The footprint of the facility is expected to be 240 metres by 200 metres.

Key activities include: wastewater offloading; wastewater testing for dissolved solids, suspended solids, and sulphide; gravitational separation of residual oil; and then multi-stage treatment regimes. Residual oil would be disposed at a third-party facility and sulphate, recovered through oxidization to a solid precipitate, would be removed and stored onsite in steel bins until disposed at an approved land waste management facility.

Treated water would be stored in isolated tanks in the tank farm until delivery to the customer.

# **Analysis of Designation Request**

## Authority to designate the Project

The Project, as described by the proponent, is not included in the *Physical Activities Regulations* of the IAA.

The carrying out of the Project has not substantially begun and no federal authority has exercised a power or performed a duty or function that would permit the Project to be carried out, in whole or in part.

Given this understanding of the Project, the Agency is of the view that the Minister may consider designating this project pursuant to subsection 9(1) of the IAA.

# Potential adverse effects within federal jurisdiction

The potential for adverse effects within federal jurisdiction, as defined in section 2 of the IAA, would be limited through project design and application of standard mitigation measures. The Agency, in consideration of information provided by the proponent and Envrionment and Climate Change Canada, is of the view that there is potential for adverse environmental effects to migratory birds through possible contact with contaminated water if the storage tanks are not fully enclosed, through collisions with vehicles or infrastructure, or through construction and operation activities.



Environment and Climate Change Canada noted that a non fish-bearing feeder creek is located within 250 metres of the Project and that if potential facility leaks, spills, or discharges occur into this creek, the contaminants could be carried downstream to fish-bearing waters of Kakut Lake, located approximately 1500 metres from the Project site. Kakut Lake is also a staging area for migratory birds. Fisheries and Oceans Canada advised that, as proposed, the Project would not result in serious harm to fish.

The potential changes to the environment that would cause effects within federal jurisdiction would be managed through existing legislative mechanisms. Potential effects to migratory birds would be addressed by compliance with the *Migratory Birds Convention Act, 1994* and other potential environmental effects are anticipated to be addressed through the AER regulatory processes.

No adverse transboundary effects in other provinces or outside Canada are expected. There are no federal lands in the vicinity of the Project.

Annexes I and II provide a summary table of the potential adverse effects, mitigation measures proposed by the proponent, and anticipated legislative mechanisms and regulatory processes if the Project proceeds.

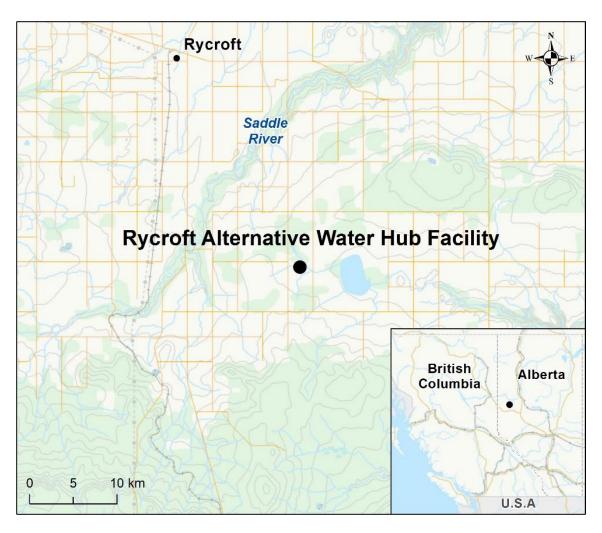


FIGURE 1: PROJECT LOCATION

THE RYCROFT PROJECT SITE IS LOCATED NEAR RYCROFT, ALBERTA, TO THE NORTH OF GRANDE PRAIRIE, ALBERTA, AND MARKED WITH A BLACK DOT.

