

site in Grays Harbor County, Washington has given rise to a release of substances, causing ground water contamination and surface water contamination, and that these releases will continue to cause contamination unless the release is abated. Ecology has also determined (1) the City of Hoquiam is a person responsible for the Hoquiam Landfill within the meaning of Chapter 90.48 RCW, with respect to the Hoquiam Landfill site; (2) that the Hoquiam Landfill site is a facility within the meaning of Chapter 70.105 RCW, Chapter 70.105A RCW, 42 U.S.C. 6901 et seq., (3) that the Hoquiam Landfill site is a disposal site within the meaning of Chapter 70.95 RCW; (4) the actions to be taken pursuant to this Order are reasonable and necessary to protect the public health or welfare or the environment; (5) a reasonable time for beginning and completing the actions required by this Order has been provided for; and (6) The City of Hoquiam has agreed to undertake the actions specified in the Order.

II.

PARTIES

This Consent Order shall apply to and be binding upon the following parties, their successors, and assigns:

1. The City of Hoquiam
2. State of Washington, Department of Ecology

In signing this Order, the City of Hoquiam hereby agrees to undertake all actions required of them by the terms and conditions of this Order within the time frames specified herein. While the City disagrees with many of the facts and assertions contained in the Order, especially paragraphs I and IV, it has agreed to comply with the terms of the Order to avoid litigation and resolve the disagreement over the Hoquiam Landfill.

III.

DEFINITIONS

"Hoquiam Landfill Site" -- (1) The real property, consisting of approximately 23 acres within Grays Harbor County, Washington, the site description which is included in the Statement of Facts, IV; (2) any monitoring and extraction equipment installed in connection with the remedial investigation of the Hoquiam Landfill at the Hoquiam Landfill and at any adjacent or nearby location; (3) any areas potentially contaminated or contaminated by substances disposed of in the property defined in (1); and (4) any substances which may have migrated from the real property.

"Ecology Director" -- the Director of the Department of Ecology, State of Washington, or her designee or successor.

"Respondents" -- City of Hoquiam or it's authorized representative.

IV.

STATEMENT OF FACTS

The Hoquiam Landfill is owned and operated by the City of Hoquiam. Hoquiam

municipal waste has been disposed at this location for a minimum of forty years. Prior to 1977, the Hoquiam Landfill was a burning dump.

The Hoquiam Landfill property boundaries encompass a total of 46.2 acres. The current active landfilling area, permitted by the Grays Harbor Health Department consists of 23.4 acres of the total. The Hoquiam Landfill (also known as "the site") is located approximately 1 mile Northwest of Hoquiam in portions of the South One Half of the Southwest One Quarter of Section 35, Township 18 North, Range 10 West; and the Northeast One Quarter of the Northeast One Quarter of Section 3, Township 17 North, Range 10 West in Grays Harbor County.

In 1986, with the aid of State of Washington Referendum 39 grant monies, Grays Harbor County contracted HDR Techserv, Inc. to evaluate the Hoquiam Landfill. As part of this evaluation, Shannon and Wilson, Inc. completed a geohydrological study of the Hoquiam Landfill titled Hoquiam Landfill Study, Appendix Two, dated September 2, 1986. This study identified a tertiary bedrock aquifer, and an unconfined water table aquifer in the overlying landfill material. The direction of ground water movement in the water table aquifer and the bedrock aquifer was defined as flowing east, discharging to the Hoquiam River.

The Shannon and Wilson, Inc. study identifies landfill leachate impacts to both aquifers, and surface waters at the landfill. Washington State primary drinking water standards for lead, cadmium and chromium have been violated in the surface and ground water at the Hoquiam Landfill. The

secondary drinking water standards for iron and manganese have also been exceeded in surface and ground water at the site.

V.

SCOPE OF ORDER

IT IS ORDERED THAT the City of Hoquiam shall, upon receipt and execution of this Order, take appropriate action in accordance with the following outlines.

A. Objectives

The objectives of this Order are to:

1. assess the extent of ground water contamination, the rate of contaminant movement, and the concentrations of contaminants in the ground water due to the landfill through literature review and field work;
2. assess the extent of surface water contamination and the concentrations of contaminants due to landfill activity.
3. quantitatively assess the impacts of surface and ground water contamination on the Hoquiam River;
4. assess the present and future impacts (hydraulic and organic loadings and treatability) of collection and treatment of

contaminated waters on the City of Hoquiam's Sewage Treatment Plant.

5. assess the present and future risks of landfill activities to human health and the environment; and
6. propose remedial measures to eliminate or reduce, to the extent possible, the ground and surface water contamination at the site and assess the costs of each alternative. Additionally, the City shall implement interim remedial measures.

To implement these objectives, tasks VI through VIII below shall be completed.

B. Delegation of Contract

Within 30 business days of execution and receipt of this Order, the respondents shall contract with a qualified hydrogeological and engineering consultant to perform the investigation set forth below. The consultant shall be familiar with federal and state water quality, solid waste and hazardous waste laws and regulation and shall be acceptable to Ecology. The City of Hoquiam shall provide written documentation to Ecology of the consultants' capability to conduct the investigation specified herein.

C. Interim Remedial Measures

Within sixty (60) days of execution and receipt of this Order, submit

a proposal to include alternatives to remediate contamination emanating from the base of the landfill. Within ten (10) working days of the receipt of the proposal, Ecology shall approve one alternative for interim remediation based on effectiveness, feasibility, and cost.

Within sixty (60) days of Ecology's approval, the respondents shall submit to Ecology for approval a detailed final engineering report with plans and specifications in accordance with WAC 173-240 for the implementation of the interim remedial action. Construction of the approved alternative shall be completed and the interim remedial measures fully implemented as soon as possible, given weather conditions, after Ecology's approval of the final engineering report and plans and specifications, but in no case later than June 30, 1988.

VI.

Remedial Investigation

Some of the described tasks have been completed and do not have to be repeated. The tasks that have been completed previously shall be identified by the City in the Remedial Investigation Scope of Work.

The findings resulting from the completion of all tasks, however, shall be set forth in the Remedial Investigation Report. Within 45 days of execution and receipt of this Order, the City shall submit to Ecology for approval a Remedial Investigation scope of work which addresses, at a minimum:

A. Existing Data Review

1. review waste disposal records documenting type, date, and location of waste disposal
2. interview past and present employees on waste disposal methods, waste types, and quantities
3. present a review of and critique the quality of existing ground water monitoring data. Potential sources of information include the following reports: (A comprehensive data and literature survey is required.)

Hoquiam Landfill Study, HDR Techserv, Inc., May 1986

Hoquiam Landfill Study, HDR Techserv, Inc., September 1986

Hydrogeologic Investigation at the Hoquiam Landfill, Shannon and Wilson, Inc., May 1987.

Grays Harbor Health District file data

B. Geologic and Hydrologic Factors

1. General geology, identification of unconfined and confined aquifers, including presence or absence of aquitards
 - a. surface topographic maps
 - b. geologic cross-sections and, as necessary, fence diagrams

- c. site map with well locations and assigned numbers
 2. Hydrology
 - a. accurate piezometric surface maps
 - b. field hydraulic conductivity measurements
 - c. laboratory hydraulic conductivity measurements
 - d. quantification, characterization, and identification of surface water discharge points on the site and to the river
 3. Definition of extent of contamination
 - a. vertical and horizontal extent of leachate plume(s)
 - b. rate and direction of contaminant movement
 - c. isopleth maps
 - d. quantification, characterization, and identification of leachate impacts (to ground and surface water) to the Hoquiam River.
- C. Ground Water and Surface Water Analysis
1. Monitoring wells
 - a. location and rationale for new monitoring wells

- i. siting constraints
- ii. number of wells

- iii. aquifer cross contamination avoidance
- iv. analytical requirements
- b. well construction and development (according to WAC 173-160)
 - i. drilling methodology
 - ii. number of dual completions/well depths
 - iii. length and area of screening and size of screen openings
 - iv. screen and casing materials
 - v. well development
- c. Location and proper abandonment of any old improperly constructed wells.
- d. data collection
 - i. field hydraulic conductivity testing and laboratory hydraulic conductivity testing
 - ii. establishment of vertical control points for water level elevations
 - iii. geophysical logging
 - iv. water and soil sampling and storage for future analysis
 - v. production well installation and pump testing to determine hydraulic interconnections between the aquifers

vi. measured monthly and annually surface water flows

2. Surface Water Monitoring

- a. location and rationale for sampling sites
- b. number of sites
- c. measured impacts to Hoquiam River
- d. sampling methodology

3. Data needs

- a. identification of wells and surface waters to be sampled (including Hoquiam River)
- b. groundwater, surface water and leachate parameter analyses
 - i. organic priority pollutants
 - ii. metals
 - iii. conventional parameters
 - iv. piezometric surface
- c. frequency of sampling

4. Sampling procedures

- a. Quality Assurance/Quality control (QA/QC)
- b. sampling materials/instruments
- c. evacuation of borehole volumes

- d. equipment decontamination procedures
 - e. chain of custody
 - 5. Laboratory
 - a. analytical methodology
 - b. detection limits
 - c. QA/QC
 - d. completion times
 - e. chain of custody
 - 6. Health and Safety Plan
- D. Leachate Treatability Study
 - 1. Characterization of leachate discharged to Hoquiam Wastewater Treatment Plant
 - a. organic priority pollutants
 - b. metals
 - c. conventional parameters
 - 2. Actual treatment efficiency achieved, at treatment plant
 - 3. Hydraulic and contaminant loading rates
 - 4. Potential impacts to human health and the environment (as indicated by data from leachate sent to treatment plant)

E. Remedial Investigation Report

Within the schedule identified in Section VI F prepare a Remedial Investigation report for approval by Ecology. The report shall provide, in detail, required literature reviews, results of the sampling, an interpretation of the results with conclusions as to the level of risk the contamination poses to human health and the environment.

The risk assessment portion of the report shall contain an assessment of cancer risks to the public from inhalation, dermal contact, and oral routes and acute and chronic toxicity via the same routes. The risk assessment shall be completed in accordance with state and federal published risk analyses and health standards (e.g., Superfund Public Health Evaluation Manual, either Draft or Final version).

F. Schedule

1. Ecology shall review the proposed Remedial Investigation scope of work identified in VI A - E above within fifteen (15) working days of submittal. If the City of Hoquiam wishes to discuss development of the scope of work, Ecology will, if requested, meet with the City and its consultants to discuss the proposal for the scope of work prior to submittal of the final scope of work.

2. The respondents shall propose schedules for the execution of the Remedial Investigation outlined in Section VI A - E of this Order within Scope of Work. The Remedial Investigation shall commence no later than two months after Ecology's approval of the remedial investigation Scope of Work.
3. Propose a schedule for completion of the Remedial Investigation Report (VI A- E above) to be completed no later than 285 days from the execution and receipt of this Order.

VII.

FEASIBILITY STUDY

Within 45 days of execution and receipt of this Order, submit to Ecology, for approval, a Feasibility Study scope of work which addresses at a minimum:

- A. Alternatives for remedial action. The alternatives shall be selected based upon technological feasibility and reliability, effectiveness of minimization and mitigation of damage to, and protection of public health, welfare, and the environment.
 1. propose a range of alternatives consistent with WAC 173-304-460(3)(e) to be considered
 2. estimate costs of each alternative
 - a. total cost

b. cost per ton of refuse

3. provide for each alternative the reduction of flow of contaminated ground and surface water to the Hoquiam River from the site (The HELP model or approved equivalent maybe used to achieve this objective.)

4. provide engineering requirements for each alternative

B. Feasibility Study Report

Prepare a Feasibility Study report for approval by Ecology. The report shall provide, in detail, a discussion of the requirements of Section VII A. Additionally the report shall recommend to Ecology one of the alternatives identified in the feasibility study as appropriate for remedial action considering the cost-effectiveness of the remedy (i.e., the lowest cost alternative that is technologically feasible and reliable and which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare, and the environment).

C. Schedule

1. Ecology shall review the proposed Feasibility Study scope of work identified in VII A within fifteen (15) working days of

submittal. If the City wishes to discuss the development of the scope of work, Ecology will, if requested, meet with the City and its consultants to discuss the proposal for the scope of work prior to submittal of the final scope of work.

2. Propose schedules for the execution of activities outlined in Section VII A & B of this Order to be completed no later than 345 days from the execution and receipt of this Order.

VIII.

REPORT DEBRIEFING

After the completion of items VI - VII above, Ecology and the City of Hoquiam shall meet to discuss remedial actions necessary at the site. However, should the parties not agree as to the extent of necessary remedial action, Ecology reserves all rights to take any action necessary to ensure an appropriate and timely remedy is implemented at the site.

IX.

GENERAL TERMS OF CONSENT ORDER

- A. The City of Hoquiam and/or its consultants and Ecology shall meet as either party deems necessary to discuss the implementation of this Order.

- B. Ecology shall provide access to information disclosable under the laws of the State of Washington which is pertinent to the remedial investigation, subject to public disclosure, and in the custody and control of Ecology.
- C. Ecology shall provide review comments, and approval or disapproval letters within twenty (20) business days of the receipt of the document(s) submitted for review and approval.
- D. Extensions shall be granted only when requests for extensions are submitted fifteen (15) business days prior to the compliance date and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed. Extensions shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology in writing.

Ecology will respond to requests for extension within ten (10) business days. If no response has been received by the pertinent compliance date, the requested extension will be deemed granted until written notice of denial is received by the City of Hoquiam.

The burden shall be on The City of Hoquiam to demonstrate to the satisfaction of Ecology that the request for the extension has been submitted in a timely fashion and good cause exists for granting the

extension. Good cause may include, but not be limited to, the following:

1. Circumstances beyond the reasonable control and despite the due diligence of the City of Hoquiam including delays caused by Ecology;
2. Inability to obtain access to offsite properties for monitoring well installation, despite the due diligence of the City of Hoquiam; and
3. Act of God, fire, flood, blizzard, extreme temperatures, or other unavoidable casualty.

However, neither increased costs of performance of the terms of this Order or changed economic circumstances may be considered circumstances beyond the reasonable control the The City of Hoquiam.

Ecology may extend the time schedules contained in this Order for a period not to exceed ninety (90) days. Disapproval by Ecology of the Scope of Work, Remedial Investigation, or Feasibility Study, shall not be a basis for an extension of time nor be considered an untimely response by Ecology.

E. The terms of the Order may be formally amended only by written mutual agreement of the parties.

F. Nothing in this Order shall be construed as prohibiting or in any way limiting the ability of Ecology to seek civil penalties available under chapter 90.48 RCW, 70.105 RCW, 70.94 RCW, 42 U.S.C. 9601 et seq., or 42 U.S.C. 6901 et seq., for any noncompliance with this Order.

G. DISPUTE RESOLUTION

If the City of Hoquiam objects to any Ecology notice of disapproval, proposed modification, or decision made pursuant to this Consent Order, it shall notify Ecology in writing of its objections within fourteen (14) days from receipt of such notice. Thereafter, the parties shall confer in an effort to resolve the dispute. If agreement cannot be reached on the dispute within fourteen (14) days after receipt by Ecology of such objections, Ecology shall promptly provide a written statement of its decision to the City of Hoquiam.

The decision of Ecology pursuant to this dispute resolution procedure shall be appealable pursuant to chapter 43.21B RCW.

- H. Nothing in this part shall be construed as prohibiting or in any way limiting the ability of Ecology under Chapter 90.48 RCW to require the implementation of interim mitigating measures prior to completion of the work anticipated by this Order or to take any action pursuant to existing laws at this site that is beyond the scope of this Order.
- I. Notwithstanding compliance with the terms of this Order, the Respondents are not released from liability, if any, for abatement of any imminent and substantial endangerment to the public health, welfare, or the environment posed by this facility.
- J. No conveyance of title, easement or other interest in any portion of the site owned by The City of Hoquiam shall be made without provision for continued operation and maintenance of any containment system, treatment system, and monitoring system installed or implementation of that pursuant to this Order. Until the remedial program described in this Order is completed, The City of Hoquiam shall notify Ecology by registered mail, at least ninety (90) days prior to any conveyance of any interest in property that in whole or part is located within the site.
- K. At all reasonable times provide Ecology personnel and contractors the right of entry to the property for inspection, sampling, and activities associated with the fulfillment of the Order issued herein.

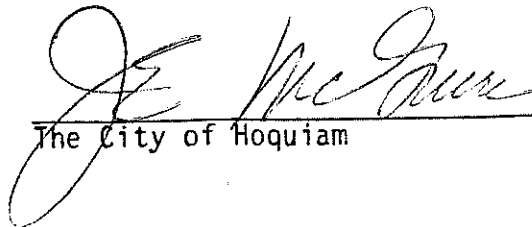
L. In connection with this matter, the Respondents consent to comply in full with the Order issued herein pursuant to Chapter 90.48.120(2) RCW.

M. The provisions of this Order imposing duties upon the Respondents shall apply to and be binding upon Respondents.

N. By the following signatures, the Respondents hereby consent to the entry of the Order on the terms and conditions herein stated:

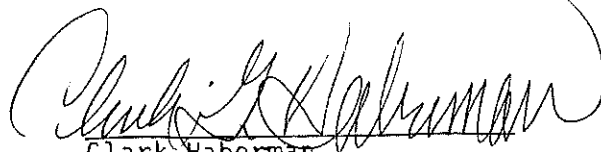
Dated 13th day of October, 1987.

RES: 87-19
10/13/87



The City of Hoquiam Mayor

Dated 16th day of October, 1987.
at Olympia, Washington.

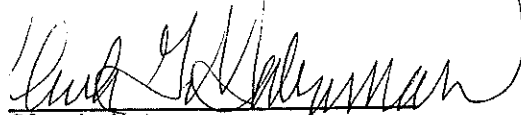


Clark Haberman
Regional Manager
Department of Ecology
State of Washington

X.
ENTRY OF FINAL CONSENT ORDER

It is so Ordered, as set forth above. This Order including each and every portion thereof, shall become effective immediately.

Dated this 16th day of October, 1987



Clark Haberman
Regional Manager
Department of Ecology
Southwest Regional Office