B. S. B. DIVERSIFIED COMPANY, INC.
&
HEXCEL CORPORATION

MTCA AGREED ORDER No. DE 2553

ATTACHMENTS:

1. AGREED ORDER No. DE 2553 - all Attachments are missing
2. BSB Hexcel AO Exhibit A.pdf
3. Exhibit B1 (Downgradient SOW addendum).pdf
4. BSB Hexcel AO Exhibit B2 (Downgradient SOW).pdf
5. 20050607-Revised_BSBHexcel_AO_Exhibit_C_Schedule.pdf

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:	AGREED ORDER
B. S. B. DIVERSIFIED COMPANY, INC. and HEXCEL CORPORATION	No. DE 2553

TO: B. S. B. Diversified Company, Inc. and Hexcel Corporation

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology), B. S. B. Diversified Company, Inc. (BSB), and Hexcel Corporation (Hexcel) under this Agreed Order (Order) is to provide for Remedial Action at a facility where there has been a release or threatened release of Hazardous Substances. This Order requires BSB and Hexcel to undertake the following Remedial Actions:

(1) Investigate contamination found east of 84th Avenue South as described in Section VII of this Order and set forth in Exhibit B to this Order.

Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

This Order is issued pursuant to the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW, as amended, and its implementing regulations, Chapter 173-340 WAC.

III. PARTIES BOUND

This Order shall apply to and be binding upon the Parties to this Order and their successors and assigns. The undersigned representative of each Party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such Party to comply with the Order. BSB and Hexcel agree to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter BSB's or Hexcel's responsibility under this Order. BSB and/or Hexcel shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall require that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in Chapter 70.105D RCW and Chapter 173-340 WAC shall control the meanings of the terms used in this Order.

1. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order. The terms "Agreed Order" or "Order" shall include all exhibits to this Order.

2. BSB: Refers to B. S. B. Diversified Company, Inc., a Delaware corporation.

3. BSB Agreed Order: Refers to Agreed Order No. DE 2551 between Ecology and BSB and issued by Ecology contemporaneously with this Order.

4. Carr: Refers to Carr Prop II, LLC, a Washington Limited Liability Company.

5. Ecology: Refers to the State of Washington, Department of Ecology and the Director, employees and designated agents and representatives thereof.

6. EPA: Refers to the United States Environmental Protection Agency and the Administrator, employees and designated agents and representatives thereof.

7. Facility: Refers to the Hexcel Parcels, Parcel F and Parcel G where Hazardous Substances have been deposited, stored, disposed of, placed, or otherwise come to be located and to wherever Hazardous Substances from releases on the Hexcel Parcels, Parcel F and Parcel G have come to be located.

8. Hazardous Substance: Refers to "hazardous substance" as defined in RCW 70.l05D.020(7).

9. Hexcel: Refers to Hexcel Corporation, a Delaware Corporation.

10. Hexcel Enforcement Order: Refers to Enforcement Order No. DE 2552 issued to Hexcel by Ecology contemporaneously with this Order.

11. Hexcel Parcels: Refers to the parcels A, B, C, D, and E currently owned and controlled by Hexcel Corporation, located at 19819 84th Avenue South in Kent, Washington. These parcels are more particularly described in Exhibit A to this Order, which is a detailed parcel diagram.

12. Hytek: Refers to Hytek Finishes Company.

13. MTCA: Refers to the Washington State Model Toxics Control Act, Chapter 70.105D RCW.

14. Order: See "Agreed Order" above.

15. Parcel F: Refers to the parcel F property currently owned and controlled by Carr, located at 8311 South 200th Street in Kent, Washington. This parcel is more particularly described in Exhibit A to this Order, which is a detailed parcel diagram.

16. Parcel G: Refers to the parcel G property currently owned and controlled by BSB, located at 8202 S. 200th Street, Kent, Washington. This parcel is more particularly described in Exhibit A to this Order, which is a detailed parcel diagram.

17. Parties: Refers to Ecology, BSB, and Hexcel.

18. Permit: Refers to the Post Closure Permit WAD 07-665-5182 effective December 22, 1988, that Ecology and EPA jointly issued to Hytek under authority of the Washington Hazardous Waste Management Act, Chapter 70.105 RCW, and RCRA.

19. RCRA: Refers to the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*

20. RCW: Refers to the Revised Code of Washington.

21. Remedial Action: Refers to "remedial action" as defined in RCW 70.105D.020(21).

22. WAC: Refers to the Washington Administrative Code.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by BSB and/or Hexcel.

1. BSB currently owns Parcel G. Parcel G is bounded on the north by South 200th Street and on the east by Parcel F, a contiguous but separately owned parcel. The parcel locations are indicated on Exhibit A.

2. Parcels A, B, C, D and E, the Hexcel Parcels, are currently owned by Hexcel. Parcel F is currently owned by Carr. Parcels A-E are contiguous parcels located immediately north of, and across South 200th Street from, Parcels G and F. Parcels A-E are bounded on the south by South 200th Street, on the east by 84th Avenue South (East Valley Road), on the north by South 196th Street and on the west by 81st Avenue South.

3. Before 1988, BSB owned Parcels A through G and the two divisions, Hytek and Heath Tecna Aerospace Company, that were located on those parcels.

4. On January 25, 1988, BSB sold Heath Tecna Aerospace Company and Parcels A through F to the Phoenix Washington Corporation, a wholly owned subsidiary of Ciba-Geigy

Corporation. BSB transferred Parcels A through D and Parcel F to Phoenix Washington Corporation upon closing. The Phoenix Washington Corporation was subsequently renamed the Heath Tecna Aerospace Company (Heath Tecna). In 1989, BSB moved its Hytek operation from Parcel E to another location in Kent, Washington. Later, in July 1989, BSB transferred Parcel E to Heath Tecna.

5. Heath Tecna merged into the Ciba-Geigy Corporation. By mid 1996, Hexcel had acquired Parcels A through F from the Ciba-Geigy Corporation and acquired all assets and assumed all liabilities of the Ciba-Geigy Corporation relating to Parcels A through F.

6. In 2003, Hexcel sold Parcel F to Carr.

7. Of the original seven parcels owned by BSB, one parcel, Parcel G, is still owned by BSB, five parcels, Parcels A-E, are currently owned by Hexcel (collectively, the Hexcel Parcels), and one parcel, Parcel F, is currently owned by Carr.

8. Before 1988, Parcels A-G housed BSB's Hytek division and BSB's Heath Tecna Aerospace Company division. BSB's Hytek division provided metal finishing and electroplating services. BSB's Heath Tecna Aerospace Company division manufactured interior aircraft components. Parcels B, C, D and E housed manufacturing buildings where Hazardous Substances were used. Although not proven, historic waste disposal may have occurred on these parcels, potentially including pre-sanitary sewer connection waste disposal and waste disposal in areas outside of the current manufacturing building footprint. *See* Permit Attachments II-A (identifying six solid waste management units (SWMUs) on Parcels D and F). Pipes running under South 200th Street connected the manufacturing building located on Parcel E, and carried Hazardous Substances, to Parcel G. Hexcel continues to pursue aircraft parts manufacturing in the manufacturing buildings on Parcels B, C, D and E.

9. Parcel G housed impoundments, lagoons, container storage, and similar units for managing waste, including hazardous waste, through storage and disposal. The wastes contained in some of these units included chlorinated compounds. BSB closed the storage and disposal units before 1988. Concentrations of chlorinated compounds remain in the subsurface soils and groundwater under the Facility.

10. Groundwater flow in the area generally runs in a north-northeasterly direction from Parcel G (upgradient), under Parcels A-F (downgradient), and across 84th Avenue South (downgradient). Groundwater beneath Parcels A-G is contaminated with chlorinated compounds, including (in various locations) TCE, Vinyl Chloride, and cis-1,2-DCE. Contaminants have been detected in groundwater east of 84th Avenue South.

11. Parcels A through G were operated as a dangerous waste management facility on or after November 19, 1980 (the date facilities became subject to permitting requirements under RCRA, including authorized state regulations promulgated in Chapter 173-303 WAC).

12. Effective December 22, 1988, Ecology and EPA jointly issued Post Closure Permit WAD 07-665-5182 (Permit) to Hytek (later BSB) under authority of the Washington Hazardous Waste Management Act, Chapter 70.105 RCW, and RCRA. The Permit identified the permitted facility as Parcels G and E, with recognition that Parcel E was subject to a pending transfer to Heath Tecna (later Hexcel). *See* Permit Attachment IV-B at 21. The Permit did not name Heath Tecna and did not define the permitted facility to include Parcels A, B, C, D and F based upon the agencies' acceptance of a private agreement between BSB and Heath Tecna (later Hexcel). *See* Ecology/EPA Response to Comments (November 8, 1988) at 4-5. Under this private agreement, BSB agreed to be named as the sole permittee and Heath Tecna (later Hexcel) agreed to reimburse BSB for certain costs of conducting remedial action on the Hexcel Parcels and to allow BSB access to Parcels A, B, C, D, F (and upon transfer, Parcel E) for conducting remedial action.

13. The Permit assigned groundwater corrective action and monitoring requirements to Parcels A-G, designated a point of compliance at the downgradient property boundary of Parcel G, and required the achievement of concentration limits in groundwater along 84th Avenue South. Permit Attachment VI-B, page 21.

14. In setting forth the above-described conditions, the Permit did not identify or distinguish between the possible sources of groundwater contamination on Parcel G and the possible sources on the Hexcel Parcels that were or may have been responsible for releases, whether historic or current. *See* Ecology/EPA Response to Comments (November 8, 1988) at 6-7.

15. Pursuant to the Permit and the private agreement, BSB installed a groundwater pump-and-treat system designed to (1) capture contaminated groundwater to prevent it from migrating across South 200th Street from Parcel G, (2) capture contaminated groundwater to prevent it from migrating across 84th Avenue from the Hexcel Parcels, and (3) monitor groundwater conditions at various points. Recovery wells included in this system are located on Parcel G and on the Hexcel Parcels. Monitoring wells included in this system are located on Parcel G, the Hexcel Parcels, and Parcel F. On-site treatment under this system terminated in 1995. The system currently pumps groundwater for discharge to and treatment at a King County publicly owned treatment works.

16. The Permit was issued for an initial ten-year term commencing December 22, 1988. On March 3, 1999, Ecology and EPA issued a letter, still in effect, in which the agencies declared, pursuant to Part I.E.3.b of the Permit: "The B.S.B. Diversified Post Closure Permit issued jointly by the Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) shall continue in force beyond the expiration date until which time the Post Closure Permit is re-issued."

17. Hexcel and BSB take differing positions regarding whether the private agreement reached in 1988 continues in force. Since November 1999, Ecology and EPA have encouraged Hexcel and BSB to reach private accord on conducting further remedial action and maintaining the system that spans Hexcel's and BSB's properties. To date, Hexcel's and BSB's efforts to reach such an accord have been unsuccessful.

18. Contemporaneously with this Order, Ecology and BSB have agreed to the BSB Agreed Order which requires BSB to perform Remedial Actions related to Parcel G.

19. Contemporaneously with this Order, Ecology is issuing the Hexcel Enforcement Order which requires Hexcel to perform Remedial Actions related to the Hexcel Parcels.

20. Contemporaneously with this Order, Ecology is issuing a Washington Hazardous Waste Management Act permit to BSB that incorporates the BSB Agreed Order.

VI. ECOLOGY DETERMINATIONS

Ecology makes the following Determinations, which BSB and Hexcel neither admit nor deny:

1. BSB and Hexcel are "owners or operators," as defined in RCW 70.1 05D.020(l2), of a "facility," as defined in RCW 70.105D.020(4).

2. Based on the presence of Hazardous Substances at the Facility and all factors known to Ecology, there is a "release" or "threatened release" of Hazardous Substances at the Facility as defined in RCW 70.105D.020(20).

3. Based upon credible evidence, Ecology issued a "potentially liable person" (PLP) status letter to BSB dated May 10, 2004, pursuant to RCW 70.105D.020(16), RCW 70.105D.040, and WAC 173-340-500. On June 3, 2004, BSB responded to Ecology's letter. On June 20, 2005, Ecology issued a letter to BSB determining that under RCW 70.105D.040 BSB is a PLP for the Facility.

4. Based upon credible evidence, Ecology issued a "potentially liable person" (PLP) status letter to Hexcel dated May 10, 2004, pursuant to RCW 70.105D.020(16), RCW 70.105D.040, and WAC 173-340-500. Hexcel objected to PLP status by reply letter of June 4, 2004. On June 20, 2005, Ecology issued a letter to Hexcel determining that under RCW 70.105D.040 Hexcel is a PLP for the Facility.

5. Pursuant to RCW 70.105D.030(1) and 70.105D.050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of Hazardous Substances, whenever it believes such action to be in the public interest.

6. Based on the foregoing facts, Ecology believes the Remedial Actions required by this Order are in the public interest.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that BSB and Hexcel take the following Remedial Actions at the Facility and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein.

1. Complete investigation of contamination found east of 84th Avenue South as set forth and in accordance with the requirements in Exhibit B to this Order and in accordance with the schedule set forth in Exhibit C to this Order.

VIII. TERMS AND CONDITIONS OF ORDER

A. Public Notice

Ecology shall provide public notice required pursuant to Chapter 70.105D RCW and WAC 173-340-600 concurrently for this Order, the BSB Agreed Order, and the Hexcel Enforcement Order.

B. Remedial Action Costs

BSB and/or Hexcel shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). BSB and/or Hexcel shall pay the required amount, except for those costs that BSB and/or Hexcel dispute within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, a general description of work performed, and the amount of time spent by involved staff members on the project. Itemized statements will be prepared quarterly. Failure to pay Ecology's costs, other than disputed costs, within ninety (90) days of receipt of the itemized statement of costs will result in interest charges pursuant to WAC 173-340-550(4). BSB and/or Hexcel shall pay any disputed costs that remain after completion of the dispute resolution process set forth below within ninety (90) days of a final determination by Ecology.

In order to assure these payments get to the proper Ecology account as soon as possible, the address for mailing via the U.S. Postal Service is:

Cashiering Section
Washington State Department of Ecology
P.O. Box 5128
Lacey, Washington 98509-5128

To send payments by messenger/overnight delivery service, the address to use is:

Cashiering Section
Washington State Department of Ecology
300 Desmond Drive
Lacey, Washington 98503

So it is properly credited, BSB and/or Hexcel should indicate the check is for cost recovery for the BSB/Hexcel Facility and enclose the bottom portion of Ecology's invoice.

C. Implementation of Remedial Action

Except where necessary to abate an emergency situation, neither BSB nor Hexcel shall perform any remedial actions at the Facility other than those Remedial Actions required by this Order, the BSB Agreed Order, or the Hexcel Enforcement Order unless Ecology concurs, in writing, with such additional remedial actions.

D. Designated Project Coordinators

The project coordinator for Ecology is:

Name:	Hideo Fujita, P.E.
Address:	Department of Ecology Northwest Regional Office 3190 - 160 Avenue SE Bellevue, WA 98008-5452
Telephone:	(425) 649-7068
FAX:	(425) 649-7098
E-mail:	hfuj461@ecy.wa.gov

The project coordinator for BSB is:

Name:	Ronald A. Burt
Address:	Patterson Planning & Services, Inc. 4525 Harding Road, Suite 215 Nashville, TN 37205
Telephone:	(615) 986-2679
FAX:	(615) 620-4510
E-mail:	raburt_pps@yahoo.com

Hexcel shall designate a project coordinator and provide notice of its designation to Ecology and BSB within ten (10) days of the effective date of this Order.

The project coordinator(s) shall be responsible for overseeing the implementation of this Order. The Ecology project coordinator will be Ecology's designated representative for the Facility. To the maximum extent possible, communications between Ecology, Hexcel, and BSB, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed through the project

coordinator(s). Ecology, Hexcel and BSB may change their respective project coordinator, but must provide ten (10) days advance written notification of the change to the other Parties.

E. Performance

All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a licensed professional engineer or licensed hydrogeologist, or equivalent as approved by Ecology, with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. BSB and/or Hexcel shall notify Ecology in writing of the identity of such engineer(s), hydrogeologist(s), or others, and of any contractors and subcontractors to be used in carrying out the terms of this Order, in advance of their involvement at the Facility. Any construction work performed pursuant to this Order shall be under the supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered in the State of Washington, except as provided in RCW 18.43.130.

F. Sampling, Data Reporting, and Availability

With respect to the implementation of this Order, BSB and/or Hexcel shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology and shall submit these results in accordance with Section VII of this Order.

All sampling data shall be submitted to Ecology according to the requirements of WAC 173-340-840(5). Ground water sampling data shall also be submitted to Ecology according to the requirements of Exhibit B. These submittals shall be provided to Ecology in accordance with Section VII of this Order.

BSB and/or Hexcel shall provide the other party with a copy of each report and submittal made to Ecology pursuant to Section VII of this Order.

If requested by Ecology, BSB and/or Hexcel shall allow split or duplicate samples to be taken by Ecology and/or its authorized representative of any samples collected by BSB and/or Hexcel pursuant to the implementation of this Order. BSB and/or Hexcel shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Facility under this Order. Ecology shall, upon request, allow split or duplicate samples of any samples collected by Ecology

pursuant to the implementation of this Order to be taken by BSB and/or Hexcel or an authorized representative of BSB and/or Hexcel, provided such sampling does not interfere with Ecology's sampling. Ecology shall notify BSB and Hexcel forty-eight (48) hours prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under Chapter 173-50 WAC for the specific analyses to be conducted, unless otherwise approved by Ecology.

G. Retention of Records

During the pendency of this Order and for ten (10) years from the date of completion of work performed pursuant to this Order, BSB and Hexcel shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert an equivalent record retention requirement into all contracts with project contractors and subcontractors. Upon request of Ecology, BSB and Hexcel shall make all records available to Ecology and allow access for review within a reasonable time.

H. Resolution of Disputes

1. In the event a dispute arises as to an approval, disapproval, proposed change, or other decision or action by Ecology's project coordinator, the Parties shall utilize the dispute resolution procedure set forth below.

(a) Upon receipt of the Ecology project coordinator's written decision, BSB and/or Hexcel have fourteen (14) days within which to notify Ecology's project coordinator of its objection to the decision.

(b) The Parties' project coordinators shall then confer in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) days, Ecology's project coordinator shall issue a written decision.

(c) BSB and/or Hexcel may then request Ecology management review of the decision. This request shall be submitted in writing to the regional section manager of Ecology's Hazardous Waste and Toxics Reduction Program (Section Manager) within fourteen (14) days of receipt of Ecology's project coordinator's written decision.

(d) Ecology's Section Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute within sixty (60) days of BSB's and/or Hexcel's request for review.

(e) BSB and/or Hexcel may then request additional Ecology management review of the Section Manager's written decision. This request shall be submitted in writing to the Program Manager of Ecology's Hazardous Waste and Toxics Reduction Program (Program Manager) within fourteen (14) days of receipt of Ecology Section Manager's decision.

(f) Ecology's Program Manager shall conduct a review of the dispute and shall issue a written decision within thirty (30) days of BSB's and/or Hexcel's request for additional review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.

2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any other activities required in this Order unless Ecology agrees in writing to a schedule extension.

I. Extension of Schedule

1. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, 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. The request shall specify:

(a) The deadline that is sought to be extended;

(b) The length of the extension sought;

(c) The reason(s) for the extension; and

(d) Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on BSB and/or Hexcel to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause includes, but is not limited to:

(a) Circumstances beyond the reasonable control and despite the due diligence of BSB and/or Hexcel, including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by BSB and/or Hexcel; or

(b) Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or

(c) Endangerment as described in Section VIII.K of this Order.

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of BSB and/or Hexcel.

3. Ecology shall act upon any written request for extension in a timely fashion.Ecology shall give BSB and Hexcel written notification in a timely fashion of any extensions granted pursuant to the Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.J when a schedule extension is granted.

4. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of:

(a) Delays in the issuance of a necessary permit which was applied for in a timely manner;

(b) Other circumstances deemed exceptional or extraordinary by Ecology; or

(c) Endangerment as described in Section VIII.K of this Order.

J. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by BSB and/or Hexcel to Ecology within seven (7) days of verbal agreement.

Except as provided in Section VIII.K of this Order, substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of Ecology, BSB, and Hexcel. BSB and/or Hexcel shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request for amendment is received. If the amendment to the Order represents a substantial change, Ecology will provide additional public notice and opportunity to comment pursuant to WAC 173-340-600(11)(d). If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.H of this Order.

K. Endangerment

In the event Ecology determines that any activity being performed at the Facility pursuant to this Order is creating or has the potential to create a danger to human health or the environment on or surrounding the Facility, Ecology may order BSB and/or Hexcel to stop further implementation of this Order for such period of time as needed to abate the danger.

If, for any reason, BSB and/or Hexcel determine that any activity being performed at the Facility pursuant to this Order is creating or has the potential to create a danger to human health or the environment, BSB and/or Hexcel may cease such activities. BSB and/or Hexcel shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, BSB and/or Hexcel shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with BSB and/or Hexcel's cessation of activities, it may direct BSB and/or Hexcel to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this Section, BSB's and Hexcel's obligations with respect to the ceased activities shall be suspended until Ecology

determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended for such period of time as Ecology determines is reasonable under the circumstances. In such event, no formal amendment of this Order shall be required and neither BSB nor Hexcel shall be subject to any enforcement action for stopping or delaying implementation of this Order. Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

L. Reservation of Rights/No Settlement

This Order is not a settlement under Chapter 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any Ecology rights or authority. Ecology will not, however, bring an action against BSB or Hexcel to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against BSB or Hexcel regarding Remedial Actions required by this Order, provided BSB and Hexcel complies with this Order.

Ecology nevertheless reserves its rights under Chapter 70.105D RCW, including the right to seek additional or different remedial actions at the Facility should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. This reservation by Ecology does not constitute an agreement by BSB or Hexcel to perform such additional or different actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of Hazardous Substances at the Facility.

M. Disclaimer

By signing this Order and taking actions under this Order, BSB and Hexcel neither admit nor deny at this time Ecology's Findings of Fact and Determinations. Furthermore, the participation of BSB and Hexcel in this Order shall not be considered as admission of liability and is not admissible as evidence against them in any judicial or administrative proceeding other than a proceeding by Ecology to enforce this Order or any judgment relating to it. BSB and Hexcel reserve all their rights and defenses, including but not limited to their rights to assert claims against

other potentially liable parties and each other with respect to the Facility and their rights and defenses with respect to any additional actions that Ecology may seek to require at the Facility.

N. Transfer of Interest in Property

No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Facility in which BSB or Hexcel has a property interest shall be consummated by BSB or Hexcel without provision for continued implementation of all requirements of this Order.

Prior to transfer of any legal or equitable interest BSB or Hexcel may have in portions of the Facility where work is to be performed pursuant to this Order, BSB and/or Hexcel shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least thirty (30) days prior to finalization of any transfer, BSB and/or Hexcel shall notify Ecology of the contemplated transfer. Upon transfer of any interest, BSB and/or Hexcel shall restrict uses and activities to those consistent with this Order and notify all transferees of the restrictions on the use of the property.

O. Compliance with Applicable Laws

1. All actions carried out by BSB and/or Hexcel pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in Paragraph 2 of this Section.

2. Pursuant to RCW 70.105D.090(1), BSB and Hexcel are exempt from the procedural requirements of Chapters 70.94, 70.95, 77.55, and 90.58 RCW and from the procedural requirements of any laws requiring or authorizing local government permits or approvals for the Remedial Action under this Order.

BSB and Hexcel have a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the Remedial Action under this Order. In the event either Ecology, BSB, or Hexcel determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the Remedial Action under this Order, it shall promptly notify the other Parties of its determination. Ecology shall determine whether Ecology, BSB or Hexcel shall be responsible to contact the

appropriate state and/or local agencies. If Ecology so requires, BSB and/or Hexcel shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the Remedial Action under this Order. Ecology shall make the final determination on the additional substantive requirements that must be met by BSB and Hexcel and on how BSB and Hexcel must meet those requirements. Ecology shall inform BSB and Hexcel in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. Neither BSB nor Hexcel shall begin or continue Remedial Action under this Order that is potentially subject to the additional requirements until Ecology makes its final determination.

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this Section.

3. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency which is necessary for the state to administer any federal law, the exemption shall not apply and BSB and Hexcel shall comply with both the procedural and substantive requirements of the specific law at issue. Such a determination by Ecology shall not affect the applicability of the exemption to any of the other statutes referenced in RCW 70.105D.090(1).

P. Indemnification

BSB and Hexcel agree to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of BSB and/or Hexcel and their officers, employees, agents, or contractors in entering into and implementing this Order. However, BSB and Hexcel shall not indemnify or save or hold harmless the State of Washington or its employees and agents from any claims or causes of action arising from or on account of acts or omissions of the State of Washington and its employees or agents in implementing the activities pursuant to this Order.

IX. EFFECTIVE DATE OF ORDER

This Order becomes effective upon the date the BSB Agreed Order becomes effective. Notwithstanding the foregoing, if Ecology revises this Order, the BSB Agreed Order, or the Hexcel Enforcement Order in response to public comment, BSB and/or Hexcel may, at their option, withdraw from this Order by providing Ecology with written notice of withdrawal. In the event BSB and/or Hexcel withdraw from this Order, this Order shall be null and void, of no force or effect, and of no evidentiary value whatsoever.

X. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon BSB's and/or Hexcel's receipt of written notification from Ecology of Ecology's determination that BSB and/or Hexcel have completed the Remedial Action required by this Order, as amended by any modifications, and BSB and/or Hexcel have complied with all other provisions of this Order. BSB and/or Hexcel may request such determination at any time, and Ecology shall issue such written notification of its determination within sixty (60) days after receipt of said request. The provisions of this Order shall also be deemed satisfied if BSB and/or Hexcel enter into a consent decree that by its terms replaces this Order.

XI. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

1. The Attorney General may bring an action to enforce this Order in a state court.

2. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for Remedial Actions and orders related to the Facility.

3. In the event Hexcel and/or BSB refuse, without sufficient cause, to comply with any term of this Order, Hexcel and/or BSB may be liable for:

(a) Up to three times the amount of any costs incurred by the State of Washington as a result of Hexcel's and/or BSB's refusal to comply; and

(b) Civil penalties of up to $25,000 per day for each day Hexcel and/or BSB refuses to comply.

This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

B. S. B. DIVERSIFIED COMPANY, INC.

11/9/05
ROBERT D. FARLEY Date
President
565 Fifth Avenue, 4th Floor
New York, NY 10017
(212) 885-1651

HEXCEL CORPORATION

11/9/05
A. WILLIAM NOSIL Date
Director, Corporate Environmental Engineering
11711 Dublin Boulevard
Dublin, CA 94568
(925) 551-4900 ext. 4482

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

11/10/05
JULIE SELLICK Date
Section Manager
Hazardous Waste & Toxics Reduction Program
Northwest Regional Office
(425) 649-7053

PES Environmental, Inc.
Engineering & Environmental Services

EXHIBIT B

June 20, 2005

827.001.05

Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

Attention: Mr. Hideo Fujita

DOWNGRADIENT AREA GROUNDWATER INVESTIGATION
REVISED SCOPE OF WORK ADDENDUM
KENT FACILITY
KENT, WASHINGTON

Dear Mr. Fujita:

On behalf of BSB Diversified Company, Inc. (BSB) and Hexcel Corporation (Hexcel), PES Environmental, Inc. (PES), is submitting this revised addendum to the current downgradient area scope of work (SOW).[1] This addendum is intended to comply with the Washington State Department of Ecology's (Ecology's) request that additional monitoring wells be installed to help delineate the downgradient edge of a low-level volatile organic compound (VOC) plume to the northeast of the facility (Figure 1).

BACKGROUND

Per the current downgradient area SOW, two monitoring wells (HY-12s and HY-13s) were installed in the downgradient area (Figure 2). They were installed at Ecology's request to confirm groundwater capture in the area of monitoring well HY-9 and the Ks, Ki, and Kd monitoring well nest. The existing wells were installed in September 2003 and have been monitored quarterly since then. Monitoring of these wells has demonstrated the existence of (1) a substantial gradient toward the extraction wells in the off-site area at and beyond 84th Avenue South, and (2) low-level concentrations (less than 3 µg/L) of vinyl chloride in HY-13s. Based on the HY-13s vinyl chloride results, Ecology requested additional monitoring of groundwater to the northeast of HY-12s and HY-13s.

[1] PES Environmental. 2003. *Groundwater Investigation Scope of Work, Kent, Washington.* January 24.

SCOPE OF WORK

Well Installation and Development

Two monitoring wells will be installed directly south of the 196th East Valley Highway Drainage/Spring Brook Creek near the Watkins Trucking property at 19604 84th Avenue South (Figure 2). The wells (HY-14s and HY-15s) will be installed and developed using the same construction guidelines outlined in the previous SOW. Prior to drilling, access from Watkins Trucking will be coordinated, and a subcontracted utility locator will be used to clear the location around each well. The wells will be installed using a hollow-stem auger drilling rig operated by Cascade Drilling of Woodinville, Washington. Each well will be constructed of nominal 2-inch PVC, screened between 20 and 30 feet below grade. Both wells will be developed by pumping, surging, or bailing. Residual soil generated during drilling will be sampled for disposal characterization, profiled, and transported for landfill disposal or thermal treatment. A licensed surveyor will be subcontracted to survey the horizontal and vertical locations of both new wells.

Groundwater Monitoring

Groundwater levels will be measured in monitoring wells HY-12s through HY-15s, HY-9, and Ks on a monthly basis for one year, coincident with monitoring of the Evaluation Monitoring Plan (EMP) well network. Four quarterly groundwater samples will be collected from all six wells and submitted for laboratory analysis of volatile organic compounds (VOCs). The procedures and laboratory methods outlined in the previous SOW will be used.

Data Evaluation and Reporting

On a quarterly basis, groundwater chemistry data will be validated and tabulated and a memo will be prepared summarizing the data validation. The groundwater elevation data will be tabulated, and a groundwater contour map for the wells near 84th Avenue South will be prepared. The data tables, groundwater contour map, and the data validation memo will be transmitted to Ecology with a brief cover letter describing the sampling event. The quarterly data reports will be transmitted to Ecology within 30 days of receipt of the laboratory analytical report.

At the conclusion of the fourth quarterly sampling event of the complete downgradient monitoring well network, a report will be prepared discussing both investigations and providing conclusions and recommendations about groundwater capture at 84th Avenue South. The evaluation will include an evaluation of the analytical and hydrogeologic data, the CG-1 through CG-4 capture zone, groundwater flow near the drainage ditch/Spring Brook Creek, and a conceptual site model for the downgradient area. Updated groundwater chemistry contour maps will also be provided. The fourth quarter report will be submitted to Ecology within 45 days of the receipt of the fourth quarter analytical laboratory report.

Ecology will determine if additional investigation is needed to adequately characterize the downgradient area. If Ecology determines that additional investigation is needed, then a scope of work and schedule will be submitted to Ecology within 45 days of Ecology's determination that such investigation work is needed.

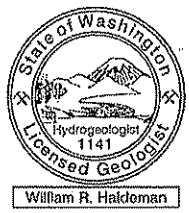
SCHEDULE

Implementation of this SOW addendum, including driller contracting and coordinating with the property owner, have begun. Depending on the driller's schedule, field activities will begin as soon as site access is arranged.

If you have any questions regarding this SOW addendum, please feel free to contact Ron Burt at (615) 986-2679 or me at (425) 637-1905.

Sincerely,

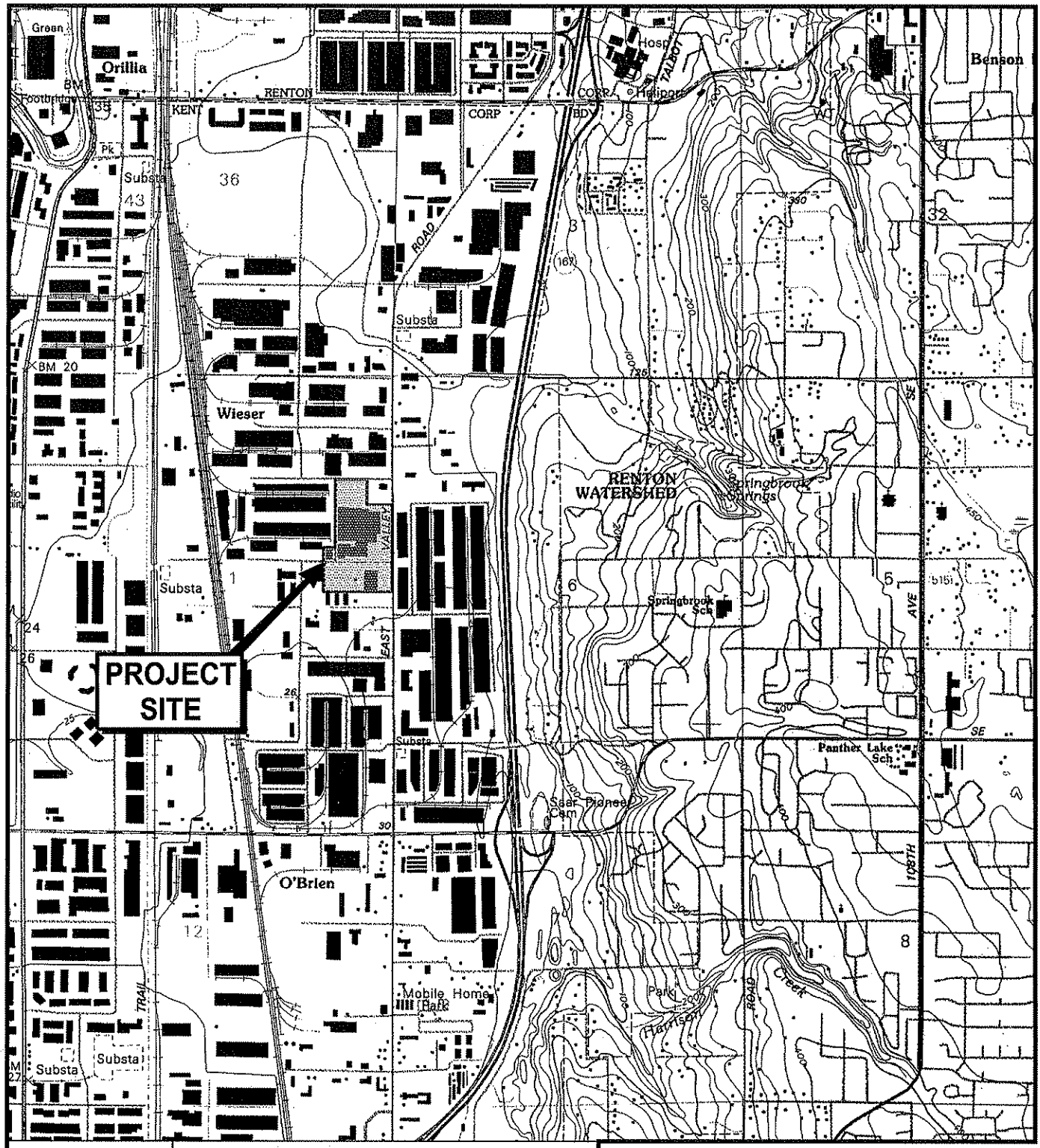
PES ENVIRONMENTAL, INC.



William R. Haldeman, LHG
Senior Hydrogeologist

Attachments: Figure 1 – Site Location Map
Figure 2 – Downgradient Area Well Locations

cc: Jerome Cruz, Washington Department of Ecology
Ronald Burt, Patterson Planning and Services, Inc.
Paul Beveridge, Heller Ehrman White & McAuliffe
William Nosil, Hexcel Corporation
James R. Norris, Hydro Geo Chem



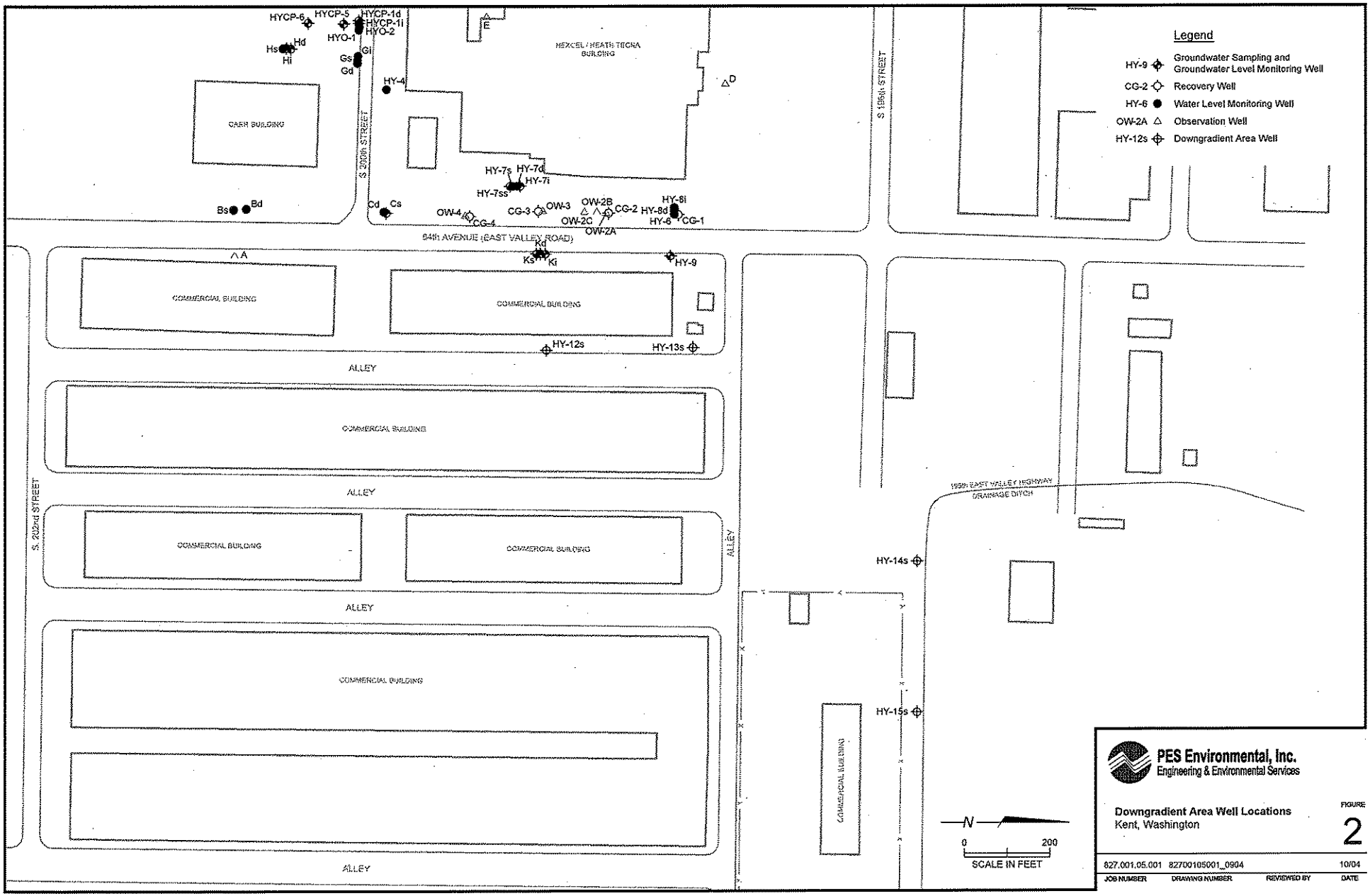
U.S.G.S. Topo Map - Renton, WA, 7.5-minute quadrangle.1949 revised 1994.

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Kent, Washington

FIGURE
1

827.001.03.006	827001_fig 1-3.dwg		8/02
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Downgradient Area Well Locations
Kent, Washington

FIGURE
2

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JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

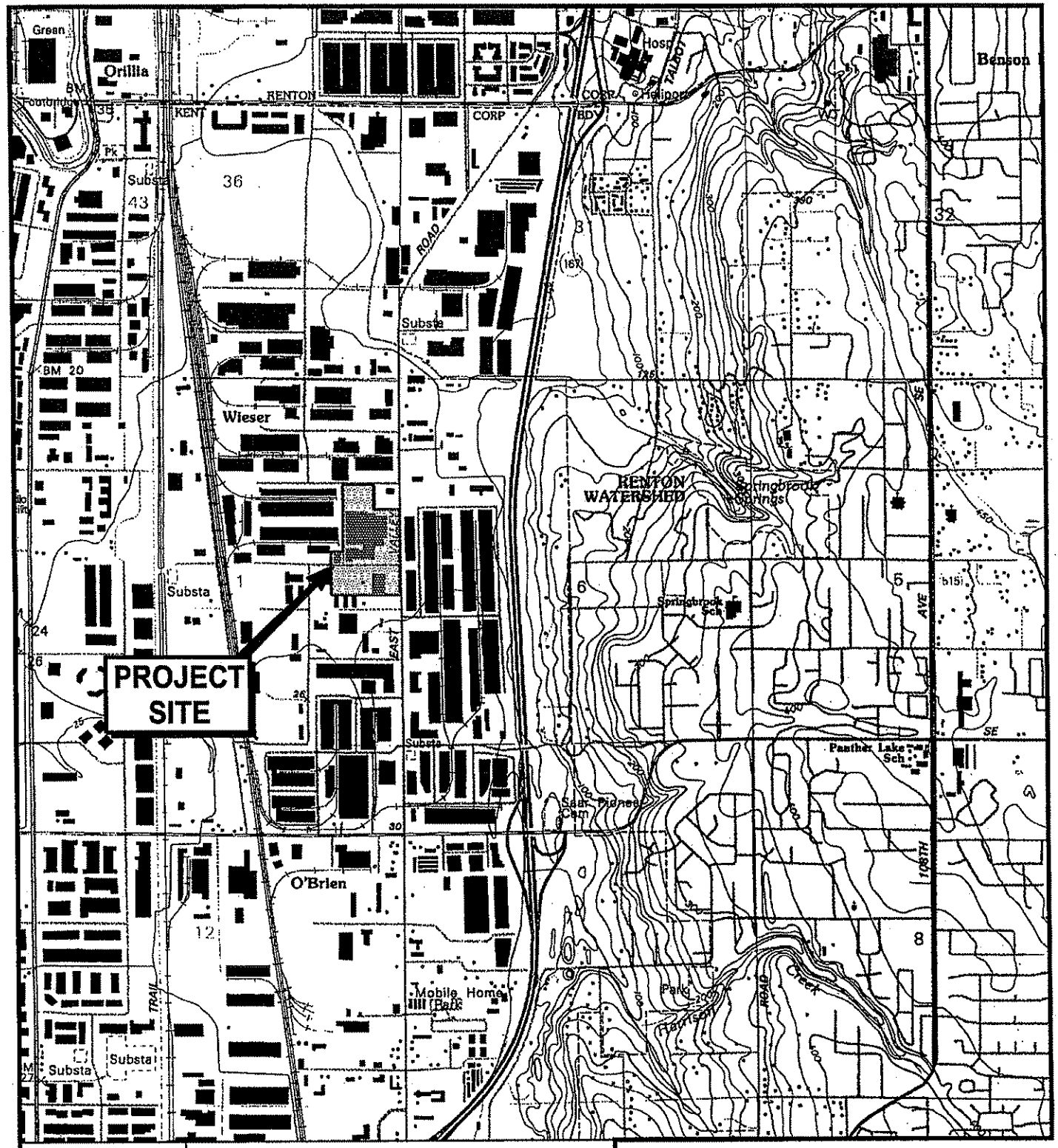
DE 2553

EXHIBIT C

DOWNGRADIENT INVESTIGATION SCHEDULE

Process Milestones DOWNGRADIENT INVESTIGATION SCHEDULE		
Activity	**Day**	**Comments**
Joint Agreed Order Effective Date	0	
Downgradient Investigation Activities		
Install, develop, and conduct initial sampling of new downgradient wells HY-12s thru HY-15s, HY-9 & Ks	45 -to-105 (minimum -to-maximum calendar days)	45 days after receipt of access from downgradient property owner(s) [May occur prior to order signing]. Access should be obtained within 60 days of effective date of order. If BSB and/or Hexcel are unable to obtain such access within 60 days, then the parties shall request an extension from Ecology. Ecology approval of such a request will not be unreasonably withheld.
Qt. 1: Transmit data to Ecology from initial sampling of HY-12s thru HY-15s, HY-9 & Ks	30 days after receipt of laboratory analytical report	
Qt. 2: Transmit data to Ecology from initial sampling of HY-12s thru HY-15s, HY-9 & Ks	30 days after receipt of laboratory analytical report	
Qt. 3: Transmit data to Ecology from initial sampling of HY-12s thru HY-15s, HY-9 & Ks	30 days after receipt of laboratory analytical report	
Qt. 4: Transmit data to Ecology from initial sampling of HY-12s thru HY-15s, HY-9 & Ks	30 days after receipt of laboratory analytical report	
Downgradient Investigation Completion Report	45 days after receipt of fourth quarter analytical report	

Exhibit B2 DE 2553



PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Kent, Washington

FIGURE
1

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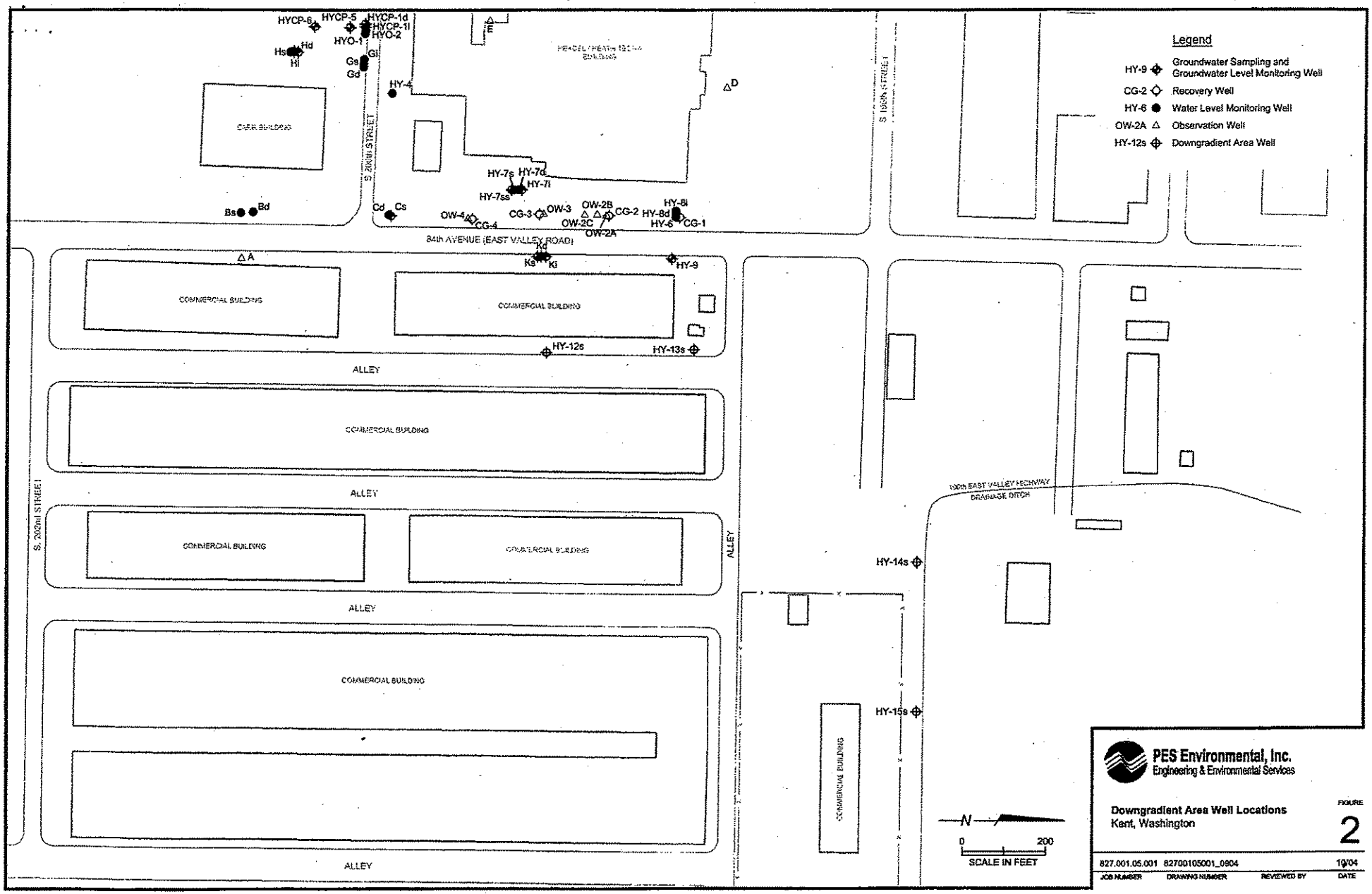
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Downgradient Area Well Locations
Kent, Washington

FIGURE
2

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JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

PES Environmental, Inc.
Engineering & Environmental Services

GROUNDWATER INVESTIGATION
SCOPE OF WORK

KENT, WASHINGTON

JANUARY 24, 2003

By:

William R. Haldeman

William R. Haldeman, R.G.
Senior Hydrogeologist

Brian L. O'Neal

Brian L. O'Neal, P.E.
Associate Engineer

827.001.01

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1.0 INTRODUCTION

This *Groundwater Investigation Scope of Work* (SOW) has been prepared to support field investigation activities to be conducted at the Northwest Corporate Park (hereafter referred to as the Downgradient Area) located adjacent to the Former Hytek Finishes Facility (hereafter referred to as the Kent Facility or site) located in Kent, Washington. This report defines applicable procedures and protocols to be followed during field investigations and describes the quality assurance (QA) and quality control (QC) procedures to be followed for field collection and laboratory analysis of samples collected during the investigation.

1.1 Site Description

The Downgradient Area is located at 20021 85th Avenue South in Kent, Washington (Figure 1). The Kent Facility is an approximately 25-acre site located at 8202 South 200th Street and 19819 84th Avenue South in Kent, Washington (Figure 1). The surrounding area is topographically flat.

1.2 Purpose

The Washington Department of Ecology (Ecology) requested, in a letter dated February 10, 2000, that additional monitoring data be collected east of 84th Avenue South to confirm groundwater capture in the area of monitoring well HY-9 and the Ks, Ki, and Kd monitoring well nest. Specifically, Ecology stated that "a series of wells and piezometers should be installed east of wells Ki and HY-9 to demonstrate the limits of the capture zones of the CG recovery wells." To address this area, field investigation activities defined by this SOW will be conducted to better define the area downgradient (to the northeast) of the intersection of South 200th Street and 84th Avenue South. The work plan was originally submitted to Ecology in June 2001. The work plan has been revised to address questions raised by Ecology regarding analytical detection limits.

1.3 Scope of Work Organization

The SOW is organized into five sections. A brief description of each section is presented below.

- **Section 1 - Introduction.** Section 1 contains an overview of the SOW.
- **Section 2 – Background.** Section 2 provides a summary of previous site investigations and remedial actions.
- **Section 3 - Field Sampling Plan.** Section 3 identifies well locations and presents the procedures to be used during field sampling and laboratory analysis. Included are procedures for: well installation, groundwater sampling, sample labeling, sample shipping and custody, decontamination, and residuals management.

- **Section 4 - QA/QC.** Section 4 includes QA/QC procedures for field activities and laboratory analyses, nonconformances, and records control.

- **Section 5 - Field Forms.** Section 5 provides an example set of forms to be used during field activities.

2.0 BACKGROUND

This section briefly summarizes previous site investigations and remedial actions at the site. This information provides a basis for the scope of work defined in this SOW.

2.1 Previous Investigations

In 1981, the United States Environmental Protection Agency (USEPA) initiated site investigations at the former Hytek Finishes Facility. Groundwater monitoring wells were installed at the site between 1981 and 1989, extending from the southeast side of the former Hytek Finishes waste treatment area to the east side of 84th Avenue South (Figure 2). Groundwater samples have been collected from these wells since 1981.

Five wells are located east of 84th Avenue South and north of South 200th Street (Figure 2). Three (Ks, HY-9, and HY-10) monitor the shallow aquifer zone, one (Ki) monitors the intermediate aquifer zone, and one (Kd) monitors the deep aquifer zone. The shallow wells are screened in sand, silty sand, and silt between about 5 and 24 feet below ground surface (bgs). The intermediate well is screened in sand from 23 to 33 feet bgs (the lower portion of the CG wells screened interval). The deep well is screened in sand and silty sand from 65 to 75 feet bgs. The recovery wells located upgradient of these wells (CG-1 through CG-4) are screened between 15 and 30 feet bgs.

2.2 Site Remediation

The majority of soil and groundwater remedial actions at the Kent Facility were implemented as part of RCRA closure activities in the late 1980s and early 1990s. Since August 1992, a groundwater extraction system has removed groundwater contaminated with HVOCs beneath the Former Hytek Finishes site. The extraction system consists of six recovery wells screened in the shallow aquifer. Two recovery wells (HYR-1 and HYR-2) are located south of South 200th Street and west of 84th Avenue South, and four recovery wells (CG-1 through CG-4) are located west of 84th Avenue South (Figure 2). Recovered groundwater is piped to the King County sewer treatment system.

2.2.1 Groundwater Capture

During recovery well operations, historical groundwater elevations in Ks, Ki, Kd, HY-9, and HY-10 have been higher than in the recovery wells and adjacent monitoring wells screened at similar depths. Groundwater modeling by S.S. Papadopulos and Associates of monthly

groundwater elevations has consistently shown the edge of the capture zone to the east of these wells; i.e., the wells are within the modeled zone of capture.

Although existing water quality, water level, and modeling results strongly suggest that groundwater HVOCs are being contained, Ecology has requested that additional monitoring data be collected east of 84th Avenue South to confirm groundwater capture in the area.

3.0 FIELD SAMPLING PLAN

3.1 Sampling Needs and Objectives

The sampling activities will be performed to provide data of sufficient quality and quantity to satisfy the overall objectives identified in Section 1.2.

The specific sampling objective for the Downgradient Area is as follows:

- Determine the downgradient extent of the CG wells capture zone.

The field investigation approach for the Downgradient Area is outlined below.

3.2 Downgradient Area Investigation Approach

Two monitoring wells will be installed to allow measurement of static groundwater levels and to collect groundwater samples. The wells will be installed at the approximate locations shown on Figure 2. These drilling sites are the closest locations downgradient of the Ki and HY-9 wells and will allow measurement of groundwater levels and collection of groundwater samples at the edge of or outside the capture zone. Both wells will be screened between 20 and 30 feet bgs, similar to lower portions of HY-9, HY-10, and the CG wells and the upper part of the Ki screened interval. The monitoring wells will be installed in accordance with Washington Administrative Code (WAC) 173-160 using hollow stem auger drilling techniques. Each monitoring well will be surveyed to document the exact sampling location and to allow the calculation of groundwater elevations.

3.2.1 Sample Types and Frequency

Soil samples will be collected for lithologic analysis at a 2½-foot interval. For a period of one year, the following monitoring activities will occur:

- Groundwater levels will be monitored in the new wells monthly.
- Four quarterly rounds of groundwater samples will be collected from the new wells. Two of the rounds will coincide with the biannual sampling (April and October) at the site, with the other two rounds occurring in January and July.

With Ecology's approval, both wells will be decommissioned at the end of the quarterly monitoring period.

3.2.2 Sample Analysis

The groundwater samples will be analyzed for HVOCs by USEPA Method 8260B, with a 25 mL purge volume. The analyses will be performed by Columbia Analytical Services (CAS) of Kelso, Washington.

3.3 Sample Designation

Soil samples will be identified by the boring designation and depth of sample collection. For example "SB01-15" indicates the soil sample was collected from boring SB01 at 15 feet bgs. Water samples will be identified similar to the soil samples, with the addition of the letter "W" after the depth, e.g. "SB01-15W".

QA samples will be submitted blind (i.e., not identified as QA samples) to the laboratory. The QA samples will be given a fictitious sample name (e.g., for a non-existent boring number).

3.4 Monitoring Well Installation Procedures

3.4.1 Drilling

Two monitoring wells will be installed (Figure 2) with a hollow-stem auger drilling rig equipped with 6-inch inside diameter (i.d.) auger flights. Subsurface soil samples will be collected during drilling for lithologic evaluation at 2.5-foot intervals using a 2-inch outside diameter (o.d.), split-spoon sampler or 3-inch o.d., split barrel sampler. After collection, the sampler will be opened, and a portion of the sample will be placed in a plastic bag or a glass jar, which will be sealed for subsequent headspace analysis with a photoionization detector. The sample will be reviewed for lithology and evidence of contamination (e.g., odor, product). A Boring Log Form (Figure 3) will be filled out, and a portion of the sample will be archived in a sealed plastic bag for later review, if necessary. Potable water will be used to control heaving sand, if required. The approximate volume of water added to the boring will be recorded on the Boring Log Form.

3.4.2 Well Installation

Each monitoring well will be constructed with nominal 2-inch-diameter, flush-threaded Schedule 40 PVC, a 10-foot length of machine-slotted screen (10-inch slot width), a 20 x 40 or equivalent silica sand filter pack, and an annular seal of bentonite chips. All materials will be placed concurrent with casing withdrawal. Bentonite chips placed above the water table will be hydrated with an equal volume of water. As-built construction details, including the volumes of materials used to construct each well, will be recorded on the Boring Log Form.

The top of each well will be completed with a steel monument that is flush with grade. The security casing will be seated on silica sand, the interior of the casing vault will be filled with

silica sand, and the outside of the casing will be cemented in place. To minimize the potential for surface water to enter the well annulus, the top of the surface casing will be installed slightly (less than 1 inch) above the surface grade.

Each well will be developed before measuring water levels or sampling groundwater. Development will involve pumping, surging, or bailing until the color of the discharge water does not change with additional development. Turbidity will be measured during well development. Water levels, amount of water removed, observations of the discharged water, and turbidity will be recorded on a Field Sampling Data Sheet (Figure 4). All development water will be handled as described in Section 3.11.

3.5 Groundwater Sampling Procedures

Water samples will be collected from the two new monitoring wells using the methods detailed in the Evaluation Monitoring Plan Amendment (EMCON, 1998). A summary of water sampling procedures is listed below:

1. Depth to water will be measured before sampling.

2. The monitoring well will be purged with a peristaltic pump fitted polyethylene and silicon (at the pump head only) tubing. A minimum of three well casing volumes will be removed before collection of any sample for laboratory analysis.

3. Conductivity, temperature, and pH will be taken after the removal of each well casing volume. Measurements will be recorded to the following standards: pH to $\pm$0.01 units, conductivity to $\pm$1 micromho, and temperature to $\pm$0.5°C. Samples will not be collected until these parameters have stabilized to $\pm$10 percent or after a maximum of two hours of purging. Well purging data will be recorded on a Field Sampling Data Sheet. Field instruments will be calibrated using known, standard solutions a minimum of twice daily.

4. Samples will be collected with a disposable polyethylene bailer. A bottom drain sampling device will be used to collect samples from the bailer. The sample will be poured down the inside of the organic sample bottle and not splashed into its base. All sample containers will be prepared and provided by the selected analytical laboratory.

5. QC samples will be collected as described in Section 4.5. Samples submitted for duplicate or QA chemical analyses will be collected using the same procedures described above. Samples will be blind labeled when submitted to the lab.

6. Following sample collection, the samples will be labeled, stored, shipped, and documented as described in Section 3.9.

7. Residual water generated during sampling will be handled as described in Section 3.11.

8. The sampling event will be documented on a Field Sampling Data Sheet.

3.6 Surveying

The locations of all existing and new monitoring wells will be surveyed by a registered surveyor. Each location will be surveyed for ground surface elevation to the nearest 0.1 foot), horizontal position (to the nearest 1.0 foot), and well casing rim (to the nearest 0.01 foot). Unless otherwise specified, the north rim of the well casing will be surveyed. The horizontal datum will be the Washington State Plane Coordinate System (NAD, 1983), and the vertical datum will be the same datum used by the city of Kent, the National Geodetic Vertical Datum of 1929.

3.7 Well Decommissioning

The monitoring wells will be decommissioned in accordance with WAC 173-160-460. Each well will be decommissioned either by removing the PVC well casing and filling the borehole with bentonite slurry during casing withdrawal or filling the PVC casing with bentonite. In either case, the surface of each decommissioned well will be completed with asphalt or concrete to match the surrounding land surface.

3.8 Sampling Procedure Alterations

Any deviations from the general sampling procedures presented here will be brought to the attention of the PES Environmental, Inc. (PES) project manager, and a Sample Alteration Checklist (Figure 5) will be filled out.

3.9 Sample Labeling, Shipping, and Chain-of-Custody

3.9.1 Sample Labeling

Sample container labels will be completed immediately before or immediately following sample collection. Container labels will include the following information:

- Project name
- Sample number
- Initials of collector
- Date and time of collection
- Analysis requested

Boring equipment will be inspected when it arrives on site for evidence of gross contamination (excessive mud or grease). If gross contamination is present, the equipment will be sent off-site for cleaning. Following the initial inspection, the boring and sampling equipment will be decontaminated at the location of the first activity. Final decontamination will be conducted at the location of the last activity. The rig and associated equipment will be decontaminated at the edge of the exclusion zone at the completion of each boring to prevent cross contamination. All reusable equipment that may come in contact with samples for chemical analysis will be decontaminated between collection of samples.

Cleaning will consist of scraping and scrubbing to remove encrusted materials, if necessary, followed by soap (nonphosphate detergent) and water wash and then potable water rinse. Alternatively, the equipment may be cleaned with a high-pressure hot water/steam cleaning unit. Next, sampling equipment will be rinsed with two deionized/distilled water rinses. Following decontamination, clean equipment will be allowed to air dry prior to obtaining the next sample.

Decontamination of personnel engaged in the intrusive activities will be performed at personnel decontamination stations established at the edge of the exclusion zones. Personnel decontamination will be conducted prior to leaving the area. Personnel decontamination will consist primarily of soap and water washings and water rinse of exterior protective gear to remove contaminants, followed by removal of gear. Coveralls should be removed by turning the clothing inside out. The steps for decontamination of personnel are as follows:

1. Wash work gloves, boots and outer protective coverall (if water resistant).
2. Remove tape at wrists, ankles.
3. Rinse work gloves, boots and coveralls (if water resistant)
4. Remove goggles, respirator or breathing mask.
5. Wash and rinse goggles or mask.
6. Remove outer suit.
7. Remove PVC or rubber boots (if worn).
8. Remove surgical gloves.

Non-reusable equipment will be collected in plastic trash bags. Disposal of all investigation-derived waste associated with decontamination will be conducted in accordance with Section 3.11. Respirators will be rinsed with potable water in the field after each use and will be cleaned at the end of each day using a cleaning solution as recommended by the manufacturer followed by a potable water rinse. Respirators will be inspected daily for damage, missing parts, and proper function.

3.9.2 Sample Transportation

Soil samples will be transported to the designated laboratory using the following procedures:

- Sample containers will be transported with ice in a cooler or other suitable shipping container.
- Ice or "blue ice" will be placed into each shipping container with the samples.
- All sample shipments will be accompanied by a Chain-of-Custody Form (Figure 6). The completed form will be sealed in a plastic bag.
- The name and address of the analytical laboratory will be placed on each shipping container prior to transportation.

3.9.3 Chain-Of-Custody

Once a sample is collected, it will remain in the custody of the sampler or other environmental contractor personnel until shipment to the laboratory. Upon transfer of sample possession to subsequent custodians, a Chain-of-Custody Form will be signed by the persons transferring custody of the sample container. If custody is transferred to a third party, a signed and dated chain-of-custody seal will be placed on each shipping container prior to shipping. Upon receipt of samples at the laboratory, the condition of the samples will be recorded by the receiver. Chain-of-custody records will be included in the analytical report prepared by the laboratory.

3.9.4 Sample Log-in

Upon receipt of samples (which will be accompanied by a completed chain-of-custody record detailing requested analyses), the Laboratory Coordinator(s) or his/her delegate will:

- Verify all paperwork, chain-of-custody records, and similar documentation
- Log-in samples, assign unique laboratory sample numbers, and attach the numbers to the sample container(s)
- Open project file and enter data into the file
- Store samples in a refrigerated sample bank
- Fax a copy of the signed chain-of-custody form to the PES Project Manager noting any problems with the samples

3.10 Decontamination

Decontamination of boring and sampling equipment will occur at the exclusion zone of the intrusive activities or at a central decontamination station (if required).

3.11 Residuals Management

Residual soil, purge water, used decontamination solutions, and personal protective clothing will be handled appropriately. Personal protective clothing will be worn during waste transfers because of potential skin contact and splash hazards. The following procedures will be used for the sampling residuals:

- Fifty-five-gallon drums will be located within the fenced BSB property for disposal of excess soil generated during sampling and characterization activities. The drums will be labeled with the date filled and description of contents. The drums will be sealed and secured daily following field activities. At the completion of the project, the drum contents will be disposed at an appropriate facility.

- Decontamination and purge water will be transported to the groundwater treatment system area on site and discharged to the groundwater treatment system for discharge to the sewer.

- Disposable clothing and equipment will be placed in plastic bags and disposed of as solid waste in an appropriate solid waste facility.

4.0 QA/QC

4.1 QA Objectives

The overall QA objective for measurement data is to ensure providing data of known and acceptable quality. All measurements will be made to yield accurate and precise results representative of the media and conditions measured. Chemical analyses will be performed in accordance with requirements of the analytical methods. All sample results will be calculated and reported in units presented in Table 2 to allow comparison of the sample data with regulatory criteria and federal, state, and local databases. QA objectives for precision, accuracy, and completeness have been established for each measurement variable, where possible, and are presented in Table 2.

4.2 Chemical Analysis

4.2.1 Analytical Procedures

Methods and references are summarized in Table 2. Data reporting requirements for all analyses are presented in Section 4.3.

Routine analysis of environmental samples will be performed using procedures based on the following methods:

- USEPA Method 8260B: HVOCs only by gas chromatography/mass spectrometry (GC/MS) (USEPA, 1996).

Any special analytical methods employed will be determined with laboratory concurrence prior to beginning sample analysis.

4.3 Data Reduction, Validation, and Reporting

The laboratory performing sample analyses will be required to submit summary data and QA information to permit independent and conclusive determination of data quality. The determination of data quality will be performed using the following as guidelines for data review: *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA, 1999).

4.3.1 Laboratory Data

The laboratory will be required to submit results that are supported by sufficient backup data and QA/QC results to enable the quality of the data to be determined conclusively. Prior to release of data, the laboratory project chemist will: review the data package for QC data results, verify that calculations were properly performed, and write a project narrative. Section 4.4 describes the procedures that will be used to evaluate the precision, accuracy, and completeness of the analytical test data. Upon completion of the review, the QA Officer will be responsible for developing a QA/QC report for the data.

Laboratory deliverable requirements for chemical analyses will include the information outlined below and in Table 3.

- A cover letter for each sample batch that will include a summary of any quality control, sample, shipment, or analytical problems, and will document all internal decisions. Problems will be outlined and final solutions documented. A copy of the signed chain-of-custody form for each batch of samples will be included in the narrative packet.
- Sample concentrations will be reported on standard data sheets in proper units and to the appropriate number of significant figures. For undetected values, the lower limit of detection for each compound will be reported separately for each sample. Dates of sample extraction or preparation and analysis must be included.
- HVOC chromatograms.
- A method blank summary will be included.
- Surrogate percent recovery will be calculated and reported.
- Matrix spike/matrix spike duplicate (MS/MSD) percent recoveries, spike level, and relative percent difference will be included.

- Laboratory reports will be faxed and mailed to the project manager. Copies of the full data set and electronic data deliverables formatted per PES requirements will also be transmitted to the PES project manager.

Sample holding times will be calculated by comparing the date of sample collection (shown on the chain-of-custody) with the date of sample analysis. All laboratory deliverables will be reviewed for data validation of chemical analyses. The main items for review are described in Table 4.

4.3.2 Field Measurement Data

The Project Manager will check the validity of all field data on a periodic basis by reviewing calibration procedures utilized in the field and by comparing the data to previous measurements obtained at the specific site.

4.3.3 Final Reporting and Archiving of Documents

Copies of all analytical data and/or final reports will be retained in the laboratory files. After one year, or whenever the data becomes inactive, the files will be transferred to archives in accordance with standard laboratory procedure. Data may be retrieved from archives upon request.

4.4 Data Assessment Procedures

Accuracy, precision, completeness, representativeness, and comparability are terms used to describe the quality of analytical data. Routine procedures for measuring precision and accuracy include use of replicate analyses, standard reference materials (SRMs), matrix spikes, and procedural blanks. Replicate matrix spikes and method blanks will be analyzed by the selected laboratory. Additional spikes and replicate analyses may be implemented. The minimum frequencies are as follows:

- Matrix Spike
  - HVOCs: one matrix spike and laboratory control sample or one MS/MSD will be analyzed per sample batch.
- Method Blank
  - HVOCs: one preparation blank will be analyzed per 12-hour shift.

Quality of analytical data represented by precision and accuracy are calculated using the mean, standard deviation, and percent recoveries. The mean, C, of a series of replicate measurements of concentration, C_i, for a given analyte will be calculated as:

$$\overline{C} = \frac{1}{n}\sum_{i=1}^{n} C_i$$

where:

n = Number of replicate measurements

The estimate of precision of a series of replicate measurements can be expressed as the relative standard deviation, RSD:

$$RSD = \frac{SD}{\overline{C}} X\ 100\%$$

where:

SD = Standard deviation:

$$SD = \sqrt{\sum_{i=1}^{n} (C_i - \overline{C})^2}$$

(n-1)

Alternatively, for data sets with a small number of points (e.g., duplicate measurements), the estimate of precision will be expressed as a relative percent difference (RPD):

$$RPD = \frac{C_1 - C_2}{\overline{C}} x\ 100$$

where:

C_1 = First concentration value or recovery value measured for a variable

C_2 = Second concentration value or recovery value measured for a variable

Accuracy as measured by matrix spike or laboratory control sample results will be calculated as:

$$\text{Recovery} = \frac{\Delta C}{C_s} x\ 100$$

where:

ΔC = The measured concentration increase due to spiking (relative to the unspiked portion)

C_s = The known concentration increase in the spike

Acceptable spike recoveries and acceptable RPDs are indicated in the appropriate analytical methodology or provided by the laboratory(s) based on control-charted recoveries.

Accuracy can also be measured by analysis of SRM or regional reference material and will be determined by comparing the measured value with the 95 percent confidence interval established for each analyte.

Completeness will be measured for each set of data received by dividing the number of valid measurements actually obtained by the number of valid measurements that were planned.

4.5 Field QA

Field QA will be maintained through compliance with the sampling plan, collection of field QA samples, and documentation of sampling plan alterations.

Duplicate soil and water samples will be collected at a minimum frequency of 5 percent of the total number of samples for each media. Duplicate samples will be labeled similar to the other samples and submitted blind to the laboratory. The locations for duplicate sample collection will be determined in the field.

If problems arise during field sampling, the problem will be discussed by the field technician and Project Manager, and a Sampling Alteration Checklist will be completed.

4.6 Corrective Action

Nonconforming items and activities are those that do not meet the project requirements or approved work procedures. Nonconformances may be detected and identified by project staff or laboratory staff. The person identifying the nonconformance will be responsible for reporting it to the PES project manager and for its documentation.

- Project Staff. During the performance of field activities and testing and verification of laboratory testing results.
- Laboratory Staff. During the preparation for and performance of laboratory testing, calibration of equipment, and QC activities.
- QA Staff. During the performance of audits.

Documentation will be made available to the PES project manager. Appropriate personnel will be notified by the management of any significant nonconformance detected by the project or laboratory staff. Completion of corrective actions for significant nonconformance will be verified by the PES project manager.

4.7 Files and Document Control

4.7.1 Record Control

Following receipt of information from external sources, completion of the field and laboratory phases of the project, and completion of analyses and issuance of reports or other transmittals, associated records will be submitted to the central project files. Field records; laboratory data summaries; test data; numerical calculations; reports and other data transmittals; copies of purchase orders for project services and contracts; correspondence including incoming and outgoing letters, memorandums, and telephone records; photographs; reference material; drawings; and floppy disks containing computer data and information will be transferred to the project central file. Records submitted to the project central file will be placed in folders or otherwise secured for filing.

4.7.2 Laboratory Files

The laboratory will maintain a records management system for documents pertinent to analytical performance. Laboratory records will include documents which are specific to the project, such as chain of custody, raw analytical data, and analytical reports, and documents which demonstrate overall laboratory operation, such as instrument log books and control charts.

4.7.3 Record Retention

Records will be stored for one year in hard copy and five years as magnetic tape (where applicable). For the project central file, the individual file folders will be divided into appropriate categories based on content, and numbered and filed sequentially within each category. For the original drawing and QA files, material will be filed only by project number. Computer files of laboratory data and other project information will be filed by project number and date.

5.0 STANDARD FIELD FORMS AND EQUIPMENT LIST

Standard field forms used to record sampling data and field observations are:

- Boring Log Form (Figure 3)
- Field Sampling Data Sheet (Figure 4)
- Sampling Alteration Checklist (Figure 5)
- Chain-of-Custody Form (Figure 6)

A blank copy of each form is presented in this section. Equipment that may be used during field activities is presented in Table 1.

6.0 REFERENCES

EMCON. 1998. *BSB Diversified Co. Inc. Evaluation Monitoring Plan Amendment.* Prepared for BSB Diversified Co., Inc. June 16.

U.S. Environmental Protection Agency. 1983. *Methods for Chemical Analysis of Water and Wastes.* USEPA Environmental Monitoring and Support Laboratory. March.

U.S. Environmental Protection Agency. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review.* USEPA Office of Emergency and Remedial Response. EPA540/R-99/008. October.

U.S. Environmental Protection Agency. 1996. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846, Third Edition, Final Update 3. December.

7.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

TABLES

Table 1

Field Equipment and Supplies

Forms/Documentation
• Field logbooks • Boring logs • Chain-of-custody/laboratory analysis report form • Custody seal • Project photo log • Drum labels • Health and Safety Plan (HASP)
Tools
• Fiberglass tape with stainless-steel weight • Tape measure calibrated to 0.1 inch • Decon brushes • Flashlight • Watch • Tool kit • Shovel
Soil Sampling
• Stainless steel spoons • Sample jars and labels • Photoionization detector • Water • Liquinox
Health and Safety Equipment
• Fire extinguisher • Half-face respirators • Organic vapor/acid gas cartridges with pre-dust filters, HEPA filter for lead dust • First aid kits • Safety glasses • Eyewash • Ear plugs • Tyvek® • Gloves-vinyl, nitrile, and neoprene • Duct tape

Table 1

Field Equipment and Supplies

Miscellaneous Equipment
• Spray paint, pencils, pens, labels • Waterproof markers • Paint pens for drums • Water jugs and sprayers • Hazardous materials packaging • Bubble wrap and tape for shipping • Cameras and film • Resealable plastic bags • Paper towels • Aluminum foil • Visqueen sheets • Buckets • Squirt bottle (wash) • Brunton compass • Plastic funnel • Cotton gloves • Nalgene wash bottles • Reagent bottles • Coolers (sample shipping) • Scrub brushes • Plastic tubs • Ice, in leak-proof bags • Drinking water • Large-scale site map

Table 2

Objectives for Measurement Data — Chemical Analysis

Variable	Units	Method Detection Limits	Accuracy[a]	Precision[a]	Completeness	Method No.	Bottle/Preservative	Maximum Holding Time[b]
HVOCs – water	µg/L	0.08 – 0.4	±50%	±35%	95%	USEPA 8260B	3-40 mL glass vials; Teflon lined lid/ keep on ice (4°C)	14 days

NOTE: mg/kg = milligrams per kilogram.
µg/L = micrograms per liter.

[a] Accuracy and precision results may deviate from these criteria as identified by the analytical method reference on a substance specific basis.

[b] Where two times are given, the first refers to the maximum time from sample collection to extraction, the second to the maximum time prior to extract analysis.

Table 3

Laboratory Deliverables Requirements

The following items will be delivered to support data validation:

- A transmittal letter and case narrative which includes information about receipt of the samples, the analytical results, and any significant problems in any aspect of sample analysis (e.g., deviation from methodologies or quality control parameters)
- Sample analytical results:
  - Soil results in µg/kg or mg/kg dry-weight
  - Method detection limit for undetected values reported for each analyte on a sample-by-sample basis
  - Date of sample preparation/extraction
  - Date of sample analysis
- HVOC chromatograms
- Method blank results, including the samples associated with each blank
- Surrogate recovery results for organic analyses, reported as percent recoveries, including actual spike levels
- Matrix spike/matrix spike duplicate (MS/MSD) results and matrix spike results HVOCs analyses, reported as percent recoveries, including actual spike levels
- Copies of signed chain-of-custodies

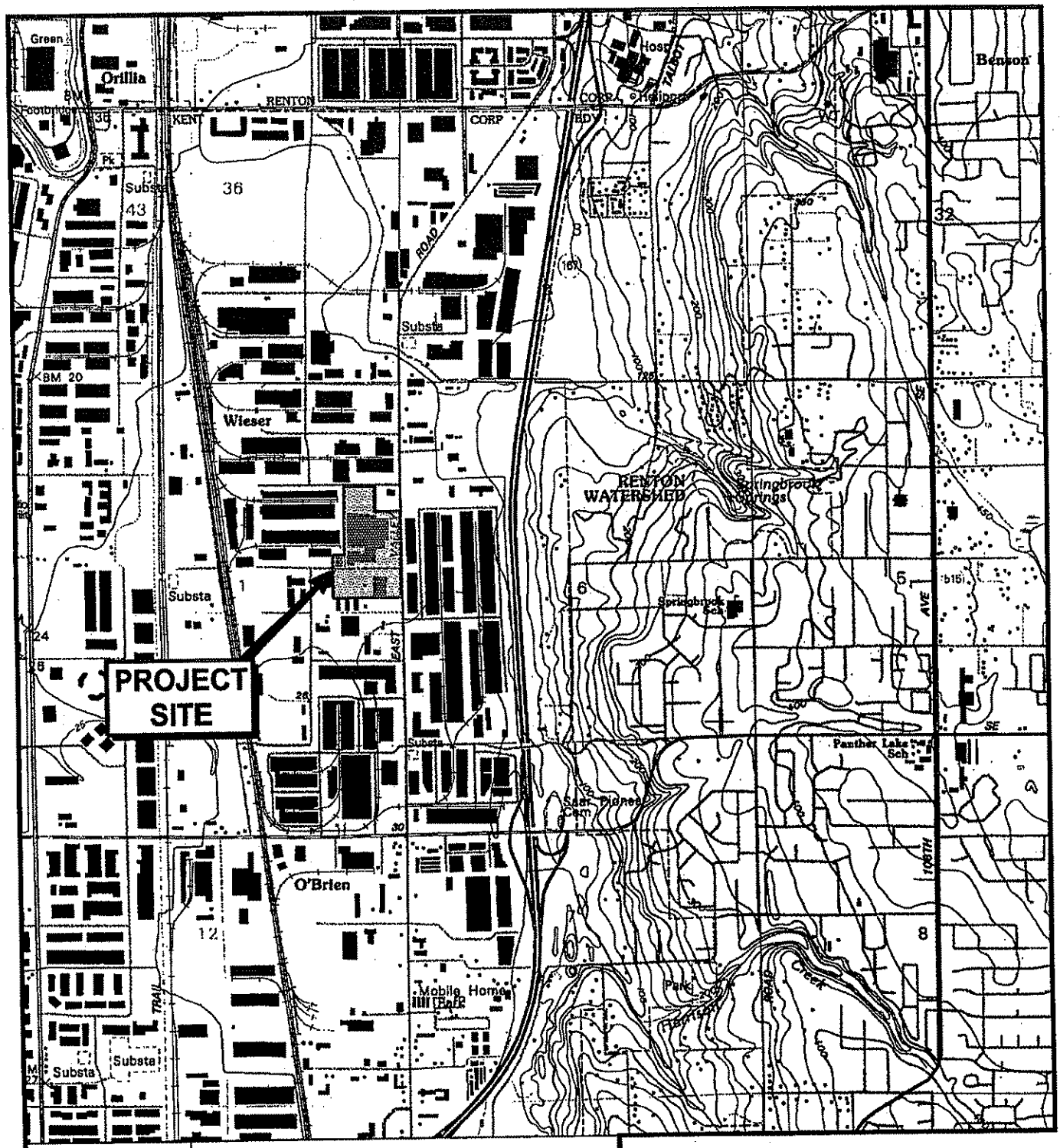
Table 4

Data Validation of Chemical Analyses

The following items will be reviewed for data validation:

- Holding times
- Method blank results
- Surrogate recovery results for organic analyses
- Field duplicate results
- Matrix spike/matrix spike duplicate (MS/MSD) results for HVOC analyses
- Matrix spike results for HVOC analyses
- Completeness
- Reported detection limits for analyses
- Laboratory control sample results
- Copies of signed chain-of-custodies

FIGURES



U.S.G.S. Topo Map - Renton, WA, 7.5-minute quadrangle.1949 revised 1994.

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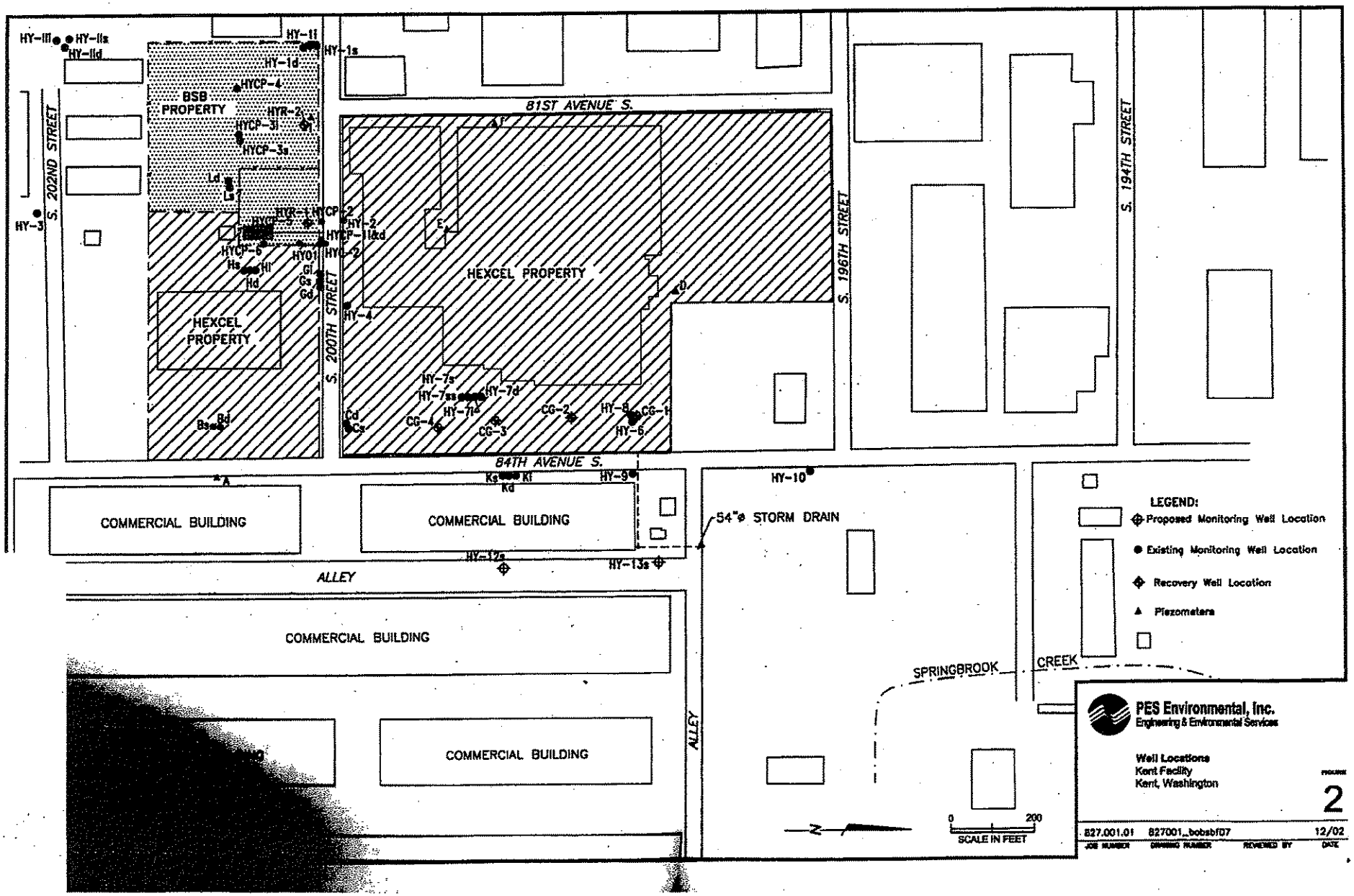
Site Location Map
Kent, Washington

FIGURE
1

827.001.03.006	827001_fig 1-3.dwg		8/02
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



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Well Locations
Kent Facility
Kent, Washington

FIGURE 2

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JOB NUMBER DRAWING NUMBER REVIEWED BY DATE

PES Environmental, Inc.
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FIELD LITHOLOGIC LOG

Number:
Type:

DATE:	PAGE OF
JOB NUMBER:	
PROJECT:	
PROJECT MANAGER:	
LOGGED BY:	
CONTRACTOR:	
C-57 LICENSE NO:	
DRILLING EQUIPMENT:	
BOREHOLE DIAMETER:	
TOTAL DEPTH OF BORING:	
SAMPLING METHOD:	
SAMPLER DIAMETER:	
DRIVE WEIGHT:	DROP:
START/STOP TIME:	
BACKFILL METHOD:	
SURFACE ELEVATION:	
SURFACE CONDITIONS:	
WEATHER:	
COMMENTS:	

LOCATION SKETCH SCALE 1"= NORTH ARROW

SAMPLE ID	TIME	PID (PPM)	BLOWS/6 INCHES	INCHES ADVANCED	INCHES RECOVERED	SAMPLE RECOVERED	GW DEPTH	DEPTH (FEET)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION COLOR, SOIL TYPE (SYMBOL) Munsell Number, Moisture, Consistency, Grain Size, Estimated Percentages (%gravel, %sand, %fines), Other (Angularity, Shape, Odor, Structure, Strength, Dilatancy, Toughness, Plasticity, etc.)
								1		
								2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		
								10		

LOGGED BY: _____ EDITED BY: _____
SIGNATURE INITIALS SIGNATURE

REV. 2/14/96

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Engineering & Environmental Services

Log of Exploratory Boring
Kent Facility
Kent, Washington

PLATE
3

827.001.01 827001_fielddocs.dwg 12/02
JOB NUMBER DRAWING NUMBER REVIEWED BY DATE

PES Environmental, Inc.
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GROUND-WATER SAMPLING FORM

PAGE:	OF
DATE/TIME:	
PROJECT:	
JOB NO.:	
REC/SAMP BY:	

WELL NO.:	WELL TYPE:	☐ Monitor	☐ Extraction	☐ Other
	WELL MATERIAL:	☐ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet BTOC): _____

Water Level Depth (WL in feet BTOC): _____

Number of Well Volumes to be purged (# Vols):

☐ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other _____

SAMPLING METHOD

☐ Bailer - Type: _____

☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATION:

(_____ TD (feet) − _____ WL (feet)) X _____ D (inches)^2 X _____ # Vols X 0.0408 = _____ Calculated Purge Volume gallons

PURGE TIME

_____ Start _____ Stop _____ Elapsed

PURGE RATE

Initial _____ gpm Final _____ gpm

ACTUAL PURGE VOLUME

_____ gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐°C ☐°F	Other _____	Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐°C ☐°F	Other _____
					Meter Nos.:				

Observations During Purging (Well Condition, Turbidity, Color, Odor): _____

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other _____

WELL SAMPLING

SAMPLING METHOD

☐ Same As Above

☐ Bailer - Type: _____

☐ Grab - Type: _____

☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____

☐ Other - Type: _____

QUALITY CONTROL SAMPLES Sample Series: _____

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples		Other Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.	Type	Sample No.

Office Copy - White Field Copy - Yellow

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Field Sampling Data Sheet
Kent Facility
Kent, Washington

PLATE
4

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JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

SAMPLING ALTERATION CHECKLIST

Sample program identification: _____

Material to be sampled: _____

Measurement variable: _____

Standard procedure for analysis: _____

_____

Reference: _____

_____

_____

Variation from standard procedure: _____

_____

_____

_____

_____

Reason for variation: _____

_____

_____

_____

Resultant change in field sampling procedure: _____

_____

_____

_____

Special equipment, material, or personnel required: _____

_____

_____

Author's name: _____ Date: _____

Approval: _____ Date: _____

Title: _____

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Engineering & Environmental Services

CHAIN OF CUSTODY RECORD

1682 NOVATO BOULEVARD, SUITE 100
NOVATO, CALIFORNIA 94947
(415) 899-1600 FAX (415) 899-1601

LABORATORY: ____________ SAMPLERS: ____________

JOB NUMBER: ____________

NAME / LOCATION: ____________

PROJECT MANAGER: ____________ RECORDER: ____________

DATE				SAMPLE NUMBER / DESIGNATION	MATRIX				# of Containers & Preservatives					DEPTH IN FEET	ANALYSIS REQUESTED							
YR	MO	DY	TIME		Vapor	Water	Soil	Sedim't	Unpres.	EnCore	H_2SO_4	HNO_3	HCl		EPA 5035/8010	EPA 5035/8021	EPA 5035/8260B	TPHg by 5035/8015M	TPHd by 8015M	TPHmo by 8015M	EPA 8270C	MNA Parameters (see notes)

NOTES
Turn Around Time:

CHAIN OF CUSTODY RECORD					
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		DATE	TIME
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		DATE	TIME
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		DATE	TIME
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		DATE	TIME
DISPATCHED BY: (Signature)	DATE	TIME	RECEIVED FOR LAB BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT:					

WHITE-Laboratory COPY YELLOW-Project Office Copy PINK-Field or Office Copy

PES Environmental, Inc.
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Chain of Custody Form
Kent Facility
Kent, Washington

PLATE
6

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.01	827001_fielddocs.dwg		12/02