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& Skelly
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21 June 1991
File No. 535-005

Mr. Robert Marino
Chief, Site Control Section
Bureau of Hazardous Site Control
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

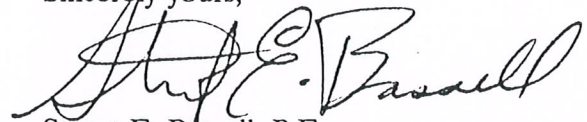
Re: Flintkote (Orangeburg Pipe Company)
Site No. 344013

Dear Mr. Marino:

On 6 June 1991, you were mailed Summary Report: Soil and Groundwater Investigations Conducted on Block 754 of the Former Orangeburg Pipe Manufacturing Site, Orangeburg, NY.

Enclosed is the Summary's backup report which presents the drill logs, field data sheets, laboratory reports, etc.

Sincerely yours,


Stuart E. Bassell, P.E.
Project Engineer

SEB/bm
Enc.

cc: Dan Eaton (NYSDEC - Hazardous Site Control)
John Swartwout (NYSDEC Eastern Investigation Section)
Ram Pergadia (NYSDEC Region 3)
Barry Tornick (Dames & Moore)
Dexter Lindberg (Flintkote)
Sean Mullany (Nixon, Hargrave, Devans & Doyle)
Eric Bergstol (Berbor Realty)
Neil Borden (Berbor Realty)

BERBOR REALTY, INC.
New City, New York

APPENDICES

**SOIL AND GROUNDWATER INVESTIGATIONS
CONDUCTED ON BLOCK 754
OF THE FORMER ORANGEBURG PIPE
MANUFACTURING SITE**

Orangeburg, New York

April 1991

LMSE-91/0321&535/005

LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

LIST OF APPENDICES

- A Proposed Work Plan (November 1990)
- B Health and Safety Plan
- C Ground Penetrating Radar Survey
- D Soil Gas Study
- E Drilling and Well Construction
- F Test Pits
- G Well Development
- H Groundwater Sampling
- I Surface Water Sampling
- J Laboratory Analyses

APPENDIX A
PROPOSED WORK PLAN

**Lawler,
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& Skelly
Engineers**

Environmental Science & Engineering Consultants

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2 November 1990
File No. 535-005

Mr. John B. Swartwout, P.E.
Chief, Eastern Investigation Section
Division of Hazardous Waste Remediation
NYSDEC
50 Wolf Road
Albany, NY 12233-7010

Re: Site Investigation of Flintkote Property; Orangeburg, NY

Dear Mr. Swartwout:

Pursuant to our telephone conversation of 1 November 1990, Lawler, Matusky & Skelly Engineers (LMS) is submitting the work plan for site investigation of the 6 acre, triangular-shaped parcel owned by Flintkote. As mentioned, this project has only recently been authorized and has a very ambitious schedule. LMS has designed this study to answer questions raised in our previous work on the adjacent parcel, i.e. is source of contaminants located on triangular parcel or possibly on north side of Highview Avenue.

LMS will provide information to your office following our field investigations, laboratory analyses of groundwater and, of course, a copy of the final report will be forwarded to you.

As of this date, several of the tasks have been either completed or attempted. These include clearing of brush, ground penetrating radar search for utility pipes and soil gas/combustible gas survey. The site clearing task was conducted by our client, and not to our specifications, prior to a contract being signed. The soil gas survey was terminated after a day in the field because the soils were saturated from heavy rains to the point where results could be questionable. We have not yet made a decision regarding rescheduling this survey.

LMS is scheduled to begin investigative drilling/monitoring well installation during the week of 5 November 1990 and plans to complete this work by mid-December of this year.

Please be advised that Task 7 of the work scope has not yet been authorized by our client and will

Mr. John B. Swartwout, P.E.
Division of Hazardous Waste Remediation NYSDEC

2 November 1990
Page2

obviously be predicated on our findings, discussions with NYSDEC etc.

We appreciate your understanding of this site and project and look forward to working with you on it. If you have any questions, please do not hesitate to call either Stu Bassell or myself.

Very truly yours,



Bruce L. Lippincott, Ph.D.
Senior Project Manager

cc: Ram Pergadia - NYSDEC Region 3

BLL:tms

ATTACHMENT 1

Technical Scope: Remedial Investigation of 5.9 Acre Parcel

The scope and estimated cost of the project is based on the following assumptions:

- Flintkote (or their representatives) will provide all existing engineering reports, environmental investigation reports, site drawings/maps, keys to existing monitor wells, etc. concerning the property;
- The field work described above can be performed in Level D Personnel Protective Equipment;
- Drilling can be performed with hollow stem augers or rotary methods;
- The monitor well (MW) design and development criteria described in this proposal will preclude any unusual problems with turbid groundwater;
- Drill cuttings and purge water generated during the MW installation and development procedures can be discharged on site (e.g. they need not be drummed);
- LMS' Health & Safety Plan (HASP) developed and used for the previous investigations would remain applicable to the proposed field work;
- The proposed two-day utility search/subsurface hazard screening will be sufficient for concerns related to worker health & safety.

Task (0) - LMS Mobilization/Contracting

During this task, LMS will develop the specifications for and subcontract geophysical, drilling and surveying services, as well as the laboratory analytical services for the testing of soil gas, sediment and groundwater samples. LMS anticipates that this task can begin within one week of written authorization from Bergstol Enterprises.

Task (1) - Site Clearing & Preparation

LMS plans to use Burns Contracting as our subcontractor for this task. This task will consist of the clearing of vegetation from approximately 3.5 acres of the eastern portion of the site, between Greenbush Road and the foundations of the former buildings. Emphasis will be on clearing surface debris and vegetation from areas around the proposed sample locations, which will be marked beforehand by LMS personnel in the field. Cuttings and debris will be stockpiled neatly on site.

ATTACHMENT 1

Task (2) - Utility Search

As previously mentioned, this site was formerly one of the principal manufacturing areas for the Orangeburg Pipe Company. Insurance maps reviewed by LMS during our previous work on the adjacent properties indicated the former presence of underground storage tanks (USTs) and/or aboveground storage tanks, a plastics manufacturing building and several other manufacturing buildings on this property. LMS' personnel have performed several visual inspections of the site which have confirmed the presence of complicated underground structures. Therefore, LMS will subcontract Subsurface Consulting Ltd. to perform ground penetrating radar (GPR) screening of most of the proposed boring locations (Figure 1).

Ten ft by ten ft "boxes" centered on the proposed boring locations will be surveyed to pre-screen the subsurface conditions, such that the risk to worker health and safety as well as damage to subsurface structures can be reduced. The GPR survey will pay special attention to the former UST area.

Task (3) - Soil Gas/Combustible Gas Surveys

LMS will subcontract the services of Tetra-K Testing to perform the VOC analyses of the soil gas samples utilizing a portable, laboratory grade gas chromatograph. LMS and/or Tetra-K Testing personnel will install 20 to 30 soil gas probes over the course of a two-to-three day soil gas survey. The first day of the survey will be used to obtain information on the presence or absence of volatile organic compounds (VOCs) in the soil vapor over a wide area, while the following day(s) will utilize the results of the first to focus on particular areas of concern. The tentative locations of these soil gas samples are shown on Figure 1.

Each probe will be set at a depth of 3 to 5 ft below ground surface (BGS) at the approximate locations shown in Figure 1. The analyses of soil gas samples will focus on (1) DCA and its related compounds, (2) the volatile (BTX) fraction of fuel oils and gasoline, and (3) the CO₂, methane and oxygen content of the soil gas. Analyses (1) and (2) will screen for "direct" evidence of organic solvents and hydrocarbons and will be performed by Tetra-K Testing personnel. The latter analyses (3) will be performed by either Tetra-K or LMS personnel with portable sensors, and will screen for "indirect" evidence of these potential contaminants.

ATTACHMENT 1

Task (4) - Investigative Drilling/MW Installation

Based on the results of Tasks (2) and (3), LMS will make the final selection of the locations of 20 to 25 investigative soil borings. Four of these borings will be completed as shallow groundwater monitor wells, and will be screened across the inferred depth of the water table. Because of the potential presence of a free-product fuel oil plume on site, up to five additional borings will be completed as piezometers to provide more detailed hydrogeologic information, as needed. LMS proposes to use Kendrick as our drilling subcontractor; oversight of the drilling program will be provided by a qualified LMS scientist.

Because of the fine-grained nature of the overburden sediments at this site, LMS will design these MWs with carefully selected screen and pack materials. The MWs will be constructed of 2" inside diameter (ID), 0.006 in. slot PVC VEE-Wire screen, (manufactured by Johnson Filtration), or similar material. The MWs will be surrounded by a minimum of a 2 in. fine sand pack, consisting of Morie 00 sand or similar material. The MWs will be protected with cast-iron standpipes and locking caps. If installed, the proposed piezometers will be constructed of 1.25 in. ID, 0.010 in. slotted PVC screen and riser, and will be surrounded by a sand pack consisting of Morie 0 sand or similar material. All investigative borings not finished as MWs or piezometers will be properly grouted with a cement-bentonite slurry. The tentative locations of these borings/MWs are shown on Figure 1.

LMS proposes two separate mobilizations for this project. The first mobilization will include the advancement of approximately 15 borings, four of which would be completed as MWs. Approximately 7 sediment samples would be submitted for EPA Method 624 VOC, 625 Semivolatile and petroleum hydrocarbon (PHC) analyses.

After the first drilling phase is complete, the new MWs and will be surveyed, carefully developed and allowed to stabilize for a minimum of one week. The piezometers which are installed will be also be surveyed, but are not proposed to be developed or sampled. Subsequently, these MWs will be purged of ≥ 3 well volumes and sampled. Groundwater samples will be shipped for EPA Method 624 VOC, 625 Semivolatile and PHC analyses—the details of the development and sampling program are provided in the description of Task (5) below.

Upon receipt and review of the analytical results of the first round of soil and groundwater samples, LMS will select the remaining boring locations and initiate the second phase of drilling. Approximately 5 to 10 additional borings will be advanced, with a few of these borings completed as a 1.25 in. ID piezometers. Approximately 3 additional sediment samples will be sent for Method 624 VOC, 625 Semivolatile and PHC analyses.

ATTACHMENT 1

Task (5) - Well Development, Field Sampling and Analyses

The coordination and timing of this task with Task (3) is described above. Task (5) is proposed to include the sampling and chemical analyses of a total of approximately 12 soil/sediment samples, (10 from borings and 2 from surface water streams/ditches), 14 groundwater samples. Two rounds of sampling and analyses will be conducted on seven MWs, (e.g. an initial round and a duplicate). The seven monitor wells that are proposed to be sampled are denoted with an asterisk on Figure 1. Surface water and surface water-sediment sample locations are also shown on Figure 1. LMS proposes to use CAMO Laboratories and Envirotest as our subcontractors for these chemical analyses.

The sediment samples will be obtained by scraping a representative subsample from the contents of the driller's split spoon with a clean stainless steel or teflon sampling spoon by the LMS field scientist. The specific depth interval and split spoon to be subsampled from a given boring will be selected in the field, and will be based on both visual observations and screening of the split spoons with an organic vapor analyzer (OVA) or photoionization detector (PID).

Surface water samples will be obtained by dipping the sample jar directly into the stream/ditch. Surface water-sediment samples will be obtained with a clean stainless steel spoon.

The MWs will be developed by removing a minimum of 5 well volumes with a centrifugal pump. A dedicated length of polyethylene hose will be used in the development of each well. LMS personnel will utilize a turbidity meter to periodically check the turbidity of the purged ground water--NYSDEC's guidance criteria of ≤ 50 nephelometric units (NTUs) will be used to determine when development is complete. Purge water will be discharged on the ground surface on site, downgradient of each respective well.

As noted above, groundwater samples will be obtained from a total of seven monitor wells, e.g. from both the four new MWs and three existing MWs (MW-1D, MW-18 and MW-20). Each MW will first be purged of ≥ 3 well volumes, (or until a purge water turbidity of ≤ 50 NTUs is achieved), and then sampled; subsequently, these groundwater samples will be shipped for Method 624 VOC, 625 Semivolatile and PHC analyses. The new and existing MWs will be sampled with dedicated teflon or stainless steel bailers.

Water level measurements will be obtained from all of the accessible MWs both on this property and the adjacent parcels at least once over the course of the project. Water level measurements will be obtained more frequently, (as appropriate), from both the new and existing monitor wells on the site to be investigated (Figure 1).

APPENDIX B
HEALTH AND SAFETY PLAN

LAWLER, MATUSKY & SKELLY ENGINEERS

SITE-SPECIFIC

HEALTH AND SAFETY PLAN FORM

Site Name: Orangeburg Shopping Ctr Location: Route 303, Orangeburg, NY

HASP Preparer: Stephen Seymour Job No. 535-004005

APPROVALS

Project Manager: ~~Carla Logan~~ Bruce Lippincott

Safety Officer: Karen Wright *Karen Wright 11/1/90*

PROJECT PERSONNEL:

On-Site Coordinator: Kevin McGuiness

On-Site Health and Safety Officer: ~~Stephen Seymour~~ Tarik Zarrouk

Phone: (914) 735-8300

DATE OF PLAN PREPARATION: January 4, 1989 *revised 10/31/90*

HAZARDOUS/SUBSTANCES (known or suspected, contaminated media or in storage container, etc.):

Asbestos

Petroleum hydrocarbons

PCBs

Coal tar

1,1,1-trichloroethane ; 1,1-dichloroethane ; 1,2-dca
chloroethane

chlorobenzene

tetrachloroethylene

toluene, xylene, ethylbenzene

HAZARD ASSESSMENT (toxic effects, including TLVs, IDLHs, reactivity, stability, flammability, and operational hazards with sampling, decontaminating, etc):

	TLV, mg/m ³	STEL, mg/m ³	IDLH, ppm	LEL, %	UEL, %	FP, °F	VP, MM	VD	Odor threshold ppm	Time to breakthrough ppm
Asbestos	0.2-2 fibers/cc	-	Ca	-	-	-	-	-	None	-
PCB 1242	1	2	Ca	-	-	349	0.001	-	-	-
PCB 1254	0.5	1	Ca	-	-	432	0.00006	-	-	-
Coal tar pitch volatiles	0.2	-	Ca	-	-	-	-	-	-	-

see attached additional list

SITE WORK ZONES: (designate exclusion zone, contamination reduction zone and support zone)

See attached Figure 1

SITE ACCESS: (describe procedures to control site access)

HSO to keep log of all personnel on site in case of emergency

MONITORING PROCEDURES (If required by the Safety Officer)

Monitoring the site for identity and concentration of contamination in all media:

Background reading of support zone with HNU. Continuous

monitoring of breathing zone with HNU during all on site

activities.

TABLE 1
Orangeburg Shopping Center

11/01/90

HAZARDOUS SUBSTANCES

COMPOUND	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% a deg. F)	UEL (%)	FLASHPOINT (F)	AUTOIG. TEMP. (F)	VP (mm)	VD (mm)	IP (eV)	SOLUBILITY (%)	ODOR THRESH. (ppm)	RESP. PROT.	TOXIC EFFECTS
Chlorobenzene	Monochlorobenzene, Chlorobenzol, Phenyl chloride, MCB	75	-	75	2400	1.3	7.1	84	1099	8.8	3.9	9.07	0.1	0.21-60	yes	Irrit skin, eyes, nose; drow; inco; liver damage
Chloroethane	Hydrochloric ether; muriatic ether	1000	-	1000	20000	3.8	15.4	-58	966	1064	2.2	10.97	0.6	-	no	Inco, inebriate; abd cramps; card arrhy, card arrest, liver, kidney damage
1,1-Dichloroethane	Ethylidene chloride; 1,1-Ethylidene dichloride; Asymmetrical dichloroethane	200	-	100	4000	6	16	17	824	182	3.42	-	<0.1	120	no	CNS depres; skin irrit; drow, unconscious; liver, kidney dam
1,2-Dichloroethane	Ethylene dichloride; Glycol dichloride; Brocide	10	1	50	carcinogen	6.2	16	55	775	62	3.4	9.64	0.8	6.2-100	no	CNS depres; nau, vomit; derm; irrit eyes; corneal opacity; carc.
Ethylbenzene	Phenylethane; Ethylhexol	100	-	100	2000	1	6.7	59	810	7.1	3.7	8.76	0.015	0.25-200	yes	Irrit eyes, muc memb; head; derm, narco, coma

(-): Unknown

c: Ceiling limit.

NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

TABLE 1
Orangeburg Shopping Center
HAZARDOUS SUBSTANCES

11/01/90

COMPOUND	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% @ deg. F)	UEL (%)	FLASHPOINT TEMP. (F)	AUTOIG. TEMP. (F)	VP (mm)	VD (mm)	IP (eV)	SOLUBILITY (%)	ODOR THRESH. (ppm)	RESP. PROT.	TOXIC EFFECTS
Tetrachloroethylene	Perchloroethylene	50	b	100	carcinogen	nc	nc	nc	-	14	-	9.32	0.015	4.7-50	no	Irrit eyes, nose, throat; nau; flush face, neck; vertigo, dizz, inco; head; som
Toluene	Toluol; Phenylmethane; Methyl benzene	100	100	200	2000	1.3	7.1	40	896	22	3.1	8.82	0.05	0.17-40	yes	Ftg, weak, conf, euph, dizz, head; dil pup; ner; musc ftg; insom; pares; derm; photo
1,1,1-Trichloroethane	Methyl chloroform	350	-	350	1000	7	16	nc	-	100	4.55	-	0.07	20-500	no	Head, lass; CNS depress, poor equi; irrit eyes; derm; card arryh
o-Xylene	1,2-Dimethyl benzene	100	100	100	1000	1	6	90	867	7	3.7	8.56	0.00003	1.8	yes	Dizz, excitement; drow; inco; stagg gait; irrit eyes, nose, throat; corneal vacuolization; anor, nau, vomit, abd pain; derm

(-): Unknown
c: Ceiling limit.
NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

TABLE 1
Orangeburg Shopping Center

11/01/90

HAZARDOUS SUBSTANCES

COMPOUND	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% a deg. F)	UEL (%)	FLASHPOINT TEMP. (F)	AUTOIG. VP (mm)	VD (mm)	IP (eV)	SOLUBILITY THRESH. (%)	DOOR (ppm)	RESP. PROT.	TOXIC EFFECTS
m-Xylene	1,3-Dimethyl benzene	100	100	100	100	1.1	7	84	982	9	3.7	8.56	0.00003	1.1-3.7 yes Dizz, excitement; drow; inco; stag gait; irrit eyes, nose, throat; corneal vacuolization; anor, nau, vomit, abd pain; derm	
p-Xylene	1,4-Dimethyl benzene	100	100	100	100	1.1	7	81	984	9	3.7	8.44	0.00003	0.47-0.5yes Dizz, excitement; drow; inco; stag gait; irrit eyes, nose, throat; corneal vacuolization; anor, nau, vomit, abd pain; derm	

(-): Unknown

c: Ceiling limit.

NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

Medical monitoring procedures for evidence of personnel exposure i.e. analyses specific to site not covered in general LMS physical:

N/A

Personnel monitoring procedures:

N/A

DECONTAMINATION AND DISPOSAL

Decontamination Procedures (contaminated personnel, surfaces, materials, instruments, equipment, etc.):

Wash overboots before removing. All equipment to be deconned
in lab before going to field. Field decon - see SOP for
procedure.

Disposal Procedures (contaminated equipment, supplies,
disposables, washwater.

Drill cuttings to be left at borehole. Decon water to be
poured on ground. All disposable clothing to be bagged and
returned to lab.

EMERGENCY PROCEDURES

In event of personnel exposure (skin contact, inhalation,
ingestion, specific proce-
dures for specific chemicals):

Immediately wash exposed area with water. Get to fresh air.

In event of personnel injury:

Monitor ABCs. Perform first aid if needed. Obtain
professional help if needed.

In event of potential or actual fire or explosion:

Evacuate personnel from field to meeting site (vacant
restaurant). HSO to account for all personnel. Contact
emergency services as required.

In event of potential or actual ionizing radiation exposure:

N/A

In event of environmental accident (spread of contamination outside sites):

Evacuate personnel. Stop spread of chemical if possible.

Notify LMS and client.

EMERGENCY SERVICES (complete here or have separate list available on-site)

<u>Location</u>	<u>Telephone</u>
Emergency Medical Facility	
<u>Nyack Hospital</u>	
<u>N. Midland Avenue</u>	
<u>Nyack, NY</u>	<u>(914) 358-6200</u>
Ambulance Service	
<u>S. Orangetown</u>	<u>359-3030</u>
Fire Department	
<u>Orangetown</u>	<u>358-9751</u>
<u>Orangeburg Volunteer</u>	<u>359-9636</u>

<u>Location</u>	<u>Telephone</u>
Police Department	
<u>Orangetown</u>	<u>359-2121, 359-3700</u>
<u>Orangetown Auxiliary</u>	<u>359-8388</u>
Poison Control Center	
<u>Nyack</u>	<u>353-1000</u>

PERSONNEL POTENTIALLY EXPOSED TO HAZARDOUS SUBSTANCES (As Applicable)

Personnel Authorized to Enter Site (specific conditions of site would preclude most LMS trained persons from entering site and would allow only certain personnel, list here)

1. N/A
2.
3.
4.
5.

ALTERNATIVE WORK PRACTICES

(Describe alternative work practices or instruments not specified in this form. Indicate work practices specified in the chapter for which proposed alternative work practices will serve as substitute.)

N/A

TASK-SPECIFIC LEVEL OF PROTECTION (attach table including specific description of protective gear)

See attached Table 1

SITE MAP

(Attach a site map. Map should be properly scaled and keyed to local landmarks.)

See Figure 1

TRAINING

(Provide description of minimum training, reference OSHA Sections).

2 persons 29 CFR 1910.120e(2)

AFFIDAVIT

All personnel who enter site must sign attached affidavit.
LMS personnel must also read and comply with LMS' generic HASP.

AFFIDAVIT

I, _____, (name) of _____
(company name) have read the Health and Safety Plan (HASP) for the
_____ (site description and project description).
I have also read the LMS generic HASP. I agree to conduct all on-
site work in conformity with the requirements of both HASPs. In
addition, I acknowledge that failure to comply with the designated
procedures in the Health and Safety Plans may lead to my removal
from the site.

Signed _____

Date _____

TABLE 1

TASK SPECIFIC LEVEL OF PROTECTION

TASK	LEVEL	DESCRIPTION
Drilling and Installation of Monitoring Well	D-C	Hard hat, safety shoes, safety glasses, overboots, coated Tyvek, latex gloves, nitrile gloves in case of contact with soil. Res- pirator on hand.
Groundwater Sampling	D-C	Same as above except coated Tyvek and nitriles optional in case of splash.

Action Levels: If HNU reads greater than 0.5 ppm above background
in breathing zone upgrade to Level C respiratory.
If HNU reads above 5 ppm in breathing zone above
background, stop work.

If encounter asbestos or asbestos-like material,
put on the respirator, coated Tyvek with hood,
overboots and nitriles taped to coated Tyvek.

DATE: 7 January 1991

FILE No. 535-005

TO: Jim Morrison

FROM: Eric Hince ECH

SUBJECT: Revision of LMS' Health & Safety Plan for Bergstol/Flintkote RI Subsurface Tunnel Inspection

Jim, enclosed is the most up-to-date HASP for the above-referenced job that was prepared by Stu and Karen Wright. This HASP was originally sent to Don Kassell for the drilling and sampling programs. Please check over the HASP to make sure it meets your standards, and include your standard confined space entry and Level B (both airline and SCBA) procedures. We should have some additional information this week, as we plan to drill a couple of holes through the concrete pad overlying the tunnels to determine the thickness of the concrete and to get some HNu and/or Draeger tube readings (talk to Joe Condello about this if you like).

For your information, I discussed the tunnel inspection with John Guzewich last week. The tentative plan is to open the tunnel at two separate locations, (e.g. rip or cut open a min. 3 ft x 3 ft opening), ventilate the hole, set up the Miller Retrieval tripod and have one Level B equipped person enter and visually inspect the tunnel within ≈ 25 ft of the opening (more or less, depending on the observed conditions). This task is tentatively scheduled for Thursday 17 January or Friday 18 January. John and I discussed three objectives: (1) Use the HNu, Draeger Tubes and CGI to obtain air quality data from the confined and un-ventilated portion of the tunnel, (2) obtain some photographs to document the physical condition of the tunnel, and (3) obtain samples of free product (fuel oil and/or solvent) from the base of the tunnel. John informed me that this task would most likely be performed by himself, Joe Condello or Don Henshaw, (I can't do it since I would need an in-house 24-hour Level B course, the scheduling of which would be unlikely before 17 January). In addition, our plan was to have two people on Level B standby outside the tunnel. Since we plan to attempt to vibracore at the site the same day, myself, Kevin McGuinness and Jim McKenna should also be present on site.

Thanks for your help. Please let me know if you will need more than 8 hours of your time, (plus an equivalent amount of clerical or word processing time), to revise the HASP. If you have any other questions or concerns, please call me at X263.

APPENDIX C

GROUND PENETRATING RADAR SURVEY

APPENDIX C

GROUND PENETRATING RADAR SURVEY

On 18 October 1990 GPR was employed to help determine whether subsurface structures were present at the proposed drilling locations in Block 754. The survey was conducted by Subsurface Consulting Ltd. of New Fairfield, Connecticut. Approximately 3000 linear feet of radar scans were run at 10-ft intervals, encompassing about 5000 ft² of area. The survey utilized 300- and 500-Mhz antennas. Although the site had been cleared of brush and small trees beforehand, the disturbance of the terrain and extent of concrete foundation limited the survey. Nothing was uncovered in the vicinity of the planned drilling that warranted any changes in the contemplated work.

On 16 November 1990 a second GPR survey was run in an area of the site where underground tanks were indicated, according to old insurance maps and interviews with a local resident. Additionally, the location of a possible tunnel near Greenbush Road was screened. Over 4800 linear feet of radar scans (300 and 500 Mhz) that encompassed an area of approximately 5500 ft² were studied. These scans were run over a pre-surveyed grid (see attached figure). The presence of the underground tanks and the tunnel were indicated by the GPR and were subsequently investigated further with a backhoe (see Section 2.6.1 of the Summary Report).

The radar images are archived with LMS project file.

APPENDIX D
SOIL GAS STUDY

APPENDIX D

SOIL GAS STUDY

D.1 CONSTRUCTION PROCEDURES

The soil gas points consisted of an aluminum slotted shield point connected to the surface with Teflon tubing. Concrete surfaces were first penetrated with a rotary hammer. The overburden was penetrated by driving a hardened stainless steel drive point with a slam bar and sliding hammer. The drive point was connected to the slam bar by stainless steel rods. As the point was advanced into the overburden, stainless steel rods were added in 3 ft increments. Having created an open hole to 4 ft, (or 10 ft) the drive system was withdrawn. The shield point was connected to the Teflon tubing, which was run up through the hollow center of the stainless steel drive rods, and the unit was reinserted to a maximum 4 ft. The stainless steel rods were withdrawn a second time, leaving the slotted shield point and Teflon tubing in place. The annular space around the shield point was backfilled with sand, and a hydrated bentonite seal was emplaced above to prevent atmospheric gases from flowing through the annular space. The end of the Teflon tubing was plugged with clay.

D.2 SAMPLING

The probes were evacuated with a vacuum pump to guarantee representative sampling. Based on the estimated diameter and estimated depth of the opening, three volumes of air were purged to ensure that representative interstitial gases were sampled. Percent LEL was measured with a combustible gas indicator. Oxygen concentrations were measured with the same equipment. Carbon dioxide concentrations in the soil gas were measured with direct reading colorimetric indicator tubes manufactured by National Draeger. A soil gas sample was collected with a 5 ml gas-tight syringe at the point where the pump was attached to the tubing. One probe yielded water that was sampled.

D.3 ANALYSES

This procedure is designed to provide semi-quantitative information on the concentration of volatile organic compounds (VOCs) in the water and soil gas samples.

D.3.1 Method Description

This method is a gas chromatography method that employs a field gas chromatograph (GC) with electron capture (ECD), photoionization (PID), and flame ionization (FID) detection of VOCs. The FID and PID detectors are linked in series, and because the PID is a non-destructive detector, it is placed first and the FID is placed second on the detector block. The ECD detector installed on the GC is set up with a separate injector and is used primarily to verify the presence or absence of chlorinated compounds. Following laboratory set-up and calibration, samples are collected in the field, transported to the on-site mobile laboratory, prepared for analysis and entered into the GC system. Soil gas samples are collected in the field and injected directly into the GC. Water samples are prepared by headspace and heating to 90°C, and a sample of the headspace gas is then injected into the GC. Output from the GC is plotted on integrators that identify calibration peaks via retention times, measure area of the peaks and calculate contaminant concentrations. Computers and printers are employed to generate field data reports.

D.3.2 Laboratory Equipment

The following equipment is used to carry out this method:

- HNU Model 421 temperature-programmable GC (HNU Systems, Newtown Highlands, MA) with photoionization detector, flameionization detector and electron capture detector along with carrier gases and other equipment necessary to run the GC.
- two Hewlett Packard Model 3396A analog signal integrators.
- VWR temperature controlled water bath.
- Ohaus Cent-O-Gram analytical balance.

- 10 μ l, 50 μ l syringes and 5000 μ l gastight syringes.
- analytical standards for the VOCs being analyzed.
- ultra-pure methanol.
- 40 ml VOC vials.
- volumetric flasks, beakers, pipets and other general laboratory supplies to accurately transfer, measure and dispense organic liquids.

All equipment is transported, stored, and operated in a clean, contamination-free mobile laboratory environment.

D.3.3 Instrument Set-Up

The analytical column used is a 1/8-in. x 6-in. stainless steel packed column with 1% sp-1000 on 60/80 Corbopack B (Supelco, Inc., Bellefonte, PA). The temperature program is:

Initial temperature - 80°C
 Holding time - 3.0 min
 Ramp rate - 15°C/min
 2nd temperature - 220°C
 2nd holding time - 25.0 min

After injector, detector, and oven temperature equilibration, the system is ready for sample injection.

One integrator each is connected to the FID, PID and ECD detectors and set up with the following parameters.

Attenuation = 7
 Threshold = 6
 Chart speed = 1.0 cm/min (default value)
 Peak width = 0.04 (default value)
 Area rej. = 0 (default value)

Timed events - time = 0 int. func. 8
 time = 33.0 STOP

OPT 2 - Run data storage
Store signal data
Device = M
Bunched data storage
No processed peak storage

Date and time is set through the DATE and TIME commands

After detectors have been turned on and the flame ignited on the FID, the detectors are zeroed via the AUTO ZERO on the GC. The GC-integrator system is now ready to accept the signal data.

The water bath is filled with water and heated to 90°C.

D.3.4 Calibration

Calibration of the GC system is carried out through injection of known concentrations of the compounds of interest. In cases where no sample data is present, the GC system is calibrated for as many of the Target Compound List (TCL) volatiles as possible. For water analyses, the GC is calibrated using headspace preparation, and for soil gas analyses, liquid standards are injected directly into the GC.

A standard list of volatile organic compounds is used in this method. This list includes many of the most common solvents, cleaning fluids and other industrial volatile organic chemicals. Mixed standards are prepared from pure compounds and diluted to the appropriate concentrations. Listed in Table 1 are the compounds and the standard concentrations to be used for calibration. The stock standard is made on a monthly basis and kept at the base laboratory at freezing temperatures. The secondary standard is made on a weekly basis and kept refrigerated when not in use. The working standards are made just prior to injection and used only once.

A clean 40 ml glass vial is filled with distilled water, then injected with 10 µl of the secondary standard, followed by an injection of 4 µl of the internal standard (internal standard mixture is a 200 mg/L solution of fluorobenzene) and shaken. Ten milliliters of headspace is created

TABLE 1. VOC STANDARD FORM

STANDARD CALCULATION FORM							
DATE:	5/5/89						
STANDARD TYPE:	SOIL GAS						
	Density	Dilution		Stock	Dilution		Working Std.
							Conc.
FORM I VOA from CLP	g/ml	Va (ml)	Vb (ml)	mg/L	Va (ml)	Vb (ml)	ug/L
Chloromethane	0.9159		25	0	0.005	500	0.0
Bromomethane	1.6755		25	0	0.005	500	0.0
Vinyl Chloride	0.9106		25	0	0.005	500	0.0
Chloroethane	0.8978		25	0	0.005	500	0.0
MethyleneChloride	1.3266	0.700	25	37,145	0.005	500	371.4
Acetone	0.7899	0.200	25	6,319	0.005	500	63.2
Carbon Disulfide	1.2632	0.100	25	5,053	0.005	500	50.5
1,1-Dichloroethene	1.2180	0.100	25	4,872	0.005	500	48.7
1,1-Dichloroethane	1.1757	0.100	25	4,703	0.005	500	47.0
1,2-Dichloroethene (total)	1.2565	0.100	25	5,026	0.005	500	50.3
Chloroform	1.4832	0.100	25	5,933	0.005	500	59.3
1,2-Dichloroethane	1.2351	0.300	25	14,821	0.005	500	148.2
2-Butanone	0.8050	0.150	25	4,830	0.005	500	48.3
1,1,1-Trichloroethane	1.3390	0.100	25	5,356	0.005	500	53.6
Carbon Tetrachloride	1.5940	0.100	25	6,376	0.005	500	63.8
Bromodichloromethane	1.9800		25	0	0.005	500	0.0
1,2-Dichloropropane	1.1560	0.100	25	4,624	0.005	500	46.2
Trichloroethene	1.4642	0.100	25	5,857	0.005	500	58.6
Dibromochloromethane	1.5482		25	0	0.005	500	0.0
1,1,2,-Trichloroethane	1.4397	0.100	25	0	0.005	500	0.0
Benzene	0.8765	0.150	25	5,259	0.005	500	52.6
Bromoform	2.8899		25	0	0.005	500	0.0
4-Methyl-2-Pentanone	0.8000	0.150	25	4,800	0.005	500	48.0
2-Hexanone	0.8120	0.150	25	4,872	0.005	500	48.7
Tetrachloroethene	1.6227	0.100	25	6,491	0.005	500	64.9
1,1,2,2-Tetrachloroethane	1.5953	0.100	25	0	0.005	500	0.0
Toluene	0.8669	0.150	25	5,201	0.005	500	52.0
Chlorobenzene	1.1058	0.100	25	4,423	0.005	500	44.2
Ethylbenzene	0.8670	0.150	25	5,202	0.005	500	52.0
Styrene	0.9060	0.000	25	0	0.005	500	0.0
m-xylene	0.8680	0.150	25	5,208	0.005	500	52.1
o&p-xylene	0.8802	0.150	25	5,281	0.005	500	52.8

by removing 10 ml of solution via a pipet. The vial is recapped and vigorously shaken for 1 min and placed in the water bath at 90°C for approximately 10 min. After temperature equilibration at 90°C, the vial is removed from the water bath, 1 ml of the headspace is withdrawn using a 5 ml gastight syringe and injected into the GC. The integrators are started simultaneously with the GC. Signals from the FID and PID are plotted on the two integrators and following the elution of the final peak, the data from the peaks are tabulated through the post-run data report. Through the PREP CAL dialogue on the integrator, response factors (amount/area ratio) are calculated for each compound of interest. The internal standard method of calibration is used, whereby the response factors for individual compounds are adjusted after each sample run depending on the size of the internal standard peak.

Standardization for soil gas is carried out in the same manner except liquid standards are injected into the GC rather than the headspace standards as described above. The system is calibrated for picograms to nanograms for each of the compounds of interest.

D.3.5 Sample Preparation

Soil Gas. Soil gas samples need no preparation after collection in the field. A 1-5 ml sample is injected directly into GC. Adjustments in the volume of sample injected are needed depending on the concentration of the compounds in the soil gas. Dilutions with ambient air are made in the syringe.

Water. Water samples need no special preparation unless a dilution is determined to be necessary (either through prior data, odor or other field measurements). Dilutions are made by pipetting the appropriate amount of sample out of the 40 ml vial into another 40 ml vial and bringing up to volume with distilled water. The sample to be analyzed is injected with 4 µl of the internal standard mixture and agitated to mix. Ten milliliters of headspace is created by uncapping, removing 10 ml of sample via a pipet and recapping. The sample is then shaken vigorously and set in the 90°C water bath for ten minutes. After equilibration at 90°C, the sample is removed and 1 ml of headspace withdrawn with a gastight syringe and injected into the GC.

Note: Provided the sample is opened, sample removed and recapped without a lot of agitation, there is no appreciable volatilization of the compounds from the surface of the open sample in that short period of time. However, care is exercised when handling the open sample in the lab.

D.3.6 Data interpretation

Sample peak retention times (RTs) are compared to the retention times of the standard peaks to identify contaminant compounds. Contaminant peaks with RTs identical (± 0.1 min) to the standard peaks are considered as positive hits and are reported by the integrator in the post-run report. However a second verification is made by the analyst to ensure the truth of the identification. The analyst verifies the "hits" using the following criteria:

- Retention times must match to within 0.1 minute of standard retention times. Extremely large peaks may have slightly different RTs because of the long duration of the elution of the peak.
- Verification of the peak may be made by comparing the peak response on the other detector using these criteria:
 - Peaks with significant areas should be detected on the FID detector when they are present on the PID.
 - Peaks detected on the FID detector may not be present on the PID chromatogram if the ionization potential (IP) is greater than 10.2 eV. Generally, saturated aliphatic and saturated halogenated compounds have IPs > 10.2 , i.e., butane and 1,1,1-TCA. As an example, gasoline will contain many saturated hydrocarbons that will not be detected on the PID detector. These hydrocarbons, penetenes, isopentanes, hexanes, etc., have IPs > 10.2 eV and will have responses on the FID only.
 - The PID detector has a 10-100X greater sensitivity for unsaturated compounds; aromatic and chlorinated ethenes. Samples peaks matching these compounds should show a greater sensitivity on the PID detector. If the FID detector shows a greater sensitivity for peaks matching the retention times of aromatic and unsaturated compounds, then the identification is considered a false identification and the analyst notes this with an "X" next to the CAL#. Using gasoline contamination as an example: some compounds in gasoline will have RTs that match the RTs for 1,2-dichloroethene and trichloroethene, however when the response (peak areas) are compared on the PID versus the FID, it is noted that FID peaks are much larger (usually noticeable in the concentration calculation by the integrator). Because the FID response is much greater (Usually 10-

100X) for saturated compounds than the PID response, these "hits" are considered false identification and the peak is labelled an unknown hydrocarbon.

Through the use of these criteria, a secondary qualification is made to verify or deny the identity of a compound peak in the sample.

D.3.7 Reporting

Peaks determined to be positive hits are marked with a check mark and any dilution or concentration factor is used to correct the listed concentration. The final concentrations are entered into the reporting form on the computer and field data reports are printed. The final concentrations are calculated using the following procedures.

Water. If no dilution is made of the water sample, then the $\mu\text{g/L}$ concentrations on the integrator report can be read directly as sample concentration. If a dilution is made then these values are simply multiplied by the dilution factor.

Example: 100 $\mu\text{g/L}$ of toluene is measured in a sample. The sample was prepared by diluting 200 μl of sample into a 40 ml vial.

$$\begin{aligned} 100 \mu\text{g/L} * 0.04 \text{ L}/200 \mu\text{l} &= 0.02 \mu\text{g toluene}/\mu\text{l} = 0.02 \text{ mg/ml} \\ 0.02 \text{ mg/ml} &= 20 \mu\text{g/ml} = \mathbf{20 \text{ mg/L or } 20 \text{ ppm}} \end{aligned}$$

Soil Gas. Concentrations of contaminants are reported in the post-run report as nanograms of compound. These weights of compounds are converted into a weight per volume unit using the volume of soil gas injected into the GC. The nanograms of compound is divided by the volume of soil gas injected and the units are corrected to read either μg or mg per cubic meter of soil gas. All of these calculations are carried out on the chromatogram and the final values are entered into the appropriate report for the matrix being analyzed.

D.3.8 Quality Control

Quality control data is generated throughout the sample analyses to verify that the concentrations and the identifications are correct. The following are the quality control steps taken to ensure the integrity of the data generated.

Standards. Initial standardization of the instruments are carried out through preparation of known concentrations of the compounds of interest. In some cases a multi-level calibration is carried out.

Blanks. Blank analyses are run each day to determine the presence and level of any contamination from the glassware or any other equipment that may affect the analyses.

Duplicates. Duplicate analyses are run on 20% of all samples to verify the precision of the analyses.

Matrix Spikes. Matrix spike analyses are carried out on 20% of all samples to ensure adequate recovery and quantification of the contaminants in the samples.

QC Standards. Outside standards are run at least once per day to verify the accuracy of the calibration of the instrument.

Internal Standards. Internal standards are added to all samples to adjust the concentration calculation for lower recoveries due to sample interferences and to verify that all the instruments are running properly.

D.4 FIELD INVESTIGATION

The soil gas survey was conducted on 25 October 1990¹ to help identify the source of 1,1,1-trichloroethane found at MW-18. Analyses were conducted on site by Tetra-K Testing of Westfield, Massachusetts with the equipment previously described.

Attempts were made to complete 10 probes. Three (SG-1, SG-2, and SG-3) were abandoned because of the inordinate amount of time it took to penetrate the ground with a rotary hammer. Four probes yielded no sampleable gas because the surficial soil was wet and tight; one of these probes (SG-16) produced sufficient water for a VOC test (trichloroethylene and perchloroethylene were reported present at concentrations below the method quantification limits of 5 and 10 µg/l, respectively).

Gas samples were collected at SG-17, SG-18, and SG-30. Only the SG-18 sample contained detectable concentrations of VOCs:

Perchloroethylene	0.36 ppm
Benzene	Present below 0.01 ppm
Xylene	Present below 0.15 ppm

The locations of these probes are shown in Figure 2-1 of the summary report.

Originally, 30 soil gas probes had been planned for the investigation. However, because of the wetness and tightness of the soils and the low concentrations present, this portion of the program was curtailed.

The laboratory report and field data sheets follow.

¹Note: 28 October 1990 was incorrectly stated in the Summary Report

corrected 10/20/21

SOIL GAS SAMPLING FIELD DATA SHEET FOR BERGSTOL

LMS JOB #: 535-002

LOCATION: Orangeburg

WEATHER/TEMP: 77

02LEL

[illegible]

TETRA·K TESTING

Mr. Eric Hince
LMS Engineers
One Blue Hill Plaza
Pearl River, NY 10965

January 8, 1991

Dear Mr. Hince,

Enclosed please find the final data report from the soil gas analysis conducted at the Bergstol/Feldman Site on October 25, 1990.

Two of the soil gas probes were set below the water table, therefore water samples were collected from the probes and analyzed for volatile organic compounds. I have also enclosed a copy of the field data sheet.

If you have any questions or need additional information, do not hesitate to call.

Sincerely



Stephen Knollmeyer
Mobile Laboratory Supervisor

SLK:mac
encl.

TETRA-K TESTING

VOLATILE ORGANICS REPORT

CLIENT: LMS Engineers One Blue Hill Plaza Pearl River, NY 10965	Date: 1/8/90 Sample ID: SG-16(water) Sample No: n/a Matrix: Water Dilution Factor: 1 Collection Date: 10/25/90 Reciept Date: 10/25/90 Analysis Date: 10/25/90
Project: Feldman Property Project Number: O-043	

RESULTS:

COMPOUND	Detection Limit ug/L	Result ug/L	COMPOUND	Detection Limit ug/L	Result ug/L
Methylene Chloride	50	ND	Dibromochloromethane	100	ND
Vinyl chloride	50	ND	1,1,2,-Trichloroethane	10	ND
1,1-Dichloroethene	5	ND	trans-1,3-Dichloropropene	10	ND
1,1-Dichloroethane	5	ND	1,1,2,2-Tetrachloroethane	50	ND
c/t-1,2-Dichloroethene	5	ND	Tetrachloroethene	10	ND
Chloroform	5	ND	Toluene	5	ND
1,2-Dichloroethane	20	ND	Chlorobenzene	5	ND
1,1,1-Trichloroethane	10	ND	Ethylbenzene	5	ND
Carbon Tetrachloride	10	ND	m-xylene	5	ND
Bromodichloromethane	100	ND	o&p-xylene	5	ND
1,2-Dichloropropane	10	ND	Acetone	100	ND
cis-1,3-Dichloropropene	10	ND	2-Butanone	50	ND
Trichloroethene	5	ND	4-methyl 2-pentanone	50	ND
Benzene	5	ND	2-hexanone	50	ND

ND = Not detected PR = Present but not calibrated for < = less than > = greater than

METHOD:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph equipped with PID, FID and ELCD detectors. The sample preparation method was EPA Method 3810; headspace screening method. The results were calculated using the internal standard method.

COMMENTS:

Signed: Steph Kadlucz

Reviewed by: KES 1/9/91

Westfield Executive Park
53 Southampton Road
Westfield, MA 01085
TEL. 413-562-9193
FAX. 413-562-5317

TETRA-K TESTING

VOLATILE ORGANICS REPORT

Client:	Date:	1/8/91
LMS Engineers	Sample ID:	SG-17
One Blue Hill Plaza	Matrix:	soil gas
Pearl River, NY10965	Injection volume (ml):	5
Project: Feldman Property	Collection Date:	10/25/90
Project Number: O-043	Analysis Date:	10/25/90

RESULTS:

COMPOUND	DETECTION LIMIT mg/cu. m.	DETECTION LIMIT ppb v/v	RESULT mg/cu. m.	RESULT ppb v/v
Methylene Chloride	0.1	20	ND	ND
Vinyl Chloride	0.1	20	ND	ND
1,1-Dichloroethene	0.1	15	ND	ND
1,1-Dichloroethane	0.1	15	ND	ND
cis/trans-1,2-Dichloroethene	0.1	15	ND	ND
Chloroform	0.1	10	ND	ND
1,2-Dichloroethane	0.2	40	ND	ND
1,1,1-Trichloroethane	0.6	100	ND	ND
Carbon Tetrachloride	0.1	15	ND	ND
Bromodichloromethane	0.1	10	ND	ND
1,2-Dichloropropane	0.1	15	ND	ND
cis-1,3-Dichloropropene	0.1	15	ND	ND
Trichloroethene	0.1	15	ND	ND
Benzene	0.3	100	ND	ND
Dibromochloromethane	0.1	10	ND	ND
1,1,2-Trichloroethane	0.1	10	ND	ND
trans-1,3-Dichloropropene	0.1	15	ND	ND
1,1,2,2-Tetrachloroethane	0.1	15	ND	ND
Tetrachloroethene	0.1	10	ND	ND
Toluene	0.4	100	ND	ND
Chlorobenzene	0.5	100	ND	ND
Ethylbenzene	0.5	100	ND	ND
o-xylene	0.7	150	ND	ND
m & p-xylene	0.7	150	ND	ND
Acetone	0.3	100	ND	ND
2-butanone	0.3	100	ND	ND
4-Methyl 2-pentanone	0.4	100	ND	ND
2-Hexanone	0.4	100	ND	ND

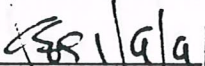
ND = Not detected PR = Present but not calibrated for < = less than > = greater than

METHOD:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ELCD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

COMMENTS:

Signed: 

Reviewed by: 

Westfield Executive Park
53 Southampton Road
Westfield, MA 01085
TEL. 413-562-9193
FAX. 413-562-5317

TETRA·K TESTING

VOLATILE ORGANICS REPORT

CLIENT:

LMS Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Date: 1/8/90**Sample ID:** SG-30(water)**Sample No:** n/a**Matrix:** Water**Dilution Factor:** 1**Collection Date:** 10/25/90**Reciept Date:** 10/25/90**Analysis Date:** 10/25/90

Project: Feldman Property
Project Number: O-043

RESULTS:

COMPOUND	Detection Limit ug/L	Result ug/L	COMPOUND	Detection Limit ug/L	Result ug/L
Methylene Chloride	50	ND	Dibromochloromethane	100	ND
Vinyl chloride	50	ND	1,1,2,-Trichloroethane	10	ND
1,1-Dichloroethene	5	ND	trans-1,3-Dichloropropene	10	ND
1,1-Dichloroethane	5	ND	1,1,2,2-Tetrachloroethane	50	ND
c/t-1,2-Dichloroethene	5	ND	Tetrachloroethene	10	ND
Chloroform	5	ND	Toluene	5	ND
1,2-Dichloroethane	20	ND	Chlorobenzene	5	ND
1,1,1-Trichloroethane	10	ND	Ethylbenzene	5	ND
Carbon Tetrachloride	10	ND	m-xylene	5	ND
Bromodichloromethane	100	ND	o&p-xylene	5	ND
1,2-Dichloropropane	10	ND	Acetone	100	ND
cis-1,3-Dichloropropene	10	ND	2-Butanone	50	ND
Trichloroethene	5	ND	4-methyl 2-pentanone	50	ND
Benzene	5	ND	2-hexanone	50	ND

ND = Not detected PR = Present but not calibrated for < = less than > = greater than

METHOD:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph equipped with PID, FID and ELCD detectors. The sample preparation method was EPA Method 3810; headspace screening method. The results were calculated using the internal standard method.