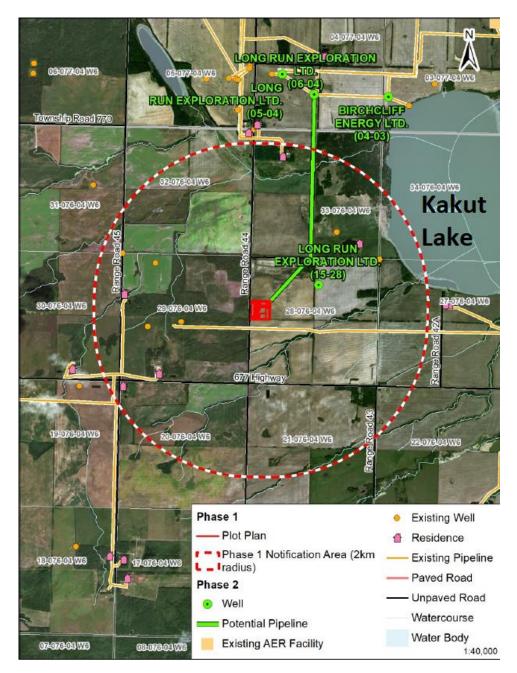


FIGURE 2: PROJECT OVERVIEW

PHASE 1 OF THE PROJECT IS UNDER CONSIDERATION IN THIS ANALYSIS. THE LOCATION OF KAKUT LAKE, AS MENTIONED IN THE TEXT, IS INDICATED.

#### Potential adverse direct or incidental effects

No adverse direct or incidental effects, as defined in section 2 of the IAA<sup>1</sup>, are anticipated, as no federal authority is expected to render a decision that would enable the Project to be carried out.

#### Public concerns related to adverse effects in federal jurisdiction

The Agency is of the view that the public concerns known to the Agency do not warrant designation under subsection 9(1) of the IAA. In addition to the concerns raised in the letter sent to the Minister, the Agency is aware of concerns within the public domain that are associated with the proponent's application for a licence under the AER. The concerns expressed by the requester, Halfway River First Nation, and those in relation to the licence application that relate to federal jurisdiction include:

- Migratory birds and their habitat due to possible spills of chemicals or contaminated fluids into waterbodies frequented by migratory birds.
- Water quality of Kakut Lake due to possible spills of chemicals or contaminated fluids and the impacts to fish and wildlife.

The Agency, in consideration of information provided by the proponent, Environment and Climate Change Canada and the Department of Fisheries and Oceans, is of the view that these potential effects are mitigated or addressed through existing legislative mechanisms and standard mitigation methods (Annexes I and II).

Additional concerns expressed by the requestor that were not considered as they are not within federal jurisdiction under the authority provided by subsection 9(1) include:

- Effects of heavy truck traffic on health and safety of nearby communities.
- Possible contaminated fluids or chemical spills into groundwater and/or soil.
- Local pollution from air emissions.

# Potential adverse impacts on section 35 rights of Indigenous peoples

The Agency understands that Project operations would occur on private land currently used for agricultural purposes and is unlikely to support the practice of Aboriginal and treaty rights.

The Agency requested views on the potential impacts of the Project from twenty Indigenous groups. Halfway River First Nation responded to the Agency's request and expressed concerns on potential adverse environmental effects and impacts to constitutionally-protected Treaty Rights under Treaty 8. These concerns

<sup>&</sup>lt;sup>1</sup> Direct or incidental effects means effects that are directly linked or necessarily incidental to a federal authority's exercise of a power or performance of a duty or function that would permit the carrying out, in whole or in part, of a physical activity or designated project, or to a federal authority's provision of financial assistance to a person for the purpose of enabling that activity or project to be carried out, in whole or in part.



are described in the preceding section, related to potential impacts due to spills, particularly those impacting the local watersheds including Kakut Lake. Doig River First Nation, in reponse to the Agency's request, found no risks with the Project that would warrant an environmental assessment.

The Agency is of the view that these potential effects are mitigated or addressed through existing legislative mechanisms and standard mitigation methods (Annexes I and II).

The following groups were contacted by the Agency: Blueberry First Nation, Dene Tha First Nation, Doig River First Nation, Duncan's First Nation, Foothills First Nation, Foothills Ojibway First Nation, Halfway River First Nation, Horse Lake First Nation, Kelly Lake Cree Nation, Kelly Lake Metis Settlement Society, Metis Nation of Alberta—Region 6, Metis Nation of British Columbia—Region 7, Paddle Prairie Metis Settlement, Prophet River First Nation, Saulteau First Nation, Sturgeon Lake Cree Nation, Sucker Creek First Nation, West Moberly First Nation, and Woodland Cree First Nation.

Therefore, the Agency is of the view that there is low potential for the Project to cause adverse impacts to section 35 rights.

## Regional and strategic assessments

There are no regional or strategic assessments pursuant to sections 92, 93 or 95 of the IAA that are relevant to the Project.

#### Conclusion

In consideration of information provided by the proponent, the Alberta Energy Regulator, federal authorities, Indigenous groups, and the public, the Agency is of the view that the Project does not warrant designation pursuant to subsection 9(1) of the IAA. The potential for adverse effects, as described in subsection 9(1) of the IAA, would be limited through Project design, the application of standard mitigation measures, and through existing legislative mechanisms (Annexes I and II). The concerns expressed by the requester are expected to be addressed through federal and provincial oversight and regulatory processes.

The Agency recognizes concerns about project-related effects within federal jurisdiction on water quality in fish-bearing waters of Kakut Lake, Alberta, and on the habitats of migratory birds. After consideration of information provided by the proponent, the Alberta Energy Regulator, federal authorities, Indigenous groups, and the public, the Agency, is of the view that the potential for a spill to reach Kakut Lake and impact migratory bird staging areas and fish bearing waters is low, as the lake is 1500 metres from the Project site, standard mitigation for spill response and containment will be applied, and the application of provincial regulatory processes applies. The potential for any incidental effects to migratory birds through strikes or nest disturbance would be mitigated through compliance with the *Migratory Birds Convention Act*, 1994 and application of standard mitigation measures.

To inform its analysis, the Agency sought and received input from the proponent; federal authorities; the AER; the requester; and Indigenous groups. Further, the Agency also considered the potential for the Project to



cause adverse impacts to Aboriginal and Treaty rights and is satisfied that these would be low given the application of standard mitigation measures and existing legislative and regulatory processes.

The Project is subject to provincial regulatory processes led by the Alberta Energy Regulator (AER) pursuant to the *Responsible Energy Development Act*.



# **ANNEX I**



## Annex I: Analysis Summary Table

|                  | Annex I: Analysis Summary Table                             |  |   |
|------------------|---|--|---|
| /<br>/<br>/<br>! | Impact Assessment Act Subsection 9(1) Considerations        | Effects and Mitigation   | Relevant Legislative Mechanisms   |
|                  |   | Proposed by the Proponent, Advice from Federal and Provincial Experts, and Public and Indigenous Concerns known to the Agency  |   |
|                  | A change to fish and fish                                   | Proponent  | AER mandatory regulatory processes will   |
|                  | habitat, as defined in subsection 2(1) of the Fisheries Act | To address the risk of potential leaks and discharges, the proponent plans to implement secondary containment of storage tanks and have an emergency response plan. The proponent anticipates no impacts to fish or fish habitat from the Project, as Kakut Lake is not anticipated to receive any impacts due to Project design and distance of the facility setback from the lake (approximately 1500 metres). The Alberta Fish and Wildlife Management Information System database showed no known fish species within 1000 metres of the proposed Project. | apply to the Project including Directives such as: Directive 055: Storage Requirements for the Upstream Petroleum Industry (requirements for storage of materials produced, generated, or used by upstream petroleum industry); Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry (planning requirements and implementation for emergency response |
|                  |   | Federal Authorities  | plan development).  |
|                  |   | ECCC indicated the potential for environmental effects to surface water quality and to waters frequented by fish from runoff, leaks, spills or discharges from the facility. However, Fisheries and Oceans Canada indicated that, as proposed, the Project will not result in serious harm to fish or prohibited effects on listed aquatic species at risk.  | AER compliance assurance program to enforce application of Directives.  |
|                  |   |  | AER regulatory process under the Responsible Energy Development Act will address unresolved public concerns on effects of a proposed project on the environment, including wildlife, and potential impacts of heavy traffic.  |
|                  |   | The handling and storage of substances at the facility is likely to be addressed through the Alberta Energy Regulator (AER) regulatory process.  |   |
|                  |   | Public   |   |

Public concerns identified include concerns about possible contaminated fluids or chemical spills and associated

effects on nearby waterbodies.

Indigenous

| Impact Assessment  | Effects and Mitigation  | Relevant Legislative Mechanisms   |
|--|---|---|
| Act Subsection 9(1) Considerations   | Proposed by the Proponent, Advice from Federal and<br>Provincial Experts, and Public and Indigenous<br>Concerns known to the Agency   |   |
|  | Halfway River First Nation identified concerns about possible contaminated fluids or accidental spills and associated effects on nearby waterbodies.  |   |
|  | Doig River noted no risks that would warrant an environmental assessment of the Project.  |   |
| A change to aquatic species other than fish, as defined in subsection 2(1) of the <i>Species at Risk Act</i> | No adverse effects to marine plants are anticipated, as there is no interaction between the Project and the marine environment.   | Not applicable  |
| A change to migratory birds, as defined in subsection 2(1) of the Migratory Birds Convention Act, 1994       | Proponent   | The Migratory Birds Convention Act, 1994  |
|  | The proponent does not anticipate impacts to migratory birds on the Project site as current land use in the area is   | prohibits all activities that are harmful to migratory birds, their eggs or their nests.  |
|  | agricultural and substantial or dense habitat is unavailable. The proponent will perform nest sweeps within seven days prior to disturbance if work is performed during Restricted Activity Periods. For Great Grey Owl nesting areas and Trumpeter Swans that are discovered, the proponent will use 1000 metre setback distances.   | The Species at Risk Act protects listed species by prohibiting killing, harming, harassing, capturing, or taking an individual of the species listed, or damaging or destroying a species' residence. |
|  | The proponent indicated they will comply with the <i>Migratory Birds Convention Act</i> , 1994 and the <i>Species at Risk Act</i> .   | AER regulatory process under the Responsible Energy Development Act to address effects of a proposed project on the environment, including wildlife, and potential impacts of heavy traffic.          |
|  | Federal Authorities   |   |
|  | ECCC indicated that potential adverse effects to migratory birds and species at risk exist. ECCC identified 17 listed species at risk (including migratory birds) whose ranges overlap with the Project area. ECCC identified additional potential Project effects including: mortality through exposure to deleterious substances in above-ground storage tanks or spills to areas frequented by migratory |   |
|  |   |   |

| Impact Assessment  | Effects and Mitigation   | Relevant Legislative Mechanisms   |
|--|--|---|
| Act Subsection 9(1) Considerations   | Proposed by the Proponent, Advice from Federal and Provincial Experts, and Public and Indigenous Concerns known to the Agency  |   |
|  | birds, through collisions with vehicles or infrastructure, or<br>through other Project activities; impacts to health through<br>contact or consumption of wastewater or other<br>contaminants; and impacts to local and regional populations<br>through effects on mortality and health.                               |   |
|  | ECCC indicated information on current use of the proposed Project area and surrounding area by migratory birds isunknown. Suitable habitat for migratory birds is not identified due to current use of the Project site for agricultural purposes.   |   |
|  | Public   |   |
|  | The requestor identified concerns relating to effects on migratory birds and their habitats.   |   |
| A change to the environment that would occur on federal lands                          | The Project is not located on federal lands. The nearest federal land is Duncan's First Nation, located approximately 66 kilometres from the Project site. Horse Lake First Nation is located approximate 78 kilometres from the Project site. The proponent does not anticipate impacts to federal lands.             | Not applicable  |
| A change to the environment that would occur in a province other than the one in which | No adverse transboundary effects in other provinces or outside Canada are anticipated. The nearest provincial and international borders are approximately 90 kilometres west and 730 kilometres south of the property, respectively.   | Alberta Ambient Air Quality Objectives are in place and intended to protect the environment and human health to an extent that is technically and |
| the project is being carried out or outside  | Proponent  | economically feasible.  |
| Canada   | The proponent indicated that the Project will not emit concentrations of air quality compounds that would exceed the Alberta Ambient Air Quality Objectives (AAQO). A vapour recovery unit will be used before venting to the atmosphere and a dust management plan to reduce emissions from dust will be implemented. |   |

| Impact Assessr | nent |
|----------------|------|
| Act Subsection | 9(1) |
| Considerations |      |

### **Effects and Mitigation**

**Relevant Legislative Mechanisms** 

Proposed by the Proponent, Advice from Federal and Provincial Experts, and Public and Indigenous Concerns known to the Agency

#### **Federal Authorities**

ECCC indicated the amount of air contaminant emissions, specifically hydrogen sulphide, is low and will be further minimized by use of the vapour recovery unit. ECCC indicated that the proponent's dust management plan would effectively reduce dust emissions.

With respect to the Indigenous peoples of Canada, an impact—occurring in Canada and resulting from any change to the environment—on physical and cultural heritage

No impacts on physical and cultural heritage are expected.

#### **Proponent**

The proponent does not anticipate historical, archaeological, paleontological, or architectural discoveries of significance since the proposed site is currently used for agriculture with regular, seasonal, and annual ground disturbance.

#### Indigenous

Halfway River First Nation expressed concerns about potential impacts to section 35 and Treaty Rights under Treaty 8.

Doig River noted no risks that would warrant an environmental assessment of the Project.

With respect to the Indigenous peoples of Canada, an impact–in Canada and resulting from any change to the environment–on current use of lands and

No impact on the current use of lands and resources for traditional purposes is anticipated. The Project is located on privately owned agricultural land and previously disturbed from agricultural use. No information is provided on whether current or traditional activities occur on these lands, however it is unlikely given historical agricultural use of the area.

Alberta's *Historical Resources Act* has a protocol to follow if historic resources are found during the course of development activities. Proponents are required to report discoveries and cease activities that may affect the resource during its evaluation.

The Historical Resources Act has a protocol to follow if historic resources are found during the course of development activities. Proponents are required to report discoveries and cease activities that may affect the resource during its evaluation.

| Impact Assessment  | Effects and Mitigation   | Relevant Legislative Mechanisms   |
|--|--|---|
| Act Subsection 9(1) Considerations   | Proposed by the Proponent, Advice from Federal and Provincial Experts, and Public and Indigenous Concerns known to the Agency  |   |
| resources for traditional  | Indigenous   |   |
| purposes   | Halfway River First Nation expressed concerns about potential impacts to section 35 and Treaty Rights under Treaty 8.  |   |
|  | Doig River noted no risks that would warrant an environmental assessment of the Project.   |   |
| With respect to the  | Proponent  | The Historical Resources Act has a protocol   |
| Indigenous peoples of Canada, an impact–in Canada and resulting from any change to the environment–on any structure, site, or thing that is of historical, archaeological, paleontological or architectural significance | The proponent does not anticipate historical, archaeological, paleontological, or architectural discoveries of significance since the proposed site is currently used for agriculture with regular, seasonal, and annual ground disturbance. | to follow if historic resources are found during the course of development activities. Proponents are required to report discoveries and cease activities that may affect the resource during its evaluation. |
| Any change occurring in  | Proponent  | Not applicable  |
| Canada to the health, social or economic conditions of the   | The proponent anticipates effects from air quality and local noise levels to be localized.   |   |
| Indigenous peoples of<br>Canada  | The proponent mitigation includes plans to reduce noise by utilizing electric pumps and noise suppression/high efficiency mufflers, and containment ponds and berms to prevent spills or run-off which may impact water quality.             |   |
|  | The proponent does not anticipate impacts to Indigenous groups. The property is on privately owned land that is previously disturbed due to agricultural activities. The closest reserve lands are approximately 66 kilometres away.         |   |

| Impact Assessment Act Subsection 9(1) Considerations | Effects and Mitigation  Proposed by the Proponent, Advice from Federal and Provincial Experts, and Public and Indigenous Concerns known to the Agency   | Relevant Legislative Mechanisms |
|--|---|---------------------------------|
|  | Indigenous  |                                 |
|  | Halfway River First Nation expressed concerns about potential impacts to section 35 and Treaty Rights under Treaty 8.   |                                 |
|  | Doig River noted no risks that would warrant an environmental assessment of the Project.  |                                 |
| Adverse direct or incidental effects                 | No federal authority is expected to render a decision that would enable the Project to be carried out. No federal authority is expected to provide financial assistance to enable the Project to be carried out, in whole or in part. | Not applicable                  |

# **ANNEX II**



#### Annex I: Potential Provincial Authorizations Relevant to the Project

# Authorization Description Directives contain requirements and processes that energy companies operating in Alberta Alberta must follow. Compliance is ensured through the AER's Compliance Assurance Program, Energy guided by their Integrated Compliance Assurance Framework. The following directives Regulator may be relevant to the Project: (AER) Directive 038: Noise Control Directive 047: Waste Reporting Requirements for Oilfield Waste Management **Facilities** Directive 055: Storage Requirements for the Upstream Petroleum Industry Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry. Addendum: Oilfield Waste Management Facility Approvals-Notification and Amendment Procedures Directive 060: Upstream Petroleum Industry Flaring, Incineration, and Venting Directive 067: Eligibility Requirements for Acquiring and Holding Energy Licenses and Approvals Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry Directive 075 / Directive 001: Oilfield Waste Liability Program / Requirements for Site Specific Liability Assessments in Support of the Energy Resources Conservation Board's Liability Management Programs When historic resources are found during the course of development activities in Alberta, Alberta proponents are required to report discoveries and cease activities that may affect the Historical resource during its evaluation. Resourcs Act Section 15 of the REDA and section 3 of the REDA General Regulations require the panel

Analysis Report Impact Assessment Agency of Canada

Alberta Responsible

| Authorization                       | Description  |
|-------------------------------------|--|
| Energy<br>Development<br>Act (REDA) | to consider the social, economic and environmental impacts of the proposed facility. |