

DRAFT

Code of Practice for Hydrovac Facilities

Made under the *Environmental Protection and Enhancement Act*
and the Waste Control Regulation

(October 2020)

FOREWORD

THIS IS A DRAFT FOR COMMENTING PURPOSES ONLY

Persons responsible for accepting and treating hydrovac waste must meet all requirements of the Code of Practice for Hydrovac Facilities.

There are four types of hydrovac facilities identified in this code:

- Hydrovac Storage Facilities
- On-site Hydrovac Treatment Facilities,
- Mobile Hydrovac Treatment Units, and
- Hydrovac Treatment Facilities

Hydrovac facilities regulated under this code are not permitted to accept hazardous waste. The code is for the acceptance or treatment of only non-hazardous waste as defined by the Waste Control Regulation (AR 192/1996).

In addition to the requirements of this Code of Practice, the persons responsible must comply with all requirements of the *Environmental Protection and Enhancement Act*, its associated regulations, and other applicable federal, provincial and municipal regulations (such as setbacks) and local bylaws.

Any comments or concerns regarding this **draft** Code should be made to:

Water and Waste Policy Branch
Alberta Environment and Parks
10th Floor Oxbridge Place
9820-106 Street
Edmonton, Alberta T5K 2J6

Email: aep.wasteregulation@gov.ab.ca

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DEFINITIONS

1 (1) All definitions in the *Environmental Protection and Enhancement Act* and associated regulations shall apply, except where expressly defined in this Code of Practice.

(2) For the purpose of this Code of Practice,

- (a) “Act” means the Environmental Protection and Enhancement Act, R.S.A. 2000 c. E-12, as amended;
- (b) “active area” means the area where receiving, processing, drying or storage of hydrovac wastes, hydrovac solids or hydrovac wastewater occurs;
- (c) “Alberta Tier 1 Guidelines” means Alberta Tier 1 Soil and Groundwater Remediation Guidelines (2019), published by Alberta Environment and Parks, as amended;
- (d) “amend” means to change or modify a process, technology, facility design or publication.
- (e) “amendment” means a product or other material mixed with hydrovac waste prior to or during treatment or drying process;
- (f) “amendment storage area” means the area where amendments are stored;
- (g) “background groundwater quality” means the groundwater quality prior to the start of hydrovac operations;
- (h) “Code of Practice” means the Code of Practice for Hydrovac Facilities, as amended or replaced from time to time;
- (i) “composite sample” means a sample that is collected by combining a number of discrete samples into one homogenized sample in order to represent the average concentration of the material for which the discrete samples were taken;
- (j) “day” means any period of 24 consecutive hours unless otherwise specified;
- (k) “design capacity” means the total capacity at any one time of the hydrovac facility;
- (l) “final closure” means the period after all waste acceptance has ceased;
- (m) “first party waste” means waste that is generated and is managed at an on-site facility.
- (n) “grab sample” means when referring to a sample an individual sample collected that is representative of the substance sampled.
- (o) “groundwater” means groundwater as defined in the *Water Act*;
- (p) “groundwater contamination” is defined as a change in water quality that produces a noticeable or measurable change in groundwater characteristics;
- (q) “groundwater monitoring well” means a water well drilled at a site to measure groundwater levels and collect groundwater samples for the purpose of physical, chemical, or biological analysis to determine the concentration of groundwater contaminants;
- (r) “groundwater quality control limit” means a concentration of a key indicator parameter above which there is a risk that groundwater quality is impacted by hydrovac activity.

- (s) “hydraulic conductivity” means the ease with which a fluid can be transported through a material;
- (t) “hydrovac” is a process that uses pressurized water (or liquid) to loosen surface or subsurface material, which is then excavated using vacuum as an excavation process.
- (u) “hydrovac facility” means a facility that accepts or treats hydrovac waste, hydrovac wastewater or hydrovac solids.
- (v) “hydrovac treatment facility” means a facility that accepts and treats hydrovac waste in excess of 10 tonnes per month.
- (w) “hydrovac solids” are solids that are removed from the hydrovac waste, in the hydrovac truck or at a hydrovac facility.
- (x) “hydrovac solids storage area” means the area where hydrovac solids are placed to dry;
- (y) “hydrovac storage facility” means a facility that accepts hydrovac waste for temporary storage, but does not include an on-site hydrovac storage facility.
- (z) “hydrovac waste” means a slurry that is created from a hydrovac process and includes any solid or liquid material or combination of them that is intended to be treated or disposed of.
- (aa) “hydrovac wastewater” means liquids separated from hydrovac waste, in the hydrovac truck or at a hydrovac facility.
- (bb) “ISO 17025” means the international standard, developed and published by International Organization for Standardization (ISO), specifying the management and technical requirements for laboratories;
- (cc) “liner” means a continuous layer constructed of natural or man made materials, beneath or on the sides of a structure or facility, which restricts the downward or lateral migration of the contents of the structure or facility;
- (dd) “mobile hydrovac treatment unit” means a self contained unit that is mobile and treats hydrovac waste, hydrovac wastewater or hydrovac solids at an on-site facility.
- (ee) “on-site facility” has the meaning as defined in the Waste Control Regulation and means a facility that is used solely to deal with wastes or recyclables generated on property that is owned, rented or leased by the person responsible for the facility;
- (ff) “on-site hydrovac treatment facility” means a facility that treats only first party hydrovac waste, hydrovac wastewater or hydrovac solids.
- (gg) “person responsible” has the meaning as defined in the Waste Control Regulation.
- (hh) “processing area” means the combination of treatment areas and storage areas of hydrovac waste, hydrovac solids and hydrovac wastewater but does not include the area used for the management of run-off or areas where earth or inert waste is stored.
- (ii) “qualified professional” means a person who:
 - i. is registered in Alberta with a professional association and is subject to professional association’s code of ethics and disciplinary action, and

- ii. has acquired the relevant education, work experience, accreditation, and expertise to provide technical advice pertaining to this Code of Practice;
- (jj) “receiving area” means the area used to receive and temporarily store incoming hydrovac waste;
- (kk) “retention pond” means a pond that is designed to store hydrovac wastewater and run-off ;
- (ll) “run-off” means any rainwater or meltwater that drains as surface flow from the receiving, processing, drying and associated storage areas of a hydrovac facility;
- (mm) “run-on” means any rainwater or meltwater that drains as surface flow onto the receiving, processing, drying and associated areas of a hydrovac facility;
- (nn) “storage site” has the meaning as defined in the Waste Control Regulation and means a waste management facility where waste, other than hazardous waste, is (i) stored, (ii) sorted, compacted, shredded, ground or processed, or (iii) collected and held for removal to another waste management facility.
- (oo) “subsoil” means the layer of soil directly below the topsoil, to a maximum depth of 1.2 metres below the topsoil surface, that consists of the B and C horizons as defined in The System of Soil Classification for Canada, Agriculture and Agri-Food Canada, 1998, Publication 1643, 3rd Edition, as amended or replaced from time to time;
- (pp) “topsoil” means the uppermost layers of soil that consist of the L, F, H, O, and A horizons as defined in The System of Soil Classification for Canada, Agriculture and Agri-Food Canada, 1998, Publication 1643, 3rd Edition, as amended or replaced from time to time;
- (qq) “treat” means a method, technique or process, including, without limitation, neutralization and stabilization, that is designed to change the physical, chemical or biological character or composition of a substance; for the purpose of this Code of Practice does not include unassisted gravity separation or gravity separation using only a centrifuge;
- (rr) “water table” means the upper level of groundwater: the level below which the pore spaces in the soil or rock are saturated with water;
- (ss) “water well” means an opening in the ground, whether drilled or altered from its natural state, that is used:
 - i. for the production of groundwater for any purpose;
 - ii. obtaining data on groundwater; or
 - iii. recharging an underground formation from which groundwater can be recovered, and includes any related equipment, buildings, structures and appurtenances;
- (tt) “working surface” means a surface that can withstand the wear and tear of equipment and forms the base of the receiving, processing, and storage areas of a hydrovac facility in addition to a defined protective layer, as per the application;
- (uu) “year” means a calendar year.

APPLICABILITY

2 (1) This Code of Practice outlines the minimum requirements for the design, construction, operation, monitoring, and closure of hydrovac facilities.

(2) This Code of Practice applies to:

- (a) hydrovac treatment facilities that accept and treat hydrovac waste as described in this Code of Practice;
- (b) hydrovac storage facilities that accept and store hydrovac waste;
- (c) on-site hydrovac treatment facilities that treat first-party hydrovac waste, hydrovac solids or hydrovac wastewater; or
- (d) mobile hydrovac treatment units that treat hydrovac waste, hydrovac solids, or hydrovac wastewater.

(3) This Code of Practice does not apply to:

- (a) hydrovac facilities that accept or treat hazardous waste;
- (b) hydrovac facilities that hold an approval under the *Environmental Protection and Enhancement Act*;
- (c) on-site hydrovac facilities that store or on-site facilities that use only gravity separation on first-party hydrovac waste; or
- (d) waste management facilities regulated by the Alberta Energy Regulator.

COMPLIANCE WITH THE CODE OF PRACTICE

3 (1) For the purposes of [\(insert regulatory link here\)](#) the person responsible for a hydrovac facility shall comply with the requirements set out in this Code of Practice.

APPLICATION FOR HYDROVAC STORAGE SITES

4 (1) The person responsible for a newly proposed hydrovac storage facility, or a new notification of an existing hydrovac storage facility shall submit a notification containing, at a minimum, the following documents:

- (a) a completed notification form;
- (b) a facility design plan and specifications;
 - i. types of incoming hydrovac waste;
 - ii. processing method:
 - a. technology used;
 - b. amendments used;
 - c. re-use limitations of the amendments used; and
 - d. a description on how amendments do not treat the waste;
 - iii. design capacity as per Section 11(4);
 - iv. a containment system for hydrovac waste, hydrovac solids, hydrovac wastewater and run-off as per Section 10(2);

- v. a working surface in processing areas capable of withstanding wear through normal operations;
 - vi. a run-on control system to prevent flow of water onto active area to at least the peak discharge from a 1 in 25 year – 24 hour duration storm event;
 - vii. a run-off control system to collect and control the volume of run-off for a 1 in 25 year – 24 hour duration storm event;
 - viii. a site plan showing:
 - a. the layout of the proposed hydrovac facility;
 - b. adjacent developments (such as residences, potable water sources, public roadways and natural water bodies); and
 - c. cross-sections showing grades and elevations of working surfaces in the active areas and retention ponds;
 - ix. the proposed use or disposal of the hydrovac solids;
 - x. a reclamation plan including:
 - a. the timeline associated with the activity; and
 - b. a topsoil/subsoil conservation plan and replacement plan; and
- (c) an operations plan as listed in Section 8(1).
- (2) The documents submitted to the Director under Section 4(1) must be submitted in the form and manner prescribed by the Director.
- (3) Design plan and specifications submitted to the Director under Section 4(1) must be prepared and signed by a Qualified Professional as part of the notification application.

APPLICATION FOR ON-SITE HYDROVAC TREATMENT FACILITIES

5 (1) The person responsible for an on-site hydrovac treatment facility shall submit an application for registration for a new on-site hydrovac treatment facility, or to amend the registration of an existing on-site hydrovac treatment facility containing, at a minimum, the following documents:

- (a) a completed registration application form;
- (b) a facility design plan and specifications;
 - i. processing method:
 - i. type of hydrovac waste;
 - ii. technology used;
 - iii. amendments used; and
 - iv. re-use limitations of the amendments used;
 - ii. design capacity as per Section 11(4);
 - iii. a description and interpretation of groundwater elevations, flow, patterns and composition;
 - iv. a containment system used for hydrovac waste, hydrovac solids, hydrovac wastewater and run-off as listed in Section 10(2);
 - v. a working surface in processing areas capable of withstanding wear through normal operations;

- vi. a run-on control system to prevent flow of water onto active area to at least the peak discharge from a 1 in 25 year – 24 hour duration storm event;
 - vii. a run-off control system to collect and control the volume of run-off for a 1 in 25 year – 24 hour duration storm event;
 - viii. a site plan showing:
 - a. the layout of the proposed hydrovac facility;
 - b. adjacent developments (such as residences, potable water sources, public roadways and natural water bodies); and
 - c. cross-sections showing grades and elevations of working surfaces in the active areas and retention ponds;
 - ix. the proposed use or disposal of the hydrovac solids;
 - x. a reclamation plan including:
 - a. the timeline associated with the activity, and
 - b. a topsoil/subsoil conservation plan and replacement plan;
- (c) an operations plan as listed in Section 8(1); and
- (d) a groundwater monitoring program as listed in Section 12(2).
- (2) The documents submitted to the Director under Section 5(1) must be submitted in the form and manner prescribed by the Director.
- (3) Design plan and specifications and groundwater monitoring program submitted to the Director under Section 5(1) must be prepared and signed by a Qualified Professional as part of the registration application.
- (4) The documents submitted to the Director under Section 5(1) must also include any additional information required by the Approvals and Registrations Procedure Regulation (AR 113/93).

APPLICATION FOR MOBILE TREATMENT UNITS

- 6** (1) The person responsible for a mobile hydrovac treatment unit shall submit an application for registration for a new mobile hydrovac treatment unit, or to amend the registration of an existing mobile hydrovac treatment unit containing, at a minimum, the following documents:
- (a) a completed registration application form;
 - (b) the unit design plan and specifications;
 - i. types of hydrovac waste;
 - a. processing method:
 - i. technology used;
 - ii. amendments used; and
 - iii. re-use limitations of the amendments used;
 - ii. a description of the containment system used for hydrovac waste, hydrovac solids, hydrovac wastewater and run-off as listed in Section 10(2); and
 - (c) an operations plan as listed in Section 8(1).
- (2) The documents submitted to the Director under Section 6(1) must be submitted in the form and manner prescribed by the Director.

- (3) The documents submitted to the Director under Section 6(1) must also include any additional information required by the Approvals and Registrations Procedure Regulation (AR 113/93).

APPLICATION FOR HYDROVAC TREATMENT FACILITIES

7 (1) In addition to any information required by the Director under the Approvals and Registrations Procedure Regulation (AR 113/93), the person responsible for a hydrovac treatment facility shall submit an application for registration for a newly proposed hydrovac treatment facility, or amend the registration of an existing hydrovac treatment facility containing, at a minimum, the following documents:

- (a) a completed registration application form;
 - (b) a facility design plan and specifications as listed in Section 7(3);
 - (c) an operations plan as listed in Section 8(1);
 - (d) a groundwater monitoring program as listed in Section 12(2); and
 - (e) a financial security calculation as listed in Section 13(6).
- (2) The documents submitted to the Director under Section 7(1) must be submitted in the form and manner prescribed by the Director.
- (3) The person responsible for a hydrovac treatment facility shall submit a written design plan and specifications that is prepared and signed by a Qualified Professional as part of the registration application and include the following information:
- (a) A design report that provides a description of proposed:
 - i. types of incoming hydrovac waste;
 - ii. processing method:
 - a. technology used;
 - b. amendments used; and
 - c. re-use limitations of the amendments used;
 - iii. design capacity as per Section 11(4);
 - iv. containment system used for hydrovac waste, hydrovac solids, hydrovac wastewater and run-off as listed in Section 8(3);
 - v. a working surface in processing areas capable of withstanding wear through normal operations;
 - vi. a run-on control system to prevent flow of water onto active areas of the hydrovac facility for events of up to at least the peak discharge from a 1 in 25 year – 24 hour duration storm event;
 - vii. a run-off control system to collect and control the volume of run-off for a 1 in 25 year – 24 hour duration storm event;
 - viii. a description and interpretation of groundwater elevations, flow, patterns and composition;
 - ix. a groundwater monitoring system, unless otherwise authorized in writing by the Director; and
 - x. a site plan showing:

- a. the proposed hydrovac facility and adjacent developments (such as residences, potable water sources, public roadways and natural water bodies);
- b. topographic site plans showing the overall site development and setbacks from property lines; and
- c. cross-sections showing grades and elevations of working surfaces in the active areas and retention ponds.

OPERATIONS PLAN

8 (1) The Operations Plan submitted by the person responsible shall include, at a minimum, the following:

- (a) waste acceptance and handling procedures;
- (b) site security and public access control procedures;
- (c) working surface inspection and maintenance program;
- (d) quality testing and verification plan to confirm:
 - i. hydrovac solids meets the intended use before removal from processing areas;
 - ii. hydrovac wastewater meets the intended use before removal from site;
 - iii. run-off meets the intended use or disposal before removal from site; and
- (e) management procedures including monthly monitoring of water levels in retention ponds and tanks, and if applicable use or removal;
- (f) procedures for handling and disposal of wastes.
- (g) an emergency response plan;
- (h) contingency plan for reasonably foreseeable events;
- (i) reporting procedures; and
- (j) a plan to conserve all topsoil and subsoil for reclamation that includes at a minimum, the following:
 - i. the location of the stockpiles;
 - ii. the content of the stockpiles;
 - iii. the volume of the stockpiles; and
 - iv. provisions to stockpile the soil as follows:
 - a. to locate all soil stockpiles at the facility;
 - b. on stable foundations;
 - c. topsoil on undisturbed topsoil
 - d. subsoil on undisturbed subsoil; and
 - e. topsoil and subsoil are not mixed together.

(2) The person responsible for a hydrovac facility shall:

- (a) implement; and

- (b) update the Operations Plan in compliance with the hydrovac facility Design Plan and Specifications.
- (3) Unless otherwise authorized in writing by the Director, the person responsible for a hydrovac facility, pursuant to this Code of Practice, shall at all times operate the facility in accordance with the Operations Plan.
- (4) Any conflict between the Operations Plan and the requirements in this Code of Practice shall be corrected to align with this code, unless authorized in writing by the Director.

CHANGES TO PLANS OR PERSON RESPONSIBLE

- 9** (1) The person responsible for a hydrovac facility shall submit proposed change(s) to any plans submitted in Section 4, Section 5, Section 6 or Section 7 of this Code for review and authorization by the Director in writing prior to implementation.
- (2) Following the Director written authorization of the proposed changes referenced in Section 9(1), the person responsible for a hydrovac facility shall immediately incorporate the authorized changes into the facility's Operating Record, and hydrovac facility personnel shall be notified and trained on specific changes accordingly.
- (3) The Director shall be notified in writing regarding any changes to the person responsible for a hydrovac facility.

CONSTRUCTION SPECIFICATIONS

- 10** (1) Construction of a new hydrovac facility or the expansion of an existing hydrovac facility shall not commence until a notification or registration number has been issued by the Director for a hydrovac facility;
- (a) The construction of a hydrovac facility shall comply with the Design Plan and Specifications submitted by the person responsible.
 - (b) Any deviations from the Design Plan and Specifications must be authorized in writing by the Director.

(2) Containment System

- (a) All hydrovac waste, hydrovac wastewater, hydrovac solids and run-off water must be stored in a containment system.
- (b) The containment system for a hydrovac facility shall include, as a minimum, the following construction criteria:
 - i. a tanks or bin constructed of a non-earthen materials that provide containment and structural support for liquids and without precluding the generality of the foregoing, may include materials such as wood, concrete, steel and plastic; or
 - ii. a liner system placed under all active areas of the facility and a retention pond liner for storage of hydrovac waste, run-off and hydrovac wastewater.

Liner System

- (c) The liner system included shall include, as a minimum, the following construction criteria:

- i. the liner system must be constructed of a clayey material:
 - a. with a thickness of at least 0.5 metres measured perpendicular to the liner surface; and
 - b. with a hydraulic conductivity of 1×10^{-9} m/sec or less; or
- ii. alternative liner material that provides equivalent or superior performance to Section 10(2)(c)(i).

Retention Pond Liner

- (d) The retention pond liner must include as a minimum, the following construction criteria:
 - i. construction of a clayey material:
 - a. with a thickness of at least 1.0 metres measured perpendicular to the liner surface, and
 - b. that has a hydraulic conductivity of 1×10^{-9} m/sec or less
 - ii. alternative liner material that provides equivalent or superior performance to Section 10(2)(d)(i).
- (e) the retention pond liner and the liner must have a separation of at least 1 metre between the seasonally high water table and the bottom of the liner;

FACILITY OPERATIONS

11 (1) Signage

- (1) The person responsible for a hydrovac facility shall:
 - (a) post; and,
 - (b) maintain signs at the hydrovac facility entrance providing, at a minimum, the following information:
 - i. the person responsible;
 - ii. hours of operation; and
 - iii. telephone numbers for:
 - a. 24-hour emergency contact;
 - b. the local fire department; and
 - c. Alberta Environment and Parks (1-800-222-6514).

(2) Acceptance, Inspection, Storage of Wastes and Amendments

- (1) The person responsible for a hydrovac facility shall operate their hydrovac facility in accordance with the following waste and amendments acceptance, inspection, and storage requirements:
 - (a) waste accepted at a hydrovac facility will be inspected upon arrival,
 - (b) wastes that are determined to be unacceptable shall be segregated and removed for appropriate disposal.
 - (c) unacceptable materials removed shall not to be stored at the hydrovac facility for longer than seven days

- (2) Unacceptable wastes identified in Section 11(2)(1) shall be reported to the Director according to Section 13(3)

(3) Complaints

- (1) Upon receiving a complaint regarding the hydrovac facility, the person responsible for the hydrovac facility shall:
- (a) investigate the complaint;
 - (b) record the following information regarding the complaint:
 - i. the place, date and time of the complaint;
 - ii. the name, and address of the complainant, if provided;
 - iii. details of the complaint; and
 - iv. a summary of all measures and actions taken to address the complaint.

(4) Design Capacity

- (1) The person responsible for a hydrovac facility shall ensure the facility does not exceed the design capacity as submitted in the notification and registration.
- (2) The design capacity shall include maximum measurements of the base area, measured in meters (m), for each of the following areas, where applicable:
- (a) receiving area;
 - (b) amendment storage area;
 - (c) processing area; and
 - (d) hydrovac solids storage area.
- (3) The design capacity shall include the maximum storage height, measured in meters (m), for each of the following areas, where applicable:
- (a) receiving area;
 - (b) amendment storage area;
 - (c) processing area; and
 - (d) hydrovac solids storage area
- (4) The design capacity shall include the maximum volume, measured in cubic meters (m³), for the hydrovac wastewater storage areas and run-off storage areas, where applicable:
- (a) retention pond; and
 - (b) tanks.
- (5) Where a hydrovac facility contains multiple independent receiving areas, amendment storage areas, processing areas, hydrovac solids storage areas, retention ponds and tanks, the design capacity described in Section 11(5)(2) through to Section 11(5)(4) shall include measurements for each independent area.

ENVIRONMENTAL MONITORING STANDARDS

12 (1) Sampling and Analytical Standards

(1) With respect to any sample required to be taken pursuant to this Code of Practice, all samples shall be:

- i. collected;
- ii. preserved;
- iii. stored;
- iv. handled; and
- v. analyzed in accordance with:
 - a. the Methods Manual for Chemical Analysis of Water and Wastes, Alberta Environmental Centre, Vegreville, Alberta, 1996, AECV96-M1 as amended; or
 - b. the Standard Methods for the Examination of Water and Wastewater, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 2010, as amended; or
 - c. The Toxicity Concentration Leaching Procedure (TCLP) US EPA Regulation 40, CFR 261, Appendix II, Method 1311; or
 - d. The Test Methods for Evaluating Solids Wastes Physical, Chemical Methods USEPEA, SW 846, September 1996, as amended; or
 - e. Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment, Volume 4 Analytical Methods. Canadian Council of Ministers of the Environment, 2016 PN 1557; or
 - f. Soil Sampling and Methods of Analysis, 2nd edition. (Carter, M.R. and E.G. Gregorich, eds.), 2008. Canadian Society of Soil Science. CRC Press, Boca Raton; or
 - g. a method authorized in writing by the Director.

(2) The person responsible for a hydrovac facility shall analyze all samples that are required to be obtained by this Code of Practice in a laboratory accredited pursuant to ISO 17025 standard, as amended, for the specific parameter(s) to be analyzed, unless otherwise authorized in writing by the Director.

(2) Groundwater Monitoring Program

(1) The groundwater monitoring program shall be prepared by a Qualified Professional and shall include, at a minimum, the following:

- (a) at least one monitoring well up gradient of the facility;
- (b) at least two monitoring wells down gradient of the facility; and
- (c) a type of well that is appropriate to monitor for contaminants.
- (d) a plan to obtain background groundwater quality report for each monitoring well and include, at a minimum, the following:

- i. retrieval of two samples per year for four consecutive years for parameters as set out in Table 1; and
 - ii. additional background groundwater parameters testing as specified in writing by the Director.
- (e) existing facilities shall establish background levels by
- i. using historical data; or
 - ii. obtaining groundwater samples from monitoring wells established in nearby areas not affected by hydrovac activity;
- (f) a plan to establish groundwater quality control limits for each naturally occurring parameter;
- (g) a detailed program for groundwater sample collection frequency and analysis, that includes, at a minimum, the following:
- i. monitoring the depth to water at each monitoring well at the time of sampling;
 - ii. retrieval of one sample per year for parameters as set out in Table 1, once background sampling has been established; and
 - iii. additional parameters testing as specified in writing by the Director.
- (h) groundwater contingency plan.

TABLE 1 - Groundwater Parameters for Routine Monitoring

Parameters	Parameters	Parameters
Arsenic, dissolved	Vanadium, dissolved	Calcium
Barium, dissolved	Ammonia	Magnesium
Boron, dissolved	Nitrate-Nitrogen	Sodium
Cadmium, dissolved	Total Kjeldahl Nitrogen	Potassium
Chromium, dissolved	pH	Chloride
Copper, dissolved	Total dissolved solids	Sulphate
Iron, dissolved	Electrical conductivity	Benzene
Lead, dissolved	Chemical oxygen demand	Ethylbenzene
Manganese, dissolved	Total organic carbon	Toluene
Mercury, dissolved	Total phosphorus	Xylene

- (2) Unless otherwise authorized in writing by the Director, the person responsible for a hydrovac facility shall
- (a) implement; and
 - (b) maintain; the groundwater monitoring program.
- (3) Unless otherwise authorized in writing by the Director the person responsible for a hydrovac facility shall ensure that each groundwater monitoring well is:
- (a) protected from damage; and
 - (b) locked, except when samples are taken.
- (4) If a groundwater sample cannot be collected because the monitoring well is damaged or is no longer capable of producing a representative sample:
- (a) the groundwater monitoring well shall be cleaned, repaired or replaced; and

- (b) a representative groundwater sample shall be collected prior to the next scheduled sampling date, unless otherwise authorized in writing by the Director.

(3) Implementation of Groundwater Contingency Plan

- (1) Throughout the active life and final-closure of the facility, the groundwater quality for each parameter shall not exceed the established groundwater quality control limits.
- (2) The person responsible for a hydrovac facility shall immediately notify the Director and shall implement the Groundwater Contingency Plan if:
 - (a) groundwater quality of one or more parameters displays an increasing trend; or
 - (b) groundwater parameters exceeds the corresponding groundwater quality control limit; or
 - (c) any parameter not naturally present in groundwater is detected in three consecutive sampling events.
- (3) If at any time throughout the operational and final closure period groundwater contamination occurs at the hydrovac facility, the person responsible for a hydrovac facility shall:
 - (a) immediately notify the Director in accordance with the Act and the regulations under the Act,
 - i. identify the source that is adding contaminant mass to the groundwater;
 - ii. remove or control the source to prevent further contamination;
 - iii. construct, repair, or replace the structure or thing, if that is necessary, to prevent further contamination;
 - iv. conduct additional groundwater monitoring; and
 - v. any other duties imposed under the Act or the regulations under the Act.

(4) Hydrovac Wastewater Monitoring

- (1) The person responsible for hydrovac facility shall collect, at a minimum, one representative grab sample from every 250 cubic meters of hydrovac wastewater.
- (2) Hydrovac wastewater shall be used and disposed of only in the following manner:
 - (a) if the quality meets the requirements in Table 2, used;
 - i. off site for hydrovac operations
 - ii. on the areas outside the active areas for dust control; or
 - iii. as otherwise authorized in writing by the Director.
 - (b) disposed of at:
 - i. an Alberta Environment and Parks authorized waste management facility authorized to accept such waste
 - ii. an Alberta Energy Regulated facility authorized waste management facility authorized to accept such waste
 - iii. a waste management facility approved by a local environmental authority outside of Alberta authorized to accept such waste; or,
 - iv. as otherwise authorized in writing by the Director.

Table 2: Limits for Hydrovac Wastewater

Parameter	Limit
Chlorides	120 mg/L
pH	The Environmental Quality Guidelines for Alberta Surface Waters, Alberta Government, 2018, as amended,
Metals (listed in Table 2 of the Alberta Tier 1 Guidelines)	
Benzene	
Toluene	
Ethylbenzene	
Xylene	
PHC F1	
PHC F2	

(5) Hydrovac Solids Monitoring

- (1) The person responsible for hydrovac facility shall collect, at a minimum, one representative composite sample from every 250 cubic meters of hydrovac solids produced;
- (2) The person responsible shall not allow hydrovac solids to be given away, sold, used on-site, or used unless the hydrovac solids meets:
 - (a) the hydrovac solids quality requirements, as set out in Table 3; or
 - (b) as specified in writing by the Director.
- (3) The person responsible for a hydrovac facility shall ensure that analytical results have been received, verified and are in compliance with subsections (a) and (b) prior to hydrovac solids being removed the hydrovac facility or used on-site.
 - (a) Hydrovac solids that are sold or given away must include the following:
 - i. analytical results of the material that shows the hydrovac solids meets the requirements in Table 3; and
 - ii. a record of the location the solids are being deposited;
 - (b) Hydrovac solids material that does not meet the hydrovac quality requirements set out in subsections shall be disposed of at:
 - i. an Alberta Environment and Parks authorized waste management facility authorized to accept such waste
 - ii. an Alberta Energy Regulated facility authorized waste management facility authorized to accept such waste
 - iii. a waste management facility approved by a local environmental authority outside of Alberta authorized to accept such waste; or,
 - iv. as otherwise authorized in writing by the Director.

Table 3: Limits for Hydrovac Solids

Parameter	Limit
pH	Between 6.0 and 9.0
Metals (listed in Table 2 of the Alberta Tier 1 Guidelines)	Refer to Table 1 of Alberta Tier 1 Guidelines for agricultural use
Benzene	
Toluene	
Ethylbenzene	
Xylene	
F1	
F2	
F3	
F4	
Electrical Conductivity ds/m	Refer to Table 4 of Alberta Tier 1 Salt Remediation Guidelines, for good rating category
Sodium Adsorption Ratio	

(6) Run-off Monitoring

- (1) The person responsible for hydrovac facility shall collect a representative grab sample of the run-off, prior to the release of the run-off.
- (2) Run-off shall be used and disposed of only in the following manner:
 - (a) if the quality meets the requirements in Table 2, used;
 - i. off site for hydrovac operations
 - ii. on the areas outside the active areas for dust control; or
 - iii. as otherwise authorized in writing by the Director.
 - (b) disposed of at:
 - i. an Alberta Environment and Parks authorized waste management facility authorized to accept such waste
 - ii. an Alberta Energy Regulated facility authorized waste management facility authorized to accept such waste
 - iii. a waste management facility approved by a local environmental authority outside of Alberta authorized to accept such waste; or,
 - iv. as otherwise authorized in writing by the Director.

REPORTING AND RECORD KEEPING

13 (1) Operating Record

- (1) The person responsible for a hydrovac facility shall establish and maintain an Operating Record for the facility until the end of the final closure period.

- (2) The Operating Record for shall contain, at a minimum, the following information:
- (a) a copy of the registration document;
 - (b) a current organizational chart of the operating company;
 - (c) operational procedures;
 - (d) the most recent version of the design plan for the facility;
 - (e) public issues and complaints;
 - (f) monitoring reports;
 - (g) inspection reports;
 - (h) maintenance records;
 - (i) records of contraventions;
 - (j) hydrovac wastewater quality;
 - (k) volume associated with the uses and disposal methods in Section 12(4)
 - (l) hydrovac solids quality;
 - (m) tonnage associated with the uses and disposal methods in Section 12(5)
 - (n) all tonnage (or volume) reports for hydrovac waste, hydrovac solids in and out of the site; and
 - (o) all annual reports for the facility.

(2) Monitoring Records

- (1) The person responsible for a hydrovac facility shall
- (a) record and
 - (b) retain all the following information in respect of any sampling conducted or analyses performed in accordance with this Code of Practice for a minimum of 10 years unless otherwise authorized in writing by the Director:
 - i. the place, date and time of sampling;
 - ii. the dates the analyses were performed;
 - iii. the analytical techniques, methods or procedures used in the analyses;
 - iv. the names of the persons who collected and analyzed each sample; and
 - v. the results of the analyses.

(3) Reporting of Contraventions

- (1) The person responsible for a hydrovac facility shall immediately report to the Director by telephone any contravention of the terms and conditions of this Code of Practice at 1-780-422-4505.
- (2) The person responsible for a hydrovac facility shall submit a written report to the Director within seven days of the reporting pursuant to 13(3)(1).
- (a) The report required in 13(3)(2) shall contain, at a minimum, all of the following:
 - i. a description of the contravention;

- ii. the date of the contravention;
- iii. an explanation as to why the contravention occurred;
- iv. a legal land description of the location of the contravention;
- v. the name of the registered owner or owners of the parcel of land on which the contravention occurred;
- vi. a summary of all measures and actions that were taken to mitigate any effects of the contravention;
- vii. the Registration number provided by the Director for the hydrovac facility, and the name of the person who held the Registration number at the time when the contravention occurred;
- viii. the names, addresses, telephone numbers and job titles of all persons operating the site at the time that the contravention occurred;
- ix. the names, addresses and telephone numbers of all persons who had charge, management or control of the site at the time that the contravention occurred;
- x. a summary of proposed measures that will prevent future contraventions including a schedule of implementation for those measures;
- xi. any information that was maintained or recorded under this Code of Practice, as a result of the contravention; and
- xii. any other information required by the Director in writing.

(4) Annual Report

(1) Annual Report for Hydrovac Facilities

- (a) During each year of operation of the hydrovac storage facility or the hydrovac treatment facility, the person responsible shall prepare an Annual Report for the facility covering the calendar year reported on.
- (b) The Annual Report shall be placed in the Operating Record by March 31 of the year following the year on which the report is based.
- (c) The Annual Report shall contain, at a minimum, the following information:
 - i. a summary of changes the person responsible during the year;
 - ii. a summary of operator training logs;
 - iii. a summary of any changes made to the operations plan, facility design plan, and soil conservation plan;
 - iv. a summary of any changes to groundwater monitoring program;
 - v. the types and quantities of hydrovac waste received;
 - vi. copies of analytical reports of hydrovac wastewater and hydrovac solids samples collected and analyzed pursuant to Section 12(4)(4) and Section 12(4)(5);
 - vii. the following environmental monitoring records and their interpretations:
 - a. a table or graphical presentation of yearly groundwater monitoring records;
 - b. quality and quantity of run-off water removed from the hydrovac facility used or disposed;

- c. quality and quantity of hydrovac wastewater removed from the hydrovac facility and used or disposed; and,
 - d. quality and quantity of hydrovac solids removed from the hydrovac facility and uses or disposed;
- viii. any remedial actions taken;
- ix. a summary of non-compliance issues;
- x. a summary of complaints received, and the action or actions taken as a result of the complaints; and
- xi. a summary of adjustments made during the year to financial security.

(5) Record Keeping

- (1) The person responsible for a hydrovac facility shall immediately provide any records, reports, documents or data required to be created under this Code of Practice to the Director, or a representative of the Director, upon request.
- (2) The person responsible for a hydrovac facility shall record and retain all the following information regarding each contravention of this Code of Practice or complaints from the facility for a minimum of 10 years:
 - (a) the place, date and time of the contravention/complaint;
 - (b) the name, and address of the contravention/complainant;
 - (c) the nature of the contravention/complaint; and
 - (d) a description of the contingency plan implemented.

(6) Financial Security

- (1) The registration holder shall immediately notify the Director in writing if any of the following events occurs:
 - (a) the registration holder is served with a petition into bankruptcy;
 - (b) the registration holder files an assignment in bankruptcy or Notice of Intent to make a proposal;
 - (c) a receiver or receiver-manager is appointed;
 - (d) an application for protection from creditors is filed for the benefit of the registration holder under any creditor protection legislation; or
 - (e) any of the assets which are the subject matter of this registration are seized for any reason.
- (2) The person responsible for a hydrovac treatment facility shall calculate the estimated costs of conservation and reclamation of the facility, which shall include a breakdown of the total costs.
- (3) The financial security costs shall be reviewed and updated annually.

FINAL CLOSURE

14 (1) Final Closure Plan

- (1) The person responsible for an on-site hydrovac treatment facility or a mobile treatment unit shall notify the Director in writing when the site or unit is no longer operational within one year of the final closure.
- (2) The person responsible for a hydrovac storage facility or the hydrovac treatment facility shall notify the Director in writing of the closure of the facility by submitting a Final Closure Plan within 6 calendar months after the final acceptance of waste at the facility.
- (3) The Final Closure Plan shall include, at a minimum, the following:
 - (a) schedule for completion;
 - (b) description of the final use of the closed areas;
 - (c) description of site restoration procedures, including:
 - i. drainage;
 - ii. soil replacement;
 - iii. erosion control; and
 - iv. revegetation, where applicable;
 - (d) hydrovac solids removed;
 - (e) waste disposal; and
 - (f) maintenance and operations of groundwater monitoring system, if required.
- (4) The Final Closure Plan shall be implemented in accordance with written authorization of Director.

(2) Final Closure Report

- (1) The person responsible for a hydrovac storage facility and a hydrovac treatment facility shall file a copy of the Final Closure Report in the Operating Record for the calendar year in which Final Closure will be complete.
- (2) The Final Closure Report shall include, at a minimum, the following:
 - (a) the date of completion of the final closure;
 - (b) a description of how the following elements (if applicable) have been, or will be dealt with:
 - i. the final use of the closed areas;
 - ii. drainage restoration;
 - iii. soil replacement;
 - iv. erosion control; and
 - v. re-vegetation.
 - (c) a statement including supporting evidence that the final closure has been completed in accordance with the final closure plan;

- (d) a description of any deviations to the final closure plan and the reasons for the deviations; and
- (e) a groundwater report, as required.

TRANSITION FOR EXISTING FACILITIES

15 Compliance Schedule for Existing Hydrovac Facilities

- (1) An existing facility that currently holds an EPEA approval may register under this code, however until the EPEA approval is cancelled the terms and conditions of the EPEA approval continue to apply.
- (2) Facilities that hold a waste management approval such as a landfill or composting activity may apply for a registration under this code only if the footprint of each activity are distinct and separate from each other.
- (3) Notification sites, that currently hold a notification are not required to resubmit, however if there are any changes to the facility, the facility will be required to submit the information as required in Section 4 of this Code of Practice.

CODE REVIEW

16 (1) This Code of Practice will be reviewed every 5 years beginning in 2025. Alberta Environment and Parks will accept and compile written comments on the contents of this Code of Practice at any time, and will review all comments received at the next review.

APPENDIX A **DRAFT** Registration Application for a Hydrovac Treatment Facility

1. General Information

Applicant Name: _____

Mailing Address: _____

Legal Land Description for hydrovac facility: _____

Contact Person: _____

Phone Number: _____ E-mail address: _____

2. Facility Type

What is the type of waste accepted at this facility? What is the treatment process (or amendment) used to treat the waste. What is the consideration for hydrovac wastewater and/or hydrovac solids uses?

3. Technical Information

Please provide the following information as specified in this Code of Practice:

- (a) a facility design plan and specifications;
- (b) an operations plan;
- (c) a groundwater monitoring program; and
- (d) a financial security calculation

4. Deviations from Code

Are you requesting deviations from the Code of Practice for Hydrovac Facilities for design and construction or environmental monitoring?

Yes No

If yes, please fill in section below:

Requested deviation	Yes	No
Facility construction and design specifications	<input type="checkbox"/>	<input type="checkbox"/>
Facility Liner	<input type="checkbox"/>	<input type="checkbox"/>
Retention Pond Liner	<input type="checkbox"/>	<input type="checkbox"/>
Facility design plan and specifications	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Sampling and analytical methods	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Groundwater monitoring	<input type="checkbox"/>	<input type="checkbox"/>

Note: Director written authorization is required prior to deviating from the Code of Practice for Hydrovac Facilities.

5. Other Information

Please contact your regional Alberta Environment and Parks office to determine what additional information needs to be added to your application.

Please provide:

(a) Where appropriate, a copy of the field approval issued under section of the Public Lands Act.

(b) The rationale for the hydrovac facility, in writing.

I acknowledge that I have reviewed a copy of the Code of Practice for Hydrovac Facilities, and that I am bound by the provisions of this Code of Practice and any subsequent amendments to it.

Applicant Signature: _____ Date: _____

This box is for AEP office use only

Date received: _____

Registered by: _____

Director's Signature: _____

Date: _____

APPENDIX B DRAFT Registration Application for an On-site Treatment Facility, a Mobile Hydrovac Treatment Unit. DRAFT Notification Form for a Hydrovac Storage Facility

1. General Information

Applicant Name: _____

Mailing Address: _____

Legal Land Description for hydrovac facility: _____

Contact Person: _____

Phone Number: _____ E-mail address: _____

2. Facility Type

What is the type of waste accepted at this facility? What is the treatment process (or amendments) used to treat the waste.

3. Technical Information

Please provide the following information as specified in this Code of Practice (See section 4, 5 & 6):

- (a) a facility design plan and specifications;
- (b) an operations plan; and
- (c) a groundwater monitoring program (as required).

4. Deviations from Code

Are you requesting deviations from the Code of Practice for Hydrovac Facilities? *Note: Director written authorization is required prior to deviating from the Code of Practice for Hydrovac Facilities.*

5. Other Information

Please contact your regional Alberta Environment and Parks office to determine what additional information needs to be added to your application.

I acknowledge that I have reviewed a copy of the Code of Practice for Hydrovac Facilities, and that I am bound by the provisions of this Code of Practice and any subsequent amendments to it.

Applicant Signature: _____ Date: _____

This box is for AEP office use only

Date received: _____

Registered by: _____

Director's Signature: _____

Date: _____