COMMENTS:**Signed:****Reviewed by:**

Westfield Executive Park
53 Southampton Road
Westfield, MA 01085
TEL: 413-562-9193
FAX: 413-562-5317

WEATHER/TEMP: Sunny 60°F

[illegible]

M Steve Knollmeyer OF Tetra-K
from E.C. Hince

MEMORANDUM OF
CONVERSATION

JOB: Bergstal/FlintKote RI

DATE: 1/17/91

JOB NUMBER: 535-005

TIME: 1045

CONCERNING: Soil Gas Data Report

? Did we get a trace hit on a head space (GW)

AND DECIDED: Sample near Greenbush Road.

Original sample SG-16 (Head space)

showed ≤ 1 ppb TCE

→ Duplicate of SG-16, identifiable
peaks TCE = 2.0 ppb PCE = 2.7 ppb

Steve would call these trace. ("J" - there, but
below detection limits).

CC:

SIGNED: ECH

CC:

SIGNED:

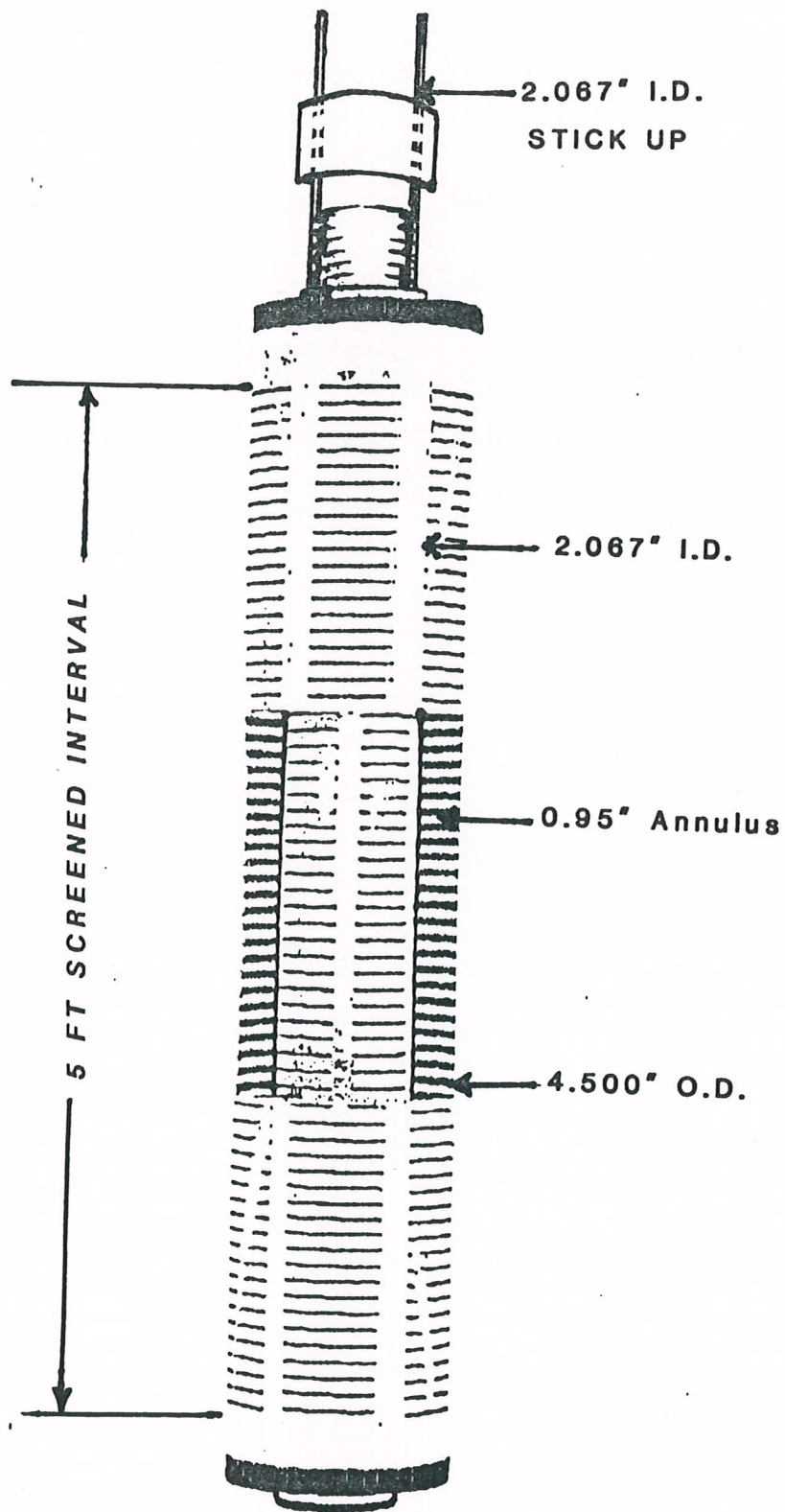
B-21	86.58
PP-1	86.02
PP-2	94.34

The well construction logs are attached. Some well construction logs show two static water level measurements. In such cases, the water level with the graphic symbol is the level after development; the one with the well data is the level after construction. Construction involved standard hollow stem auger practices for shallow wells. Materials, split spoons and augers were steam cleaned between holes. Augers had 4.25 in I.D, and 8 in O.D. for the monitoring well drilling and 6 in O.D. for the piezometer construction.

The installation of a prepacked well within a backhoe test pit is a non-standard procedure, which is detailed below. A 5 ft section of prepacked dual wall well screen (2.067 in. I.D.) combines inner well screen (0.10 slot), filter #0 sand pack and outer well screen (4.5 in. O.D.) in one integrated unit which was installed using a temporary 10 ft section 8 in. I.D. PVC casing. Following the excavation, the temporary casing was quickly positioned at one side of the pit close to the vertical side wall. The hole was backfilled with soil to 5 ft below grade. One ft of sand was added before installing the prepacked screen well inside the temporary casing. The annular space between the casing and the prepacked well was filled with a second layer of #00 sand pack to 1 ft above the screen. The prepacked well bottom was placed 3-4 ft below the apparent top of the water table.

The temporary casing was slowly removed as additional sand pack was placed into the temporary casing. The prepacked well was equipped with 2 in. I.D. PVC casing stick up to 2 ft above grade and the soil was compacted tight around the well.

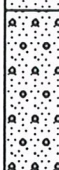
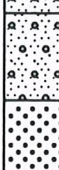
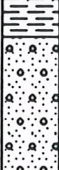
The overburden (primarily silt and clay) maintained an open 8 in. hole after removing the temporary casing. This allowed the remaining upper part of the hole to be grouted to the surface.



PVC PRE-PAC

TEST BORING: MW-22

Project Name <u>Flintkote</u>	Date <u>12 Nov.90</u>
Project No. <u>535-005</u>	Total Depth <u>16 feet</u>
Client <u>Berbor Realty.</u>	Hole Diameter <u>8 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>91.76 feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>4.98 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									
	4	100	00	00	1.0	A	0		Cd Dark gray v.f. silty sand , some clay, little gravel size fragementes, trace of wood (moist) .
									Ct Concrete mixed with top soil (moist) .
2									
									SS Red-Brown m.-f. loose sand, some silt (wet) .
4	3	4	12	16	1.2	A	0		
									SS Rd-Brown silty sand, some m. sand, little oil sheen (wet)
6	14	18	17	14	1.6	A	0		
									SS Red-Brown silty sand with oil stain, some clay, little m. sand (wet) .
									GS Geenish f. sand with mica ,some red-brown silty sand (wet)
8	7	11	11	33	1.6	A	0		
									SS Brown m-f. sand, some silt and clay, no remarks of oil.
10	13	42	24	13	1.1	A	0		
									SS The same above (wet) .
12	2	7	31	45	1.4	A	0		
									SS Light brown f. sand , some silt , little gravel size stones (wet) .
									Ys Yellow v.f. silty sand mixed with weathered rocks (wet) .
14	12	19	38	35	1.8	A	0		
									SS Rd-Brown silty sand , some weathered greenish fragementes
16									

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TEST BORING: MW-24

Project Name <u>Flintkote</u>		Date <u>13 Nov 90</u>	
Project No. <u>535-005</u>		Total Depth <u>12 feet</u>	
Client <u>Berbor Realty.</u>		Hole Diameter <u>8 in.</u>	
Location <u>Orangeburg, NY</u>		Ground Surface Elevation <u>90 feet</u>	
Geologist <u>Tarik Zarrouk</u>		Depth to Water <u>6 feet</u>	

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	4-6"	6-12"	12-18"	18-24"					
0									Cd Poor recovery, Top soil mixed with crushed fragments of bricks and some sand (dry).
2	10	7	100	00	.20	A	0		Cd Top Soil gray v.f. sand, some silt, little roots, and gravel (dry).
4	1	200	100	17	.8	A	0		Cd The same above (moist).
6	8	8	9	7	.8	A	0		SS Red-Brown silty f. sand getting finer toward the bottom with some clay (wet).
8	35	3	24	17	.9	A	0		cl Red-brown clay, some silt, little v.f. sand (wet).
10	6	3	6	12	1.2	A	0		cl The same above (wet).
12									

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TEST BORING: B-5

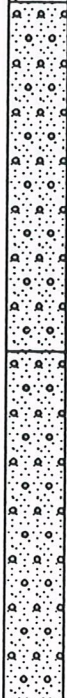
Project Name <u>Flintkote</u>					Date <u>9 Nov 90</u>				
Project No. <u>535-005</u>					Total Depth <u>4 feet</u>				
Client <u>Berbor Realty.</u>					Hole Diameter <u>8 in.</u>				
Location <u>Orangeburg, NY</u>					Ground Surface Elevation <u>93 feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>0 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION	
	Blows on Sampler				Recovery	Instrmt.	Reading			
	0-6"	6-12"	12-18"	18-24"						
0									Cd	Top soil mixed with crushed fragments of bricks and some sand (dry)
	5	40	12	30	1.3	A	0			
2									Cd	Poor recovery, crushed stones little sand. mixed with concrete , augered to 4 ft. (dry) .
4										

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TEST BORING: B-6

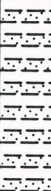
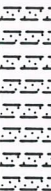
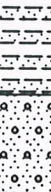
Project Name <u>Flintkote</u>					Date <u>12 Nov 90</u>				
Project No. <u>535-005</u>					Total Depth <u>8 feet</u>				
Client <u>Berbor Realty.</u>					Hole Diameter <u>6 in.</u>				
Location <u>Orangeburg, NY</u>					Ground Surface Elevation <u>89.23 feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>1.45 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Anstrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									Cd Poor recovery, Top soil mixed with crushed fragments of bricks and some sand. (MOIST)
2	5	100	00	00	.20	A	0		
4	7	66	25	13	1.4	A	0		
6	23	12	13	12	1.3	A	0		SS Red-brown silty sand, some clay, little m.-c. sand and gravel mixed with oil. (WET)
8									SS Red-Brown silty sand, some clay, soil saturated with oil. (WET)

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TEST BORING: B-11

Project Name <u>Flintkote</u>	Date <u>08 Nov 90</u>
Project No. <u>535-005</u>	Total Depth <u>14 feet</u>
Client <u>Berbor Realty.</u>	Hole Diameter <u>6 in.</u>
Location <u>Orangeburg, NY</u>	Ground Surface Elevation <u>87.76 feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>2.95 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instr.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									CSo Dark gray top soil mixed with f. sand, roots, and gravel Trace of coarse sand . (Saturated with oil) .
1	1	4	10	17	1.5	A	0		
2	8	4	4	5	1.9	A	0		
2									CSo The same above (moist) .
3									
4	4	12	14	14	1.5	A	0		
4									SS Red-Brown silty sand, some m. sand mixed with Oil (wet) .
5									
6	6	12	14	6	1.9	A	0		
6									SS Red-Brown m. sand , some silt and f. sand mixed with Oil (wet) .
7									
8	15	9	9	7	1.5	A	0		
8									SS Red-Brown m.-c. sand , some gravel, little silt and clay mixed with oil (wet) .
9									
10	10	9	12	14	1.2	A	0		
10									SS The same above , increasing % of clay (wet) .
11									
12	14	19	19	31	1.7	A	0		
12									SS The same above , increasing % of clay (wet) .
13									
14									

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TEST BORING: B-12

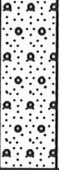
Project Name <u>Flintkote</u>					Date <u>11 Nov 90</u>				
Project No. <u>535-005</u>					Total Depth <u>14 feet</u>				
Client <u>Berbor Realty</u>					Hole Diameter <u>6 in.</u>				
Location <u>Orangeburg, NY</u>					Ground Surface Elevation <u>85.23 feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>6 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									CS Dark gray top soil mixed with f. sand, roots, and gravel Trace of coarse sand (moist)
	1	2	5	5	.30	A	0		
2	6	7	9	15	1.1	A	0		
4	7	18	62	43	1.0	A	0		
6	23	27	13	9	1.1	A	0		
8	9	15	20	22	1.2	A	0		
10	14	25	25	23	1.6	A	0	SS Red-brown silty sand, some clay, little weathered schist (moist to wet).	
12	13	95	23	20	1.5	A	0		
14									

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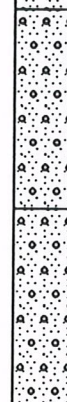
TEST BORING: B-14

Project Name <u>Flintkote</u>		Date <u>05 Nov. 90</u>	
Project No. <u>535-005</u>		Total Depth <u>16 feet</u>	
Client <u>Berbor Realty.</u>		Hole Diameter <u>6 in.</u>	
Location <u>Orangeburg, NY.</u>		Ground Surface Elevation <u>85.18 feet</u>	
Geologist <u>Tarik Zarrouk</u>		Depth to Water <u>2.53 feet</u>	

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instruc.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									CS Poor recovery of top soil and ashes , Loose materials and little gravels and roots (moist) .
2	5	7	7	8	.20	A	0		SS Brown m. to f.sand, some silt, little clay Trace of gravels and roots (moist) .
4	7	70	28	60	1.66	A	0		SS Dark Brown-Red m.-f.sand with some roots and leaves (wet) .
6	12	109	33	31	1.2	A	0		QT Weathered crushed quartz and m.-c.sand, some f.sand (wet) .
8	32	22	12	17	1.0	A	0		SS Red- Brown f. sand with thin layers of very weathered coarse sand , some gray gravels (wet) .
10	2	8	9	15	1.6	A	0		SS Red-Brown silty f. sand with some c. sand (wet) .
12	27	22	15	21	1.2	A	0		SS The same above. (wet) .
14	10	8	9	20	1.1	A	0		SS The same above (wet) .
16									SS Red-Brown m.-f. sand, some silt and c. sand with weathered crushed green quartz and light sandstone (wet) . <i>Lawler, Matusky & Skelly Engineers</i>

TEST BORING: B-17

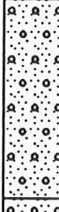
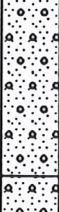
Project Name <u>Flintkote</u>		Date <u>07 Nov 90</u>	
Project No. <u>535-005</u>		Total Depth <u>14 feet</u>	
Client <u>Berbor Realty</u>		Hole Diameter <u>6 in.</u>	
Location <u>Orangeburg, NY</u>		Ground Surface Elevation <u>92.59 feet</u>	
Geologist <u>Tarik Zarrouk</u>		Depth to Water <u>5.13 feet</u>	

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									Cd Construction Debris and concrete mixed with asphalt Auger to 6 ft.
2									
4									
6	7	6	12	11	1.1	A	0		
8	6	10	6	14	1.2	A	0		
10	6	22	18	13	.90	A	0		SS Red-Brown silty f. sand, little m. sand, trace of gravel size stones. (moist)
									The same above (moist).
12	63	77	10	8	1.5	A	0		SS Red-brown silty v.f. sand mixed with fragments of weathered siltstone-sandstone (wet)
14									SS The same above.

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TEST BORING: B-18

Project Name <u>Flintkote</u>	Date <u>07 Nov 90</u>
Project No. <u>535-005</u>	Total Depth <u>14 feet</u>
Client <u>Berbor Realty.</u>	Hole Diameter <u>6 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>88.93 feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>2.94 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION		
	Blows on Sampler				Recovery	Instrmt.	Reading				
	0-6"	6-12"	12-18"	18-24"							
0									Cd Poor recovery , Top soil mixed with crushed fragementes of bricks and some sand (dry) .		
	4	8	78	44	.20	A	0				
2	4	6	100	00	.20	A	0				
4	5	5	4	5	1.3	A	0		SS Red-brown silty sand , some clay, little m.-c. sand and gravel (wet)		
6	5	15	36	17	1.3	A	0				
8	8	12	16	17	1.1	A	0				
10	12	19	16	19	1.0	A	.4		SS Red-Brown silty f. sand and is getting coarser toward the bottom (wet) .		
12	8	10	14	17	0.2	A	0				
14											SS Red-Brown m.-f. sand, little c. sand and silt, trace of clay (wet) .
									SS Poor recovery of wet red-brown m. sand.		

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TEST BORING: B-19

Project Name Flintkote Date 06 Nov 90
 Project No. 535-005 Total Depth 14 feet
 Client Berbor Realty. Hole Diameter 6 in.
 Location Orangeburg, NY Ground Surface Elevation 86.97 feet
 Geologist Tarik Zarrouk Depth to Water 3.35 feet

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									
2									
4	5	18	59	20	1.3	A	0		Cd Poor recovery, Top soil mixed with crushed fragments of bricks and some sand. No sample was taken and augered to depth of 3 ft.
6	25	40	18	22	1.3	A	0		YS Interbedded Yellow f. sand and red-brown silty sand some m.-f. sand at the bottom. (wet)
8	3	17	42	15	1.0	A	0		SS Red-brown silty sand, little gravel size stone, trace of clay. (wet)
10	14	16	18	14	1.3	A	0		SS The same above. (wet)
12	12	6	4	9	.6	A	0		SS Red-Brown m.-f. sand, little c. sand and silt, trace of clay. (very wet)
14									SS The same above. (wet)
									Lawler, Matusky & Skelly Engineers

TEST BORING: B-20

Project Name <u>Flintkote</u>					Date <u>06 Nov 90</u>				
Project No. <u>535-005</u>					Total Depth <u>13 feet</u>				
Client <u>Berbor Realty.</u>					Hole Diameter <u>6 in.</u>				
Location <u>Orangeburg, NY</u>					Ground Surface Elevation <u>85.17 feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>3.54 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION	
	Blows on Sampler				Recovery	Instrmt.	Reading			
	0-6"	6-12"	12-18"	18-24"						
0	3	13	17	23	1.2	A	0		Cd	Dark gray top soil, some leaves and roots, mixed with some black coal and ash materials. (dry)
2	12	7	12	9	1.4	A	0		SS	Red-brown silty sand, some clay, little m.-c. sand and gravel, trace of ash. (moist)
4	7	15	32	29	1.1	A	0		SS	Red-Brown silty sand, some clay, little gravel size crushed quartz. (wet)
6	22	98	36	34	.7	A	0		SS	Red-Brown silty f. sand, some crushed rocks, little m. sand and clay. (wet)
8	9	11	12	11	1.3	A	0		SS	The same above.
10	33	24	13	26	1.5	A	0		Sy	Yellow m.-f. loose sand, interbedded with red- brown silty sand. (wet)
12									Sy	The same above.

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TEST BORING: B-21

Project Name <u>Flintkote</u>					Date <u>06 Nov 90</u>				
Project No. <u>535-005</u>					Total Depth <u>13 feet</u>				
Client <u>Berbor Realty.</u>					Hole Diameter <u>6 in.</u>				
Location <u>Orangeburg, NY</u>					Ground Surface Elevation <u>85.05 feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>4.3 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION	
	Blows on Sampler				Recovery	Instrmt.	Reading			
	0-6"	6-12"	12-18"	18-24"						
0	1	6	11	13	1.6	A	0		Dark gray top soil, some leaves and roots, mixed with some black coal and ash materials (dry).	
2	9	7	14	9	1.2	A	0		SS	Red-brown silty sand, some clay, little m.-c. sand and gravel, trace of ash (dry).
4	8	18	33	39	1.7	A	0		SS	Red-Brown silty sand, some clay, little gravel size crushed quartz (moist).
6	81	114	31	33	.8	A	0		SS	Red-Brown silty f. sand, some crushed rocks, little m. sand and clay (wet).
8	3	8	13	15	1.8	A	0		SS	The same above.
10	21	22	23	22	1.5	A	0		Sy	Yellow m.-f. loose sand, interbedded with red- brown silty sand (wet).
12									Sy	The same above. <i>Lawler, Matusky & Skelly Engineers</i>

WELL LOG FOR: MW-22

Project Name <u>Flintkote</u>	Total Depth <u>16 ft</u>
Project No. <u>535-005</u>	Date Drilled <u>12 Nov. 90</u>
Location <u>Orangeburg, NY.</u>	Well Completion Date <u>12 Nov 90</u>
Geologist <u>Tarik Zarrouk</u>	Date Developed <u>21 Nov 90</u>
Surface Elevation <u>91.76 ft</u>	Top of Casing Elevation <u>92.26 ft</u>

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0	The diagram shows a well casing extending from the surface down to 14 feet. A screen interval is indicated from approximately 2.5 feet to 13.5 feet. The area between the casing and the borehole is filled with sand. A bentonite seal is shown at the surface. A water level symbol is present at approximately 4.3 feet depth.			Client: Berbor Realty. Driller: KENDRICK Drilling Co., Inc. Type of Well: Overburden Static Water Level: 4.3 ft. Date: 8 Nov 90 Measuring Point: Below grade Total Well Depth: 13 ft Developing Method: Centraifugl pump.
2				DRILLING METHOD: Type: Hollow stem auger Casing: Outer diameter: 8 in.
4				SAMPLING METHOD: Type: Split-spoon Weight: 140 lb Fall: 30 in. Diameter: 2 in. Interval: 2 ft
6				RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 4.5 ft (includes stick-up) Joint Type: Threaded flush Diameter: 2 in.
8				SCREEN: Material: PVC schedule 40 Slot Size: 0.001 in. Diameter: 2 in. Stratigraphic Unit: Overburden Length: 10 ft
10				FILTER PACK: Sand Grade: No.00 Amount: 300 lb Interval: 14-2 ft
12				SEALS (S): Type: 3/8 in. bentonite pellets Interval: 2-1 ft Type: Bentonite Plug. Interval: 14-16 ft Type: Concrete Interval: 1-surface
14				LOCKING CASING: Yes
16				NOTES:

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WELL LOG FOR: B-6

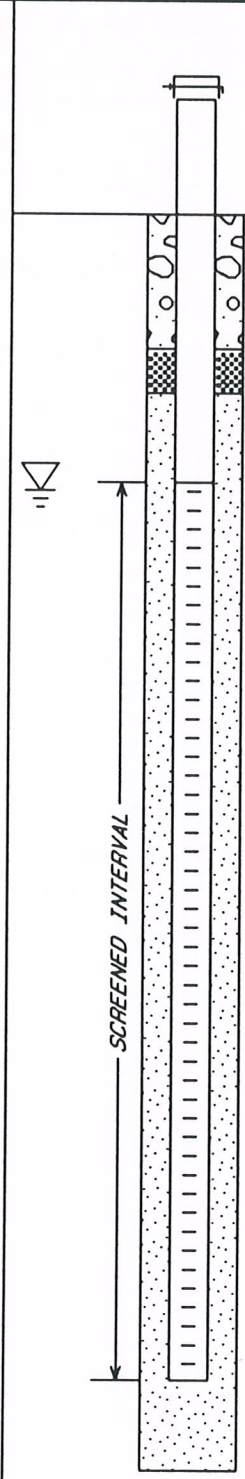
Project Name <u>Flintkote</u>	Total Depth <u>8 ft</u>
Project No. <u>535-005</u>	Date Drilled <u>12 Nov 90</u>
Location <u>Orangeburg, NY</u>	Well Completion Date <u>12 Nov 90</u>
Geologist <u>Tarik Zarrouk</u>	Date Developed <u>26 Nov 90</u>
Surface Elevation <u>89.23 ft</u>	Top of Casing Elevation <u>ft</u>

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0				Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 1.45 Date: 07 Nov 90 Measuring Point: Below grade Total Well Depth: 8 ft Developing Method: Centrifugal pump DRILLING METHOD: Type: Hollow stem auger Casing: Outer diameter: 6 in. SAMPLING METHOD: Type: Split-spoon Weight: 140 lb Fall: 30 in. Diameter: 2 in. Interval: 2 ft RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 4 ft (include stick -up) Joint Type: Threaded flush Diameter: 1.25 in. SCREEN: Material: PVC schedule 40 Slot Size: 0.010 in. Stratigraphic Unit: Overburden Diameter: 1.25 in. Length: 10 ft FILTER PACK: Sand Grade: No.0 Amount: 250 lb Interval: 8-1.5 ft SEALS(S): Type: 3/8 in. bentonite pellets Interval: 1.5-.5 ft Type: Interval: Type: Concrete Interval: .5-surface LOCKING CASING: Yes NOTES:
2				
4				
6				
8				

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WELL LOG FOR: B-9

Project Name	Flintkote	Total Depth	14 ft
Project No.	535-005	Date Drilled	08 Nov.90
Location	Orangeburg, NY.	Well Completion Date	08 Nv 90
Geologist	Tarik Zarrouk	Date Developed	26 Nov 90
Surface Elevation	85.85 ft	Top of Casing Elevation	87.35 ft

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0				Client: Berbor Realty. Driller: KENDRICK Drilling Co., Inc. Type of Well: Overburden Static Water Level: 3.1 ft. Date: 8 Nov 90 Measuring Point: Below grade Total Well Depth: 13 ft Developing Method: Centraifugl pump/Hand surged
2			CT	DRILLING METHOD: Type: Hollow stem auger Casing: Outer diameter: 6 in.
			YS	SAMPLING METHOD: Type: Split-spoon Weight: 140 lb Fall: 30 in. Diameter: 2 in. Interval: 2 ft
4			SS	RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 4.5 ft (includes stick-up) Joint Type: Threaded flush Diameter: 1.25 in.
			YS	SCREEN: Material: PVC schedule 40 Slot Size: 0.010 in. Stratigraphic Unit: Overburden Diameter: 1.25 in. Length: 10 ft
6			YS	FILTER PACK: Sand Grade: No.0 Amount: 300 lb Interval: 14-2 ft
				SEALS (S): Type: 3/8 in. bentonite pellets Interval: 2-1.5 ft Type: Interval: Type: Concrete Interval: 1.5-surface
8			SS	LOCKING CASING: Yes NOTES: Measured SWL was higher than what was indicated in soil.
10			SS	
12				
14				<i>Lawler, Matusky & Skelly Engineers</i>

WELL LOG FOR: B-11

Project Name <u>Flintkote</u>	Total Depth <u>14 ft</u>
Project No. <u>535-005</u>	Date Drilled <u>08 Nov 90</u>
Location <u>Orangeburg, NY</u>	Well Completion Date <u>11 Nov 90</u>
Geologist <u>Tarik Zarrouk</u>	Date Developed <u>05 Feb 91</u>
Surface Elevation <u>87.76 ft</u>	Top of Casing Elevation <u>90.70 ft</u>

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
				Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 2.95 ft Date: 08 Nov 90 Measuring Point: Below grade Total Well Depth: 13 ft Developing Method: Master flex pump DRILLING METHOD: Type: Hollow stem auger Casing: Outer diameter: 6 in. SAMPLING METHOD: Type: Split-spoon Weight: 140 lb Fall: 30 in. Diameter: 2 in. Interval: 2 ft RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 1.25 in. Length: 5.94 ft (include stick-up) Joint Type: Threaded flush SCREEN: Material: PVC schedule 40 Diameter: 1.25 in. Slot Size: 0.010 in. Length: 10 ft Stratigraphic Unit: Overburden FILTER PACK: Sand Grade: No.0 Amount: 300 lb Interval: 14-2 ft SEALS(S): Type: 3/8 in. bentonite pellets Interval: 2-1 ft Type: Interval: Type: Concrete Interval: 1-surface LOCKING CASING: Yes NOTES: Soil mixed, saturated with oil from the surface to 12 ft.
0				
2				
4				
6				
8				
10				
12				
14				

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WELL LOG FOR: B-12

Project Name <u>Flintkote</u>		Total Depth <u>14 ft</u>	
Project No. <u>535-005</u>		Date Drilled <u>11 Nov 90</u>	
Location <u>Orangeburg, NY</u>		Well Completion Date <u>11 Nov 90</u>	
Geologist <u>Tarik Zarrouk</u>		Date Developed <u>26 Nov 90</u>	
Surface Elevation <u>85.23 ft</u>		Top of Casing Elevation <u>86.92 ft</u>	

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0 -2 -4 -6 -8 -10 -12 -14	The diagram shows a well casing extending from the surface down to approximately 13 feet. A screen interval is indicated from about 2.5 feet to 13 feet. Below the screen is a sand filter pack. A bentonite seal is shown at the surface. A gravel seal is also indicated near the surface.	CS SS	CS SS	Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 6 Date: 08 Nov 90 Measuring Point: Below grade Total Well Depth: 13 ft Developing Method: PVC bailer; QED bladder pump DRILLING METHOD: Type: Hollow stem auger Casing: Outer diameter: 6 in. SAMPLING METHOD: Type: Split-spoon Weight: 140 lb Fall: 30 in. Diameter: 2 in. Interval: 2 ft RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 1.25 in. Length: 4.69 (includes stick-up) Joint Type: Threaded flush SCREEN: Material: PVC schedule 40 Diameter: 1.25 in. Slot Size: 0.010 in. Length: 10 ft Stratigraphic Unit: Overburden FILTER PACK: Sand Grade: No.0 Amount: 250 lb Interval: 13-3 ft SEALS (S): Type: 3/8 in. bentonite pellets Interval: 2-1.5 ft Type: Concrete Interval: 1.5-surface LOCKING CASING: Yes NOTES:

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WELL LOG FOR: B-14

Project Name <u>Flintkote</u>	Total Depth <u>16 ft</u>
Project No. <u>535-005</u>	Date Drilled <u>05 Nov.90</u>
Location <u>Orangeburg, NY.</u>	Well Completion Date <u>05 Nv 90</u>
Geologist <u>Tarik Zarrouk</u>	Date Developed <u>26 Nov 90</u>
Surface Elevation <u>85.18 ft</u>	Top of Casing Elevation <u>86.81 ft</u>

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0 2 4 6 8 10 12 14 16	SCREENED INTERVAL GROUT BENTONITE SEAL SAND		CS SS SS QT SS SS SS SS SS	Client: Berbor Realty. Driller: KENDRICK Drilling Co., Inc. Type of Well: Overburden Static Water Level: 2.53 ft. Date: 5 Nov 90 Measuring Point: Below grade Total Well Depth: 15 ft Developing Method: Centrefugal pump/hand surged DRILLING METHOD: Type: Hollow stem auger Outer diameter: 6 in. Casing: SAMPLING METHOD: Type: Split-spoon Diameter: 2 in. Weight: 140 lb Fall: 30 in. Interval: 2 ft RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 1.25 in. Length: 6.63 ft (includes stick-up) Joint Type: Threaded flush SCREEN: Material: PVC schedule 40 Diameter: 1.25 in. Slot Size: 0.010 in. Length: 10 ft Stratigraphic Unit: Overburden FILTER PACK: Sand Grade: No.0 Amount: 300 lb Interval: 16-3.5 ft. SEALS (S): Type: 3/8 in. bentonite pellets Interval: 3.5-1.5 ft. Type: Interval: Type: Concrete Interval: 1.5-surface LOCKING CASING: Yes NOTES:

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WELL LOG FOR: B-17

Project Name <u>Flintkote</u>		Total Depth <u>14 ft</u>	
Project No. <u>535-005</u>		Date Drilled <u>07 Nov 90</u>	
Location <u>Orangeburg, NY</u>		Well Completion Date <u>07 Nov 90</u>	
Geologist <u>Tarik Zarrouk</u>		Date Developed <u>26 Nov 90</u>	
Surface Elevation <u>92.59 ft</u>		Top of Casing Elevation <u>94.97 ft</u>	

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0 -2 -4 -6 -8 -10 -12 -14	SCREENED INTERVAL SAND GROUT BENTONITE SEAL	Cd ss ss ss	Cd ss ss ss	Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 6.01 Date: 07 Nov 90 Measuring Point: Below grade Total Well Depth: 13 ft Developing Method: Centrifugal pump/Hand surged DRILLING METHOD: Type: Hollow stem auger Outer diameter: 6 in. Casing: SAMPLING METHOD: Type: Split-spoon Diameter: 2 in. Weight: 140 lb Fall: 30 in. Interval: 2 ft RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 1.25 in. Length: 4.4 (includes stick-up) Joint Type: Threaded flush SCREEN: Material: PVC schedule 40 Diameter: 1.25 in. Slot Size: 0.010 in. Length: 10 ft Stratigraphic Unit: Overburden FILTER PACK: Sand Grade: No.0 Amount: 250 lb Interval: 13-3 ft SEALS (S): Type: 3/8 in. bentonite pellets Interval: 2-1.5 ft Type: Interval: Type: Concrete Interval: 1.5-surface LOCKING CASING: Yes NOTES: Augered from the surface to depth of 6 ft. and started split spoon sampling from depth 6 ft to 14 ft.

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WELL LOG FOR: B-21

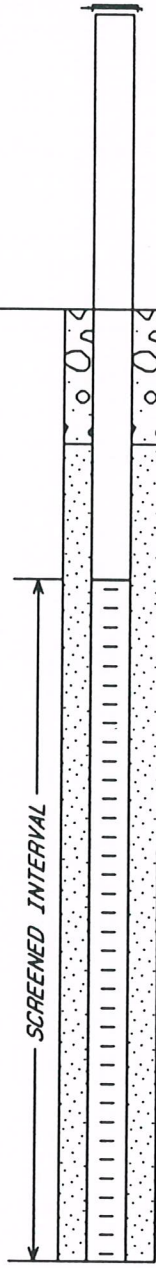
Project Name	Flintkote	Total Depth	13 ft
Project No.	535-005	Date Drilled	06 Nov 90
Location	Orangeburg, NY	Well Completion Date	06 Nov 90
Geologist	Tarik Zarrouk	Date Developed	
Surface Elevation	85.05 ft	Top of Casing Elevation	86.58 ft

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
0	The diagram shows a well casing with a screen interval from approximately 1.5 ft to 12.5 ft depth. A bentonite seal is located at the top of the casing. The well is filled with sand. The screen interval is labeled 'SCREENED INTERVAL' and the sand fill is labeled 'SAND'.			Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 4.3 Date: 07 Nov 90 Measuring Point: Below grade Total Well Depth: 12 ft Developing Method: DRILLING METHOD: Type: Hollow stem auger Casing: Outer diameter: 6 in. SAMPLING METHOD: Type: Split-spoon Weight: 140 lb Fall: 30 in. Diameter: 2 in. Interval: 2 ft RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 3.53 (includes stick-up) Joint Type: Threaded flush Diameter: 1.25 in. SCREEN: Material: PVC schedule 40 Slot Size: 0.010 in. Diameter: 1.25 in. Stratigraphic Unit: Overburden Length: 10 ft FILTER PACK: Sand Grade: No.0 Amount: 250 lb Interval: 13-1.5 ft SEALS (S): Type: 3/8 in. bentonite pellets Interval: 1.5-.5 ft Type: Concrete Interval: Type: Concrete Interval: .5-surface LOCKING CASING: Yes NOTES:
2				
4				
6				
8				
10				
12				

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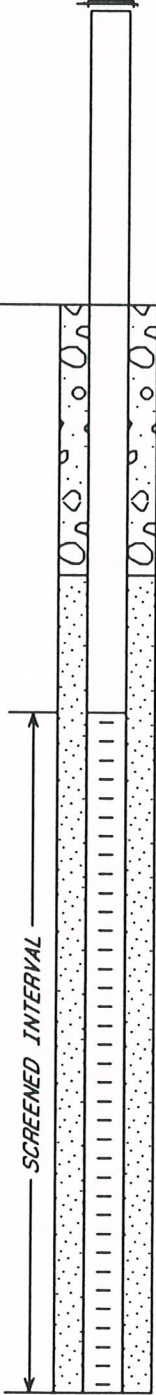
WELL LOG FOR: PP-1

Project Name <u>Flintkote</u>		Total Depth <u>8 ft</u>	
Project No. <u>535-005</u>		Date Drilled <u>20 Feb. 91</u>	
Location <u>Orangeburg, NY.</u>		Well Completion Date <u>20 Feb. 91</u>	
Geologist <u>Tarik Zarrouk</u>		Date Developed <u>25 Feb. 91</u>	
Surface Elevation <u>ft</u>		Top of Casing Elevation <u>ft</u>	

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
 SCREENED INTERVAL				Client: Berbor Realty. Driller: TANK TECH. Type of Well: Overburden Static Water Level: 4.75 FT Date: 25 Feb 91 Measuring Point: Below grade Total Well Depth: 7 ft Developing Method: Master-flex pump DRILLING METHOD: Type: Backhoe Casing: Outer diameter: 6 in. SAMPLING METHOD: Type: Fall: Diameter: 2 in. Weight: Interval: RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 2 in. Length: 4.10ft (includes stick-up) Joint Type: Threaded flush SCREEN: Material: PVC schedule 40 Diameter: 2 in. Slot Size: 0.010 in. Length: 5 ft Stratigraphic Unit: Overburden FILTER PACK: Sand Grade: No.0 Amount: 150 lb Interval: 7-2 ft Sand Grade: No.00 Amount: 200 lb Interval: 8-1 ft SEALS (S): Type: 3/8 in. bentonite pellets Interval: Type: Interval: Type: Interval 2-surface. LOCKING CASING: Yes NOTES: A prepack 5 ft section of 2 in. screen, surrounded with additional filter sand, was installed with temporary casing at 7 ft deep for water monitoring and sampling.
0			TS	
2			SS	
4				
6				
8				

WELL LOG FOR: PP-2

Project Name <u>Flintkote</u>		Total Depth <u>8 ft</u>	
Project No. <u>535-005</u>		Date Drilled <u>08 Feb. 91</u>	
Location <u>Orangeburg, NY.</u>		Well Completion Date <u>08 Feb. 91</u>	
Geologist <u>Tarik Zarrouk</u>		Date Developed <u>25 Feb. 91</u>	
Surface Elevation <u>ft</u>		Top of Casing Elevation <u>ft</u>	

DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
 SCREENED INTERVAL				Client: Berbor Realty. Driller: TANK TECH. Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb 90 Measuring Point: Below grade Total Well Depth: 8 ft Developing Method: Master flex pump DRILLING METHOD: Type: Backhoe Casing: Outer diameter: 6 in. SAMPLING METHOD: Type: Fall: Diameter : Weight: Interval: RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 2 in. Length: 5.25ft (includes stick-up) Joint Type: Threaded flush SCREEN: Material: PVC schedule 40 Diameter: 2 in. Slot Size: 0.010 in. Length: 5 ft Stratigraphic Unit: Overburden FILTER PACK: Sand Grade: No.0 Amount: 300 lb Interval: 8-3 ft Grade: No.00 Amount: 150 lb Interval: 9-2 ft SEALS (S): Type: 3/8 in. bentonite pellets Interval: Type: Interval: Type: Interval 2-surface. LOCKING CASING: Yes NOTES: A prepack 5 ft section of 2 in. screen ,surrounded with additional filter sand, positioned with temporary casing was installed at 3-8 ft deep for water monitoring & sampling
0			TS	
2			SS	
4				
6				
8				

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APPENDIX F

TEST PITS

APPENDIX F

TEST PITS

18 January 1991

On 18 January 1991 a backhoe was mobilized to access a subsurface tunnel shown by the fire insurance map to lead from the center of Block 754 to the immediate vicinity of MW-18. The equipment was operated by Tank Tech of Congers, NY, subcontractor to LMS. It had been theorized that, in light of the generally low VOC concentrations measured in the Block 754 groundwater samples (Chapter 3 of the Summary Report), the tunnel may have been the route by which chemicals migrated to MW-18. The excavation confirmed the presence of a tunnel, with a wide (more than 5 ft) passageway oriented nearly west to east. This main passageway terminated about 20 ft east of the opening. It could not be determined whether or not the termination of the tunnel was due to collapse, or because it had been filled at that location. LMS' crew observed debris from an automobile and refrigerator in the main passageway. A narrower (3-4 ft wide) passageway oriented perpendicular to the main tunnel (N-S) was observed to discontinue at a wall 10-15 ft south of the excavation opening. Several pipes were observed to pass through the wall at that location. Deep water (approximately 4 ft and obstructions precluded a walk-in inspection of the tunnel.

The excavation was expanded in the direction of the underground tanks suspected as being present from the November 1990 GPR survey. The excavation did not uncover any tanks at this location; rather two backfilled chambers were revealed. These chambers were separated by 1-2 ft wide brick walls. Other excavations were conducted south and east of the first excavation in order to attempt further access to the tunnel network. No additional access points to the tunnel network were uncovered.

A test pit dug just northeast of a line between B-11 and MW-22 uncovered (see Plate 1 of the Summary Report) oil in the soil and shallow groundwater to a depth of approximately 4-5 ft. Oil and water were observed to flow into the pit from strata along its west, north and south faces. Some of this water appeared to meltwater draining into the pit from the base

of the frost layer (about 6 in. BGS). This pit was quickly backfilled to prevent the collection (and subsequent displacement) of contaminated water.

7-8 February 1991

On 7-8 February 1991 several test pits and trenches were dug at Block 754. Test pits TP-1, TP-2, TP-3, TP-4 and TP-5 were completed along the east (downgradient) side of a concrete slab that held the plastics processing building, according to the old fire insurance map. A sixth pit was completed to construct a prepacked well (PP-2). Soil samples from each of the five pits were collected for VOC analyses; the soil in TP-2 was tested for base neutrals.

Groundwater was encountered in all pits. At TP-3 a broken pipe filled with water was quickly emptied. The water had a slight sheen; a sample of the liquid in the pit was collected for VOC analysis. At TP-5 another broken pipe yielded oily water that flooded the pit. This water was also sampled for VOC analysis.

Test pits TP-6, TP-7-1, TP-7-2, and TP-8 were dug along Greenbush Road to determine whether oil might be crossing under Greenbush Road from Block 754 to MW-18. Test pits TP-6, TP-7-2, and TP-8 did not exhibit any oil contamination. Groundwater was encountered in all pits. Although a sheen was observed in TP-7-1, the signs of oil in this test pit do not explain the levels of contamination found in samples drawn from MW-18.

TP-8 was completed as a south-to-north trench along the east edge of a concrete foundation slab shown on the 1968 map as a maintenance area. At the north end of the trench, a broken pipe originated out of the south face of the concrete foundation wall. The water that flooded the pit was sampled for VOC analysis.

TP-9 was completed as a west-to-east trench along the subsurface trench that had been accessed on 18 January. The objective was to study the alignment of this structure to gain insight into the possible influence on groundwater and oil migration. From the January access point, the tunnel was followed for approximately 100 ft before it disappeared beneath a large concreted area. The tunnel was largely filled with rubble. At one point (Plate 1 of the

Summary Report) the trench flooded and a water sample was collected for VOC analysis. Soil saturated with oil was discovered during the exploration of the area southwest of the concrete between MW-22 and B-11. This was near the location of the 18 January test pit that revealed the oil contamination. At that point the digging was stopped. Water samples were collected into single 40-ml vials; soil samples 250g jars.

20 February 1991

On 20 February 1991 six test pits (TP-A, TP-B, TP-C, TP-D1, TP-D2, and TP-E) were advanced on Block 756, the Bergstol property, near MW-18. Water samples were collected from each pit for VOC analysis. Soil samples were also collected from TP-A and TP-B for VOC analysis. A prepacked well (PP-1) was installed in a seventh pit. The objective of this activity was to investigate the extent of oil in the subsurface and determine how subsurface structures might be affecting the migration of the oil and VOCs.

During the course of digging it became clear that MW-18 had been constructed close to a subsurface foundation wall. A pipe (broken at TP-B) parallels this subsurface wall and aligns (east-west) almost directly with MW-18. The pipe had been laid in a permeable gravel bedding, now oil saturated. A sample of water draining from the pipe was collected for VOC analysis.

Water samples were collected into single 40 ml vials; soil samples, 250g jars.

TEST BORING: TP-1

Project Name <u>Flintkote</u>	Date <u>08 Feb. 91</u>
Project No. <u>535-005</u>	Total Depth <u>8 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>75 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>4 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrum.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								TS	Gray top soil material, fine sand, some clay. little organic material, woods leaves (dry).
2								CT	Thin layer of green gravel on the top of black coal tar layer extent to 4 ft deep (moist).
4								SS	Native material of red-brown silty sand. Composite soil sample was collected at 2-6 ft depth. (13217). Groundwater accumulated to 4 ft below surface and filled 50% of the hole after 5 hours (wet)
6									
8									

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TEST BORING: TP-2

Project Name <u>Flintkote</u>	Date <u>08 Feb. 91</u>
Project No. <u>535-005</u>	Total Depth <u>8 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>76 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>4.75 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								 TS 	

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TEST BORING: TP-3

Project Name <u>Flintkote</u>					Date <u>08 Feb. 91</u>				
Project No. <u>535-005</u>					Total Depth <u>8 feet</u>				
Client <u>Berbor Realty</u>					Hole Diameter <u>80 in.</u>				
Location <u>Orangeburg, NY.</u>					Ground Surface Elevation <u>feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>6 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								 TS	This test pit has the same stratigraphy as hole # TP-2 which is 50 ft to the south. Gray top soil, some silty sand, little clay, trace of construction debris (dry).
2						OVA	0		
4						OVA	0		
6		↑ S.S. ↓		↑ W.S. ↓		OVA	0		
8									

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TEST BORING: TP-4

Project Name <u>Flintkote</u>	Date <u>08 Feb. 91</u>
Project No. <u>535-005</u>	Total Depth <u>8 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>75 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>7 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instmt.	Reading		
0-6"	6-12"	12-18"	18-24"						
0								TS	Gray top soil material , fine sand, some clay. little organic material , woods leaves mixed with construction debris (dry) .
2					OVA		0	CT	A layer of black fine sand mixed with ash and coal tar (moist) .
4					OVA		0	SS	Brown- red fine sand , some silt , little clay (wet) . A composite soil sample was collected at 4-8 ft depth (16500) . Water accumulated at 7 ft depth with sheen on the surface.
6					OVA		0		
8									

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TEST BORING: TP-5

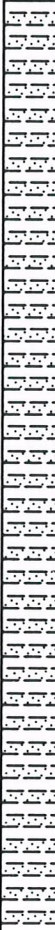
Project Name <u>Flintkote</u>		Date <u>08 Feb. 91</u>	
Project No. <u>535-005</u>		Total Depth <u>4 feet</u>	
Client <u>Berbor Realty</u>		Hole Diameter <u>75 in.</u>	
Location <u>Orangeburg, NY.</u>		Ground Surface Elevation <u>feet</u>	
Geologist <u>Tarik Zarrouk</u>		Depth to Water <u>3 feet</u>	

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								TS	The hole location is 10 ft north of hole # TP-4 Mixed of top soil with black sandy coal tar material and black ash, cinder (dry).
2								CT	A layer of black coal tar mixed with ash and green fine sand (wet). The water accumulated west of a foundation side wall, with oil on the surface as a result of hitting 6 in. (Orangeburg) pipe at 4 ft. running north-south. A water sample was collected at 3 ft depth (16112), also a composite soil sample was collected at 2-4 ft depth (18555).
4									

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TEST BORING: TP-6

Project Name <u>Flintkote</u>	Date <u>08 Feb. 91</u>
Project No. <u>535-005</u>	Total Depth <u>6 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>80 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>5 feet</u>

DEPTH IN FEET	BORING INFORMATION						GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION		
	Blows on Sampler				Recovery	Instrmt.			Reading	
	0-6"	6-12"	12-18"	18-24"						
0									TS	The test pit located 10 ft north east of well # B-6 Gray top soil , mixed with brown fine sand , some silt little clay , trace of coal tar (dry) .
2										
									SS	Red- brown fill material, interbedded of silty clay and f-m sand layers. Ground water in the coarser grain size layers. The water has sheen on the surface and entered the pit from the west side. A composite soil sample was collected at 2-6 ft depth (18554) , also water sample was collected from the hole at 5 ft depth (16121) .
4										
6										

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TEST BORING: TP-7-1

Project Name <u>Flintkote</u>					Date <u>08 Feb. 91</u>				
Project No. <u>535-005</u>					Total Depth <u>8 feet</u>				
Client <u>Berbor Realty</u>					Hole Diameter <u>80 in.</u>				
Location <u>Orangeburg, NY.</u>					Ground Surface Elevation <u>feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>6.75 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrat.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								 CT	Fill material, mixed of coal tar and ashes, little gravel, organic material, woods, leaves roots (dry).
2									
4					OVA 	0		 SS	Interbedded brown yellow m-f sand and v.f. brown red silty sand (moist to wet). Water in the m. sand layers with some sheen on the surface. A composite soil sample was collected at 3-6 ft depth (18552). The hole is located 19 ft east of BP-9.
6									
8									

S.S.



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TEST BORING: TP-7-2

Project Name <u>Flintkote</u>					Date <u>08 Feb. 91</u>				
Project No. <u>535-005</u>					Total Depth <u>6 feet</u>				
Client <u>Berbor Realty</u>					Hole Diameter <u>80 in.</u>				
Location <u>Orangeburg, NY.</u>					Ground Surface Elevation <u>feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>5 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								TS	The test pit located 19 ft south west of well # B-12 Gray top soil , mixed with brown fine sand , some silt little clay , foundation debris (dry) .
2					OVA	0		SS	
4									Red- brown fill material, interbedded silty clay and yellow m-f sand layers. Ground water in the coarser grain size layers. The water was clean and sample was collected at 5 ft depth, (16123) .
6									

TEST BORING: TP-8

Project Name <u>Flintkote</u>		Date <u>07 Feb.91</u>	
Project No. <u>535-005</u>		Total Depth <u>4 feet</u>	
Client <u>Berbor Realty</u>		Hole Diameter <u>80 in.</u>	
Location <u>Orangeburg, NY.</u>		Ground Surface Elevation <u>feet</u>	
Geologist <u>Tarik Zarrouk</u>		Depth to Water <u>2 feet</u>	

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								ct	A trench was dug to relocate the passway of old tunnel 11 ft north of well # B12. 6 inchs concrete slab covers the surface (dry) .
								ss	Gray fine sand , some silt , little clay.
								PL	Broken 6 in. (Orangeburg) pipe at 1.5 ft depth running west-east and water sample was collected from this pipe for analysis after noticing sheen on the water surface (18551) . Pipe originates from foundation wall (Maintenance bldg ?) in alcove with foundation to north.
2								ss	Gray fine sand, some silt, little clay.
4									

W.S.

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Lawler, Matusky & Skelly Engineers

TEST BORING: TP-9

Project Name <u>Flintkote</u>		Date <u>07 Feb. 91</u>	
Project No. <u>535-005</u>		Total Depth <u>4 feet</u>	
Client <u>Berbor Realty</u>		Hole Diameter <u>80 in.</u>	
Location <u>Orangeburg, NY.</u>		Ground Surface Elevation <u>feet</u>	
Geologist <u>Tarik Zarrouk</u>		Depth to Water <u>2 feet</u>	

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0									ct A trench was dug to relocate the passway of old tunnel running west-east. 6 in. concrete slab on surface (dry).
2									cf The old tunnel was filled with construction fill material and foundation debris. Water sample was collected at 2 ft below the surface from the middle of the tunnel where water entered the pit from the south side (16116).
4									

W-S

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OVA

0



Lawler, Matusky & Skelly Engineers

TEST BORING: TP-A

Project Name <u>Flintkote</u>					Date <u>20 Feb. 91</u>				
Project No. <u>535-005</u>					Total Depth <u>8 feet</u>				
Client <u>Berbor Realty</u>					Hole Diameter <u>75 in.</u>				
Location <u>Orangeburg, NY.</u>					Ground Surface Elevation <u>feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>6 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION	
	Blows on Sampler				Recovery	Instrmt.	Reading			
	0-6"	6-12"	12-18"	18-24"						
0									Dark brown-red silty sand mixed with gray top soil sandy silt and little construction debris (dry).	
2						OVA	0		SS	Red- brown silty fine sand, some clay, little gravel
4						OVA	0		GS	Gray green silty fine sand with some oil odor (wet). Soil sample was collected at 4-6 ft depth, (A16498).
6						OVA	0		SS	Brown silty sand, some clay extent to 8 ft. Water accumulated in the hole at 5 ft depth, where most of the water seeping into the hole is originating from a 3 ft deep zone on south side of the pit. water sample was collected after noticing sheen on the surface. (A16119).
8										

Lawler, Matusky & Skelly Engineers

TEST BORING: TP-B

Project Name <u>Flintkote</u>	Date <u>20 Feb. 91</u>
Project No. <u>535-005</u>	Total Depth <u>4 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>60 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>2 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
0-5'	5-12'	12-18'	18-24'						
0								TS	Gray top soil mixed with red silty sand, some construction debris (dry).
2	↑ W.S.				↑ O.V.A.		0	PL	Hit broken 6 in. pipe where water mixed with free product drained from the pipe and started to fill the hole. A layer of green gravel around the pipe line was saturated with oil. Soil sample was collected at 2-4 ft depth. (A16499). Also water sample was collected from the pipe which is running west -east (A16113).
4					↓ S.S.			SS	Red-brown silty sand, some green gravel, little clay. Next to the south of the pit a subsurface wall running at the same direction of the pipe line. Wall depth is below bottom of test pit.

Lawler, Matusky & Skelly Engineers

TEST BORING: TP-C

Project Name <u>Flintkote</u>					Date <u>20 Feb. 91</u>				
Project No. <u>535-005</u>					Total Depth <u>4 feet</u>				
Client <u>Berbor Realty</u>					Hole Diameter <u>75 in.</u>				
Location <u>Orangeburg, NY.</u>					Ground Surface Elevation <u>feet</u>				
Geologist <u>Tarik Zarrouk</u>					Depth to Water <u>3 feet</u>				

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
	0-6"	6-12"	12-18"	18-24"					
0								TS	Dark gray top soil of fine sand , some silt and clay, little construction debris (dry) .
2					OVA	0		CT	Coal tar layer interbedded with fine sand and silt Water in the sand layers. Water sample was collected at 3 ft depth (A16111) -wet. Water had no apparent oil odor or contamination.
4									

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W-S

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Lawler, Matusky & Skelly Engineers

TEST BORING: TP-D1

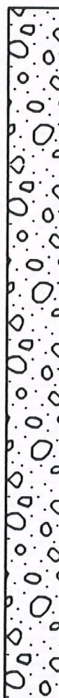
Project Name <u>Flintkote</u>	Date <u>20 Feb.91</u>
Project No. <u>535-005</u>	Total Depth <u>4 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>75 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>2 feet</u>

DEPTH IN FEET	BORING INFORMATION							GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.	Reading		
0-6"	6-12"	12-18"	18-24"						
0									TS Dark gray top soil of fine sand , some silt and clay, little construction debris (dry) .
2									PL Coal tar layer interbedded with fine sand and silt The water was captured in the sand layer. Also a broken 6 in. pipe at 2 ft depth where water had little sheen on the surface and water sample was collected. (A16122) The location of D1 is 16 ft south of D2 .
4									CT Thick layer of coal tar at the bottom of the pit some silty sand and parts of cables,wires.

Lawler, Matusky & Skelly Engineers

TEST BORING: TP-D2

Project Name <u>Flintkote</u>	Date <u>20 Feb. 91</u>
Project No. <u>535-005</u>	Total Depth <u>4 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>75 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>3 feet</u>

DEPTH IN FEET	BORING INFORMATION						GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION	
	Blows on Sampler				Recovery	Instrmt.			Reading
	0-6"	6-12"	12-18"	18-24"					
0									TS Dark gray top soil of fine sand , some silt and clay, little construction debris (dry) .
2									CT Coal tar layer interbedded with fine sand and silt Water in the sand layers. Water sample was collected at 2.5 ft depth (wet) . Water had little sheen on the surface, (A16114) .
4									

0

2

4

0-6"

6-12"

12-18"

18-24"

Recovery

Instrmt.

Reading

0

0

W.S

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Lawler, Matusky & Skelly Engineers

Lawler, Matusky & Skelly Engineers

TEST BORING: PP-2

Project Name <u>Flintkote</u>	Date <u>08 Feb.91</u>
Project No. <u>535-005</u>	Total Depth <u>8 feet</u>
Client <u>Berbor Realty</u>	Hole Diameter <u>6 in.</u>
Location <u>Orangeburg, NY.</u>	Ground Surface Elevation <u>feet</u>
Geologist <u>Tarik Zarrouk</u>	Depth to Water <u>4.75 feet</u>

DEPTH IN FEET	BORING INFORMATION						GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	Blows on Sampler				Recovery	Instrmt.		
	0-6"	6-12"	12-18"	18-24"				
0								TS Gray top soil material , fine sand, some clay. little organic material , woods, leaves roots (dry) .
2					OVA	0		SS Red- brown silty fine sand, some clay, little gravel extent to 8 ft deep (moist to wet) .
4					OVA	0		Water entered the pit from the east side and had a sheen on the surface . Chemical odor present.
6					OVA	0		
8								

Lawler, Matusky & Skelly Engineers

APPENDIX G
WELL DEVELOPMENT

APPENDIX G
WELL DEVELOPMENT SUMMARY

Well	Date	Pump	Purge Amount		Final Turbidity (NTU)
			(gal)	Well Volumes	
MW-18	2/5/91	C	62	47	15
MW-20	2/5/91	C	65	40	11
MW-22	11/21/90	C	28	22	40
	2/5/91	P	17	9	5
B-6	11/26/90	C	84	139	8
	2/5/91	P	6	18	6.5
B-9	11/26/90	P	15	44	16
B-11	2/5/91	P	23	36	7.5
B-14	11/21/90	C,B	1	1	No reading
	11/26/90	P	12	15	7
B-17	11/21/90	C	23	47	32
B-18	11/26/90	C	27	43	17
B-20	11/20/90	C	16	27	80
	11/26/90	P	7	12	0.7
PP-1	2/25/91	P	13	18	3.2
PP-2	2/25/91	P	24	26	20

C = Centrifugal pump
P = Peristaltic pump
B = Bailer

LAWLER, MATUSKY & SKELLY ENGINEERS
CREW CHIEF REPORT

PAGE ____ OF ____

A. CREW CHIEF: D.K. EC 5. JOB NO: 535-005
CREW MEMBER(S): JACK, BL 6. PROJ. MGR: _____
CLIENT: BERGSTAD 7. VEHICLE USED: VAN
4. SURVEY: well development 8. BOAT(S) USED: _____

B. CREW CHIEF REPORT (COMPLETE AFTER SURVEY.)

1. SURVEY START/END DATE 11/20-21 / 26 ^{3 DAYS}
2. SURVEY START/END TIME _____ / _____
3. DESCRIBE DETAILS IN SECTION C:
- (a) SAMPLING GEAR WORKING PROPERLY ☒ Y/N
- (b) METERS FIELD CALIBRATED: (1) WATER QUALITY ☒ Y/N
(2) AIR MONITOR (HNU, OVA, CGI) ☒ Y/N
- (FIELD CALIB. MUST BE ATTACHED TO ORIG. C.C. REPORT & SENT TO QA/QC)
- (c) WAS DOWNTIME INCURRED? #HRS? ☒ Y/N
- (d) ANY INCIDENTS, ACCIDENTS, PERTINENT OBSER. ☒ Y/N
4. WERE FOLLOWING REPORTS COMPLETED & SUBMITTED?
- (a) WEATHER CONDITIONS LISTED ON FIELD DATA SHEETS ☒ Y/N
- (b) RADIO LOGS ☒ Y/N
- (c) EQUIPMENT USAGE ☒ Y/N
- (d) BOAT/VEHICLE LOGS ☒ Y/N
5. BOAT USAGE
- (a) ENGINE HOURS _____ TO _____
- (b) RADIO LOGS _____ TO _____
- (c) BOAT LOCATION _____
6. CHAIN OF CUSTODY COMPLETED. SAMPLES SIGNED OVER. ☒ Y/N

COMMENTS/OBSERVATIONS

SURVEY went slow wells RECOVERED slow.
DEVELOPED most wells AT AROUND .25 CPM.

NOTE: SEND ORIGINAL CREW CHIEF REPORT TO QA/QC WITHIN 5 DAYS OF SURVEY COMPLETION
SEND YELLOW COPY TO WAREHOUSE. RETAIN PINK COPY FOR C.C. FILE.

C.C. SIGNATURE DONALD KASSPI

DATE: 1/3/90

USE ADDITIONAL SHEET(S), IF NECESSARY.

LAWLER, MATUSKY & SKELLY ENGINEERS
FIELD METER CALIBRATION AND/OR CHECK
DATA SHEET

site: BERGSTOL
 Oper: WELL DEPT
 Calib. By:

*Include % Diff. calculation for conductivity calibration checks: % Diff = $\frac{\text{Ex} - \text{Ob}}{\text{Ex}} \times 100$
For dissolved oxygen and pH meter calibrations, record adjustments in comment section.

WELL DEVELOPMENT LOG

TURBIDITY No. LMJ-001

2015

COMMENTS: PUC STICK-UP 1.60. DTW TAKEN AT TOF
OF PUC. WATER DARK BROWN.

LAWLER, MATUSKY & SKELLY ENGINEERS

WELL DEVELOPMENT LOG

DATE 11/21/90WELL No. MW-22CREW DK BLpH No. —JOB No. 535-005THERMOMETER No. —SITE NAME BERGSTOLSCT No. —DEVEL. METHOD CENTRIFUGAL PUMPTURBIDITY No. LMS-001

TIME	GALLONS BAILED	pH	Temperature GPM (°C)	SPECIFIC CONDUCTANCE (μmhos/cm)	TURBIDITY (NTU'S)
TART 1230		—	1 GPM	—	
1234	4 GAL		↓		500
1237	7 GAL		↓		
1239	DRX 8 GAL				
START 1253			50 GPM		
3.00			↓		175
1310					70
END 1330	20 GAL		↓		40
	TOTAL 28 GAL				

DEPTH to WATER: 6.48'DEPTH of WELL: 14.36'TIME: 1140DEPTH to WATER: 6.90'DEPTH of WELL: —TIME: 1340COMMENTS: STARTED OUT DARK BROWN

WELL DEVELOPMENT LOG

WELL NO. B/F-14

pH No.

THERMOMETER No.

SCT No. ²²⁷²⁷⁵

TURBIDITY No. *LMS-001*

DEPTH to WATER: 9.58'

DEPTH of WELL: 16.12

TIME: 08.50

DEPTH to WATER: 10

DEPTH of WELL: _____

TIME: .

COMMENTS: PVC STICK-UP - 1.59 WENT DRY .75 GAL

0855 HAND SURGED .50 GAL AT 0905 SLOW

RECOVERY. WATER DARK BROWN.

* STARTED OUT WITH CENTRIFUGAL PUMP INERT TO CIRCULATE BY HAND

original
Richard
RJ
9/24/9

LAWLER, MATUSKY & SKELLY ENGINEERS

WELL DEVELOPMENT LOG

DATE

11/21/90

WELL No.

B/P-17

CREW

DK/BL

pH No.

—

JOB No.

535-C05

THERMOMETER No.

—

SITE NAME

BERGSTOL

SCT No.

—

DEVEL. METHOD

CENTRIFUGAL
PUMP

TURBIDITY No.

LMS-001

TIME	GALLONS BAILED	pH	Temperature (°C)	SPECIFIC CONDUCTANCE (µmhos/cm)	TURBIDITY (NTU'S)
0945- 0945	1 GAL	—	—	—	DRX
1008 1012	2 GAL				—
START 1026			50 GPM		
END 1029	2 GAL				NO READING
START 1041			25 GPM		
1054					350
1059					175
1202					300
1117					125
1122					75
1129					55
1150					53
END 1155	18 GALS				32
	TOTAL 23 GALS				

DEPTH to WATER: 7.77'

DEPTH of WELL: 15.45

TIME: 0935

DEPTH to WATER: 7.90'

DEPTH of WELL: —

TIME: 1200

COMMENTS: DARK BROWN

PVC Stick-up 2.40'

WELL DEVELOPMENT LOG

DATE 11/26/90WELL No. B1P-18CREW DK, ECpH No. —JOB No. 535-005THERMOMETER No. —SITE NAME BERGSTALSCT No. —DEVEL. METHOD CENTRIFUGAL PUMPTURBIDITY No. LMS-001

	TIME	GALLONS BAILED	pH	Temperature (°C)	SPECIFIC CONDUCTANCE (μmhos/cm)	TURBIDITY (NTU'S)
START END	1240 1242	2 GAL		1.6 gpm		
START	1252			50 gpm		
END	1259	3 GAL		↓		
START	1310			25 gpm		
END	1318	2 GAL				200
START	1329	3 GAL				
END	1339					
START	1354	3.5				
END	1404			7.25		
START	1420					280
END	1428					175
START	1442					125
END	1455	7.5				100
START	1506					
END	1520					90
START	1535					90

DEPTH to WATER: 5.54'DEPTH of WELL: 15.50'TIME: 1220DEPTH to WATER: 8.90'DEPTH of WELL: —TIME: 1605COMMENTS: PVC STICK-UP-2.80' WATER DARK BROWN

2 of 2

WELL DEVELOPMENT LOG

11/26/90

B/F-18

D. K. CC

535-005

—

BERGSTAD



LMS-001

END

TIME: _____

TIME: _____

COMMENTS: _____

LAWLER, MATUSKY & SKELLY ENGINEERS

11/26/21 WELL DEVELOPMENT LOG

DATE

10/26/90

WELL No.

B/P-10

CREW

DK, EC

pH No.

JOB No.

535-005

THERMOMETER No.

SITE NAME

BercoStal

SCT No.

DEVEL. METHOD

CENTRIFUGAL Pump

TURBIDITY No.

LM5-001

TIME	GALLONS BAILED	pH	Temperature (°C)	SPECIFIC CONDUCTANCE (µmhos/cm)	TURBIDITY (NTU'S)
ART 1020	Start third casing		16.1M		
1025	9 GAL				500
1045	25 Gal				275
1055					550
1108	46 gal				140
1113	-			Same sample as @ 1108 - let air out.	125
1120	57 Gal				
1130	64 GAL				125
1134	69 GAL				80
1140	74 GAL				48
1150	84 GA				8

DEPTH to WATER: 5'

DEPTH of WELL: 14.50'

TIME: 0945

DEPTH to WATER: 7.90

DEPTH of WELL:

TIME: 1154

COMMENTS: PVC Stick-up- 1.50. WATER, STARTED OUT AT DARK BROWN.

LAWLER, MATUSKY & SKELLY ENGINEERS

WELL DEVELOPMENT LOG

DATE

11/26/90

B/P - 20

WELL No. _____

CREW

DL/ECH

pH No. _____

JOB No.

535-005

THERMOMETER No. _____

SITE NAME

Bergstol/FK

SCT No. _____

DEVEL. METHOD

Peristaltic

TURBIDITY No.

001

TIME	GALLONS BAILED	pH	Comments Temperature (°C)	SPECIFIC CONDUCTANCE (µmhos/cm)	TURBIDITY (NTU'S)
1458			PR = 4.0		
1500			PR = 6.0 PT = 2 min		
1503	1.0 Gal		PT = 5:0 min MC PR → 7.0		
1509	2.3		PT = 11:0 min PR = 8		73
1512	3.0 Gal		PT = 13:13.30 PR = 8	Re-surfaced Per. w/ tubing	25
1517	4.0 Gal		PT = 18:30 PR = 8		45
1520	5.0 Gal		PT = 21:45 PR = 8		7.0
1525	6.0 Gal		PT = 26:0 PR = 8		1.2
1529	7.0 Gal		PT = 30:45 PR = 8		0.7

DEPTH to WATER: 5.14 BTC

DEPTH of WELL: 14.35

TIME: 1445

DEPTH to WATER: 4.20 BTC

DEPTH of WELL: 14.35

TIME: 1532

COMMENTS:

EEL

WELL DEVELOPMENT LOG

DATE 11/26/90WELL No. B/P-9CREW DK/ECH

pH No. _____

JOB No. 535-005

THERMOMETER No. _____

SITE NAME Bergsto/FK

SCT No. _____

DEVEL. METHOD Hand bail / peristalticTURBIDITY No. #001

TIME	GALLONS BAILED	pH	Comments Temperature (F)	SPECIFIC CONDUCTANCE (μ mhos/cm)	TURBIDITY (NTU'S)
1015	Start Hand bailing				
1020	Near Dry Petroleum odor/ sheen		Start peristaltic? stop to set-up		
1029			Opaque, rd/bn Gw High silt & clay		
1035			stop - reset gen. speed		
1037			start pump speed at 1.5-2.5		
1055					(175)
1058	2.0 Gal over 5.3 total		stop pump water level at $\approx 7.5'$		
1111			Water level @ 5.0' BTC		
1122 1124			Water level @ 3.32' BTC		
1127			Set & start peristaltic		
1130			Pump speed at 3.0		(200)
1136	2.75		Δ pump speed to 3.5		opaque
1140	3.0 Gal		pump time 13:30		
1147	3.25 Gal		pump time 21:30 Δ rate to 4		
1155	4.0 Gal		pump time 29.0 MIN		375

DEPTH to WATER: 3.20DEPTH of WELL: 8.55TIME: 0935

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

COMMENTS: PVC Stick - U P - 1.55ECH

WELL DEVELOPMENT LOG

DATE _____

WELL No. B/p-9

CREW _____

pH No. _____

JOB No. _____

THERMOMETER No. _____

SITE NAME _____

SCT No. _____

DEVEL. METHOD _____

TURBIDITY No. _____

TIME	GALLONS BAILED	pH	Comments Temperature (°C)	SPECIFIC CONDUCTANCE (μmhos/cm)	TURBIDITY (NTU'S)
1158	5.0 Gal		pump time 31 min		250
1200	5.25 Gal		Δ pump rate to 4.5		
1205	6.0 Gal				≈ 110
1208	6.25 Gal		Re-surge w/ tubing		25
1213	7.0 Gal		pump time 47:15		
1218	≈ 7.5 Gal		Δ rate to 4		
1234	≈ 8.75-8.85		PT = 68:15 Δ rate to 3		
1236	≈ 8.9		Δ rate to 2.5		175-200
1238	9.0 Gal		PT = 71:45 Stop - clear lines		
1248	9.0 Gal		Start PR @ 3.0		
1252			PT = 4.0 min Δ PR to 3.5		
1258	10.0 Gal		PT = 9:30 Δ PR to 3.0		
1310	11.0 Gal		Start Low-High on PR (2-5)		
1315	11.5 Gal		Cont. to fluctuate PR PT = 28.0 min		250 150
1317	11.8 Gal		PT = 30 min		300 175
1324	12.0		PT = 36		150

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

COMMENTS: _____

LAWLER, MATUSKY & SKELLY ENGINEERS

3 8 3

WELL DEVELOPMENT LOG

DATE _____

WELL No. B/p-9

CREW _____

pH No. _____

JOB No. _____

THERMOMETER No. _____

SITE NAME _____

SCT No. _____

DEVEL. METHOD _____

TURBIDITY No. _____

TIME	GALLONS BAILED	pH	Comments Temperature (°C)	SPECIFIC CONDUCTANCE (μmhos/cm)	TURBIDITY (NTU'S)
1330	≈ 12.5		PT = 43.0 min PR = 2		125
1337	12.75		PT = 47		85
1340	12.9		PT = 51		120
1342	13.0		PT = 53		55
1344			PT = 55		55
1348	≈ 13.1		PT = 59		30
1352			PT = 63 PR = 2		22
1358	≈ 13.5		PT = 69 PR = 2		24
1405	≈ 14.0		PT = 77.0 min PR = 2		70
1409	14.75		PT = 81.0 min PR = 2		25
1419	14.9		PT = 91 PR = 2		17
1422	15.0		PT = 93 SHUT DOWN		16

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

COMMENTS: _____

EAS

LAWLER, MATUSKY & SKELLY ENGINEERS

183

WELL DEVELOPMENT LOG

DATE

11/26/96

B/P - 14
WELL No. _____

CREW

DK/ECH

pH No. _____

JOB No.

535-005

THERMOMETER No. _____

SITE NAME

Benjstol/FIC

SCT No. _____

DEVEL. METHOD

Peristaltic

TURBIDITY No. 001

TIME	GALLONS BAILED	pH	Temperature (°C)	SPECIFIC CONDUCTANCE (µmhos/cm)	TURBIDITY (NTU'S)
1544			PR = 8 → 9 PT = 0		
1546	0.5 Gal		PT = 2:0 min PR = 9 → 10		—
1548	1.0		PT = 4:30 PR = 10		OPAQUE
1553	3.0		PT = 9:30 PR = 10		400
1601	3.0		PT = 16:0 min PR = 10		180?
1605	4.0 3.5		PT = 20 PR = 5-7.5 (DEC 10 → 10.7)		—
1608	5.0 4.0		PT = 23:30 PR = 7		OPAQUE
1610	4.8 gal		PT = 25 DEC PR to 3.0 going dry.		—
1614	5.0		PT = 30 min PR = 4.0 → 4.5		375
1617	≈ 5.25		PT = 33 min PR = 4.5 → 3.0 going dry		400
1619	≈ 5.0 5.4		PT = 35:0 PR = 3.5		375
1621	≈ 5.0 5.6		PT = 37:0 PR = 3.5		325
1623	≈ 5.0 5.8		PT = 38:30 PR = 3.5		82
1625	≈ 6.0		PT = 41:0 PR = 3.5 → 3.0		170
16	≈ 6.		PT = 44 PR = 3.0		70
16	≈ 6.		PT = 45 PR = 3.0		63

DEPTH to WATER: 4.33 BTC

DEPTH of WELL: 16.53

TIME: 1540

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

COMMENTS: _____

ECH

WELL DEVELOPMENT LOG

DATE _____

WELL No. B/P-14

CREW _____

pH No. _____

JOB No. _____

THERMOMETER No. _____

SITE NAME _____

SCT No. _____

DEVEL. METHOD _____

TURBIDITY No. _____

TIME	GALLONS BAILED	pH	Temperature (°C)	SPECIFIC CONDUCTANCE (μmhos/cm)	TURBIDITY (NTU'S)
1631	6.7		PT=46 PR=3		65
16	6.8		PT=47 PR=		93
16	6.9		PT=48 PR=3		100
1634	7.0		PT=50 inc. PR to 5.0		120
1636	7.3		PT=51		140
1637	7.6		PT=52		175
1638			PT=53		90
1639			PT=54		65
1640			PT=55		57
1642	8.0		PT=57		59
1643			PT=58		65
1644	8.1		PT=59		64
1645			PT=60		68
1647			PT=62		
1714	10.0 Gal		PT=89		
			PT=		

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

DEPTH to WATER: _____

DEPTH of WELL: _____

TIME: _____

COMMENTS: _____

3 of 3

DATE 11/26/96

WELL No. B/P-14

CREW DIC/ECH

pH No. _____

JOB No. _____

THERMOMETER No. _____

SITE NAME _____

SCT No. _____

DEVEL. METHOD _____

·TURBIDITY No. _____

[illegible]

DEPTH to WATER: _____ DEPTH of WELL: _____ TIME: _____

DEPTH to WATER: _____ DEPTH of WELL: _____ TIME: _____

COMMENTS: Last two turbidity readings (1742 and 1744)

measured back in Niyack

LAWLER, MATUSKY & SKELLY ENGINEERS

WELL DEVELOPMENT LOG

DATE

2/5/91

WELL No.

B/P-6

CREW

DK DD

pH No.

JOB No.

535-005

THERMOMETER No.

SITE NAME

BERGSTOL

SCT No.

DEVEL. METHOD

MASTERFLEX PUMP

TURBIDITY No.

LMS-001

TIME	GALLONS BAILED	pH	PURGE RATE Temperature (°C)	SPECIFIC CONDUCTANCE (µmhos/cm)	TURBIDITY (NTU'S)
0955	START	—	← 50 GPM	—	—
1003	1 Gal		masterflex set on speed 3		89 NTU
1011	1 1/2 Gal				52
1019	2 Gal		surged tubing & speed several times		50
1025	2 1/2 Gal				16
1032	3 Gal		↓ increased speed to 5		20
1044	4 Gal				9
1056	5 Gal				4.5
1115/end	6 1/2 Gal				6.5

DEPTH to WATER: 3.36'

DEPTH of WELL: 19.18'

TIME: 0940

DEPTH to WATER: 6.81'

DEPTH of WELL: —

TIME: 1119

COMMENTS: water cleared relatively quickly

PUC - STICK-UP - 1.54'

LAWLER, MATUSKY & SKELLY ENGINEERS

WELL DEVELOPMENT LOG

DATE

2/5/91

WELL No.

B/P-11

CREW

DK DD

pH No.

—

JOB No.

533-005

THERMOMETER No.

—

SITE NAME

BERGSTOL

SCT No.

—

DEVEL. METHOD

MASTER FLEX pump

TURBIDITY No.

1 MS-001

TIME	GALLONS BAILED	pH	Purge Rate Temperature (°C)	SPECIFIC CONDUCTANCE (µmhos/cm)	TURBIDITY (NTU'S)
1134	start		Pump started on 7		
1139	16 gal		~ 1/4 gpm		290
1154	4 gal				190
1207	7 gal				40
1223	11 gal				38
1245	15 gal				20
1300	19 gal				12
1315/end	23 1/2 gal				7.5

DEPTH to WATER: 5.50'

DEPTH of WELL: 15.84

TIME: 1125

DEPTH to WATER: 5.75'

DEPTH of WELL: 16.01

TIME: 1320

COMMENTS:

slight oil sheen / slight odor

Heavy silt on bottom / scuffed tubing for several minutes (1140)

WELL DEVELOPMENT LOG

$$\underline{2 \mid 5 \mid 9 \mid}$$

WELL NO. MW-18

DIK DD

pH No. _____

535-005

THERMOMETER No. 7

BERL 65101

SCT No. _____

CENT. PUMP

TURBIDITY No. LMS-00

DEPTH to WATER: 7.80' DEPTH of WELL: _____ TIME: 1010
DEPTH to WATER: 9.92' DEPTH of WELL: _____ TIME: 1107
COMMENTS: BROWNISH COLