Work Plan

Feasibility Study
Alcan Aluminum Corporation
Site #828005
Pittsford, New York

Alcan Aluminum Corporation
Cleveland, Ohio

October 1990

O'BRIEN & GERE

3057.032

WORK PLAN

FEASIBILITY STUDY

ALCAN ALUMINUM CORPORATION SITE #828005

PITTSFORD, NEW YORK

ALCAN ALUMINUM CORPORATION

CLEVELAND, OHIO

OCTOBER 1990

O'BRIEN & GERE ENGINEERS, INC.
5000 BRITTONFIELD PARKWAY
SYRACUSE, NEW YORK 13221

TABLE OF CONTENTS

	Page
SECTION 1 - FEASIBILITY STUDY	1
1.01 Introduction	1
1.02 Development of Alternatives	1
1.03 Screening of Alternatives	4
1.04 Detailed Analysis of Alternatives	7
1.05 Feasibility Study Report	11
SECTION 2 - PUBLIC PARTICIPATION ACTIVITIES	13
2.01 Public Participation Program	13
Schedule	

SECTION 1 - FEASIBILITY STUDY

1.01 Introduction

A Feasibility Study (FS) for the Alcan Aluminum Site #828005 (site) will be performed following completion of the Focused Remedial Investigation (RI). The objective of the FS will be to translate results of the Focused RI to an appropriate plan of action for the site. The conduct of an FS is governed by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, P.L. 96-510 - December 11, 1980) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA, P.L. 99-499 - October 17, 1986) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 40 CFR Part 300, Federal Register, Vol. 55 No. 46, March 8, 1990).

This Work Plan has been developed in accordance with the USEPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (Interim Final, October 1988) and the NCP.

As previously discussed in the Focused Remedial Investigation Work Plan for the site dated July 1990, prior investigatory work has been completed at the site. These data will be reviewed and used, as appropriate, in the conduct of the FS.

1.02 Development of Alternatives

The objective of this task is to develop, in a manner consistent with CERCLA as amended by SARA, and the NCP, a range of remedial alternatives that is reflective of appropriate waste management options that are protective of human

health and the environment. To achieve this objective, a three-phased approach will be used.

The first phase will consist of establishing remedial action objectives that identify the contaminants and media of interest, pathways of exposure, and preliminary remediation goals. Remedial action objectives will be based on human health and environmental concerns identified in the RI, and on state and federal requirements that are either potentially applicable or relevant and appropriate (ARARs) given the conditions at the site. The identification of ARARs is an iterative process which continues throughout the FS. ARARs will be identified and modified throughout the FS as a better understanding of remedial action alternatives is gained.

ARARs are identified as chemical-specific, location-specific, or action-specific. Chemical-specific ARARs are requirements that establish health or risk-based concentration limits or ranges for the hazardous substances or contaminants encountered at the site. Location-specific ARARs establish requirements on remedial activities based on the location in which the activities occur. Action-specific ARARs control remedial activities related to the management of the hazardous substances or contaminants at the site.

The second phase of this task will involve the identification and screening of remedial technologies. During this phase, general response actions (e.g., containment and treatment) will be defined for each medium of interest such that the remedial action objectives will be satisfied. The volumes or areas of contaminated media will then be identified, based on the site conditions defined by the RI, and the level of protectiveness specified by the remedial action objectives. Following this, remedial

technology types and process options which address the site-specific problems will be identified and screened on the basis of technical implementability. Technology types and process options that cannot be effectively implemented given the information readily available from the site characterization will not be considered further.

Each of the remaining process options will be screened in greater detail with respect to the data gathered during the RI based on the following criteria:

1. Effectiveness. This criterion will evaluate the technology process options in terms of handling the estimated areas or volumes of contaminated media and meeting the pertinent remedial action objectives. It will also consider the effectiveness in protecting human health and the environment during construction and implementation. This criterion will also consider how proven and reliable the process option would be relative to site conditions.
2. Implementability. The feasibility of implementing a process option under such institutional constraints as the availability of treatment, storage, and disposal services, special permitting requirements, and the need and availability of equipment and skilled workers will be evaluated by this criterion.
3. Cost. A cost analysis limited to relative capital and operation and maintenance costs will be conducted.

The third phase will involve the development of remedial alternatives. In this phase, general response actions and technology process options that passed the screening will be assembled into alternatives such that all the site problems are addressed. The alternatives will be developed representing a range of treatment and containment combinations. For source control actions, a range of alternatives will

be developed that use, as their principal element, treatment technologies that reduce the toxicity, mobility, or volume of materials. The range of alternatives will include various levels of treatment, from those that require no long-term operation and maintenance to those requiring extensive management. An alternative that primarily involves containment with little or no treatment will be developed. For ground water response actions, a range of alternatives will be developed that attain site-specific remediation levels within varying time frames using one or more technologies. In addition, a no action alternative will be developed.

The results of the development of alternatives will be presented in an technical memorandum, which will be submitted to Alcan and the New York State Department of Environmental Conservation (NYSDEC). The technical memorandum will include appropriate information on technologies being considered for remedial alternatives.

1.03 Screening of Alternatives

The objective of this task is to screen the remedial alternatives developed in Section 1.02 such that a refined range of the most promising alternatives is identified. The screening of alternatives will consist of three steps. The first step will be to refine the alternatives as appropriate by incorporating updated information generated by the RI. In the second step, the alternatives will be screened based on effectiveness, implementability and cost considerations. Third, a decision will be made as to which alternatives should be considered further.

The remedial alternatives will be screened using the following criteria:

1. Effectiveness. This criterion will evaluate the effectiveness of the alternative in protecting human health and the environment, both in the short-term and long-term, and the reductions in toxicity, mobility or volume it will achieve. Alternatives that result in a permanent reduction in the toxicity, mobility or volume of hazardous constituents shall be considered more effective than those that do not accomplish permanent reductions. Alternatives that would result in an increase in the toxicity, mobility or volume of hazardous constituents will not be considered further.

2. Implementability. This criterion will evaluate the technical and administrative feasibility of implementing the remedial alternative. Technical feasibility will evaluate the ability to construct, operate and maintain the alternative. The ability to obtain approvals, the availability of treatment, storage, and disposal services, and the requirements for an availability of specific equipment and specialists will be evaluated.

3. Cost. Cost estimates will be developed for each of the alternatives. The cost estimates will include capital and long-term operation and maintenance costs. An alternative whose cost far exceeds that of other alternatives that provide similar results will be eliminated from further consideration. Cost will not be used as the sole deciding factor when comparing alternatives that provide very different health or environmental results. For example, containment versus treatment alternatives will not be compared relative to costs.

The list of alternatives will be evaluated in this manner. If any of the alternatives require the acquisition of additional data in order to be evaluated, such as treatability data, those data will be generated at this time. It is difficult, if not

impossible, to project what treatability investigations, if any, might be needed for this FS. Should it be determined during this task that a treatability investigation is necessary, the following steps will be taken:

- Preparation of a work plan or modification of the existing work plan
- Preparation of a cost estimate for conducting the treatability study
- Performance of the investigation
- Evaluation of the data
- Preparation of a brief report presenting the results of the investigation.

Remedial alternatives with favorable evaluations will be analyzed in detail in Section 1.04. The alternatives selected for further analysis shall preserve, if possible, the range of treatment and containment alternatives developed initially. Alternatives with one or more innovative treatment technologies will be carried through to the detailed analysis if there is reasonable belief that they offer potential for better treatment performance or implementability, fewer or lesser impacts than other available approaches, or lower costs for similar levels of performance than demonstrated treatment technologies.

Remedial alternatives that pass the initial screening will be evaluated in detail in Section 1.04. The rationale for eliminating any alternatives during the screening process will be documented in the FS Report. The results of the screening of alternatives will be documented in a technical memorandum, which will be submitted to Alcan and the NYSDEC.

1.04 Detailed Analysis of Alternatives

The objective of this task is to evaluate the most promising remedial alternatives in detail to provide the basis for selection of a remedy. The detailed evaluation will include a technical and statutory assessment and cost analysis, as presented below. Prior to the evaluation of alternatives, a detailed description of each alternative will be prepared, including any refinements to the alternatives resulting from the acquisition of additional data.

The alternatives will be evaluated based on specific regulatory requirements, technical, cost and institutional considerations, and community and support agency acceptance. The detailed evaluation will consist of an assessment of each alternative against the evaluation criteria described below. The evaluation will also include a comparative analysis identifying the relative performance of each alternative against the criteria, which will result in a comparison between alternatives. The following criteria will be used to evaluate the alternatives in detail with respect to specific statutory requirements.

Overall protection of human health and the environment. The alternatives will be evaluated as to whether they can adequately protect human health and the environment from existing or potential exposures to the contaminant(s) identified at the site.

Compliance with ARARs. The alternatives will be evaluated as to whether they attain federal and state applicable or relevant and appropriate requirements (ARARs). If an alternative does not attain ARARs, the rationale for invoking one of the exceptions provided by SARA will be presented.

The following criteria will be used with respect to technical, cost and institutional considerations.

Long-term effectiveness and permanence. The alternatives will be evaluated for the long-term effectiveness and permanence they provide, together with the degree of certainty that the alternatives will be successful in producing the desired results. Factors to be included in this assessment include:

1. The magnitude of residual risks remaining after the implementation of a remedial alternative. This will be assessed in terms of the amounts and concentrations of the remaining hazardous materials, considering the persistence, toxicity and mobility of the hazardous substances.
2. The type, degree, and adequacy of long-term management required for untreated materials and residuals. Long-term management includes engineering controls, (e.g., containment technologies), institutional controls, monitoring, and operation and maintenance.
3. The potential for exposure of human and environmental receptors to remaining waste. This will include the potential threat to human health and the environment associated with containment technologies.
4. The long-term reliability of engineering and institutional controls used. This assessment will include considerations relative to the uncertainties associated with land disposal of untreated hazardous substances and treated residuals.
5. The potential need for replacement of the remedy.

Reduction of toxicity, mobility or volume. The degree to which the alternatives employ treatment technologies that reduce toxicity, mobility or volume

of the hazardous materials will be evaluated. The factors that will be considered include:

1. The treatment technologies used and the materials they would treat.
2. The amount of hazardous materials that will be destroyed or treated.
3. The expected degree of reduction in toxicity, mobility or volume of the hazardous materials.
4. The residuals that will remain following treatment of hazardous materials. This will include consideration of the persistence, toxicity and mobility of the hazardous materials.

Short-term effectiveness. The short-term effectiveness of the alternatives will be evaluated. Factors to be considered will include:

1. Short-term risks that might be posed to on-site and off-site human and environmental receptors during the implementation of a remedial alternative. Specifically, the risks associated with excavation, transportation and containment will be addressed.
2. The time frame required for the alternative to achieve protection.

Implementability. The ease or difficulty of implementing the alternative will be evaluated. The following factors will be considered:

1. The degree of difficulty in constructing the technologies associated with the alternative.
2. The expected reliability of the technologies associated with the alternative.
3. The need to obtain permits and approvals from regulatory agencies in order to implement the alternative.

4. The availability of equipment and specialists.

5. The available capacity and location of treatment, storage and disposal services necessary for implementation.

6. The availability of prospective technologies that are under consideration.

7. The ability to monitor the effectiveness of the remedy.

8. The ease of undertaking additional remedial actions, if required.

Cost. The costs that will be evaluated include:

1. Capital costs.

2. Operation and maintenance costs.

3. Present worth of capital costs and operation and maintenance costs.

4. Potential future remedial action costs.

The following criteria will be used to assess community and support agency concerns:

Community acceptance. Community positions on specific alternatives that are documented during preparation of the FS will be addressed during the detailed analysis of alternatives.

Regulatory acceptance. Technical and administrative issues of regulatory agencies will be addressed.

The detailed analysis of each of the alternatives will be compiled and the alternatives will be compared to each other based on the evaluation criteria. Particular attention will be paid to the relationship between protectiveness and costs of remedial alternatives.

The result of the detailed analysis of alternatives will be the identification of one alternative which is preferred over the others. In accordance with SARA, the preferred alternative must be protective of human health and the environment, cost-effective, and use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The preferred alternative shall also attain federal and state ARARs unless circumstances dictate otherwise. The preferred alternative should represent the best balance of the evaluation criteria.

The results of the detailed analysis of alternatives will be documented in a technical memorandum, which will be submitted to Alcan and the NYSDEC.

1.05 Feasibility Study Report

The objective of this task is to develop a report that presents the results of the FS. Any computations performed as part of the FS and supporting data will be included in appendices to the FS Report. The development and evaluation of the remedial alternatives will be summarized in a draft FS Report to be reviewed by Alcan. Comments by Alcan on the draft report will be discussed between Alcan and O'Brien & Gere at a meeting in Syracuse and the draft report revised accordingly.

The FS Report will then be submitted to the NYSDEC within 270 days of acceptance of the RI report. NYSDEC comments will be discussed at a meeting in Syracuse along with Alcan and O'Brien & Gere. The FS Report will be revised based on NYSDEC comments. If deemed necessary, another meeting will be held in Syracuse with the NYSDEC to discuss the revised FS report.

The FS Report will basically follow the outline below:

Introduction

Identification and Screening of Technologies

General Response Actions

Identification and Screening of Technology Types and Process Options

Development and Screening of Alternatives

Screening of Alternatives

Detailed Analysis of Alternatives

Comparison Among Alternatives

Summary of Detailed Analysis

Selection of Remedy

Conceptual Design

Tables

Figures

Appendices.

1.06 Progress Reports

In addition to technical memorandums which will be prepared throughout the FS at points specified in this Work Plan, monthly progress reports will be prepared and submitted to Alcan and the NYSDEC.

SECTION 2 - PUBLIC PARTICIPATION ACTIVITIES

2.01 Public Participation Program

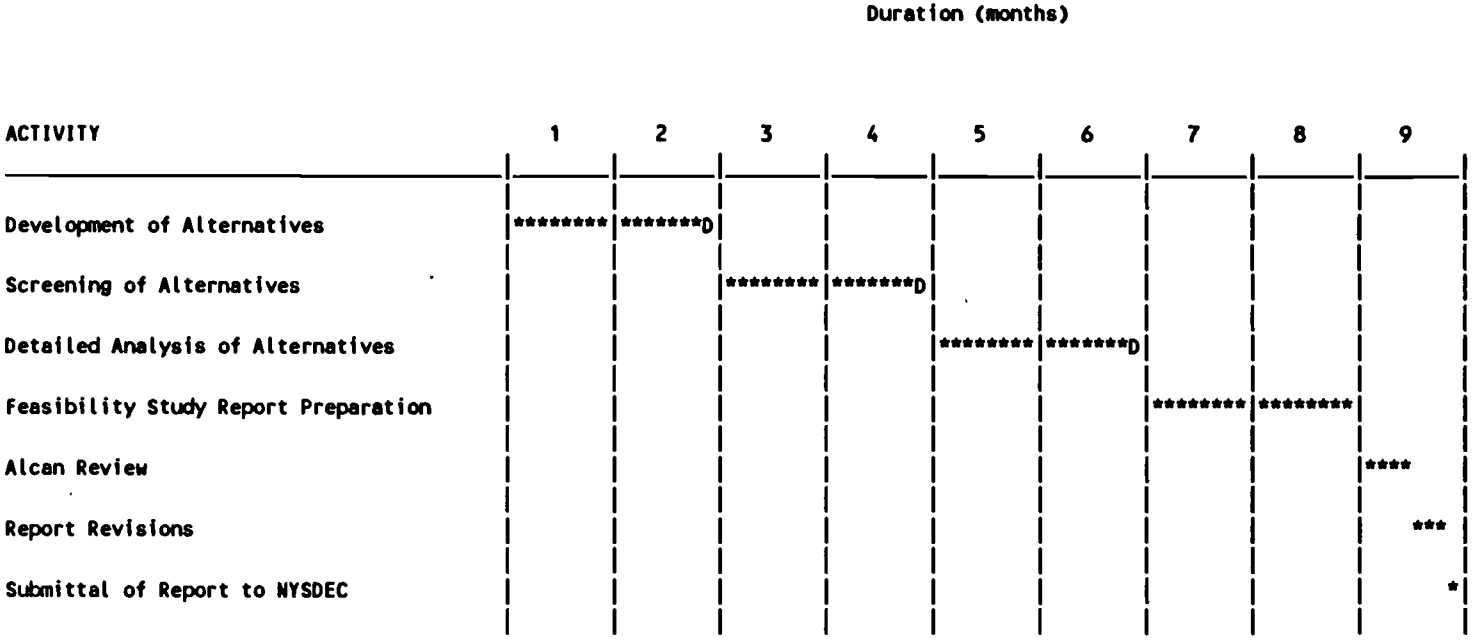
O'Brien & Gere will attend a public meeting which will be held upon completion of the RI/FS, prior to implementation of site remediation activities, in accordance with New York State guidance for citizen participation (6 NYCRR Part 375.7). As part of the public participation program, O'Brien & Gere will also review and comment on material published by the NYSDEC.

SCHEDULE

The following table presents a proposed schedule for FS activities. It should be noted that this schedule has been prepared with an optimistic view of the amount of time required to complete and respond to Alcan review and finalize deliverables. It should also be noted that this schedule does not account for time required to perform treatability investigations, if necessary.

SCHEDULE
FEASIBILITY STUDY

ALCAN ALUMINUM SITE #828005
ALCAN ALUMINUM CORPORATION
PITTSFORD, NEW YORK



D - Project Deliverable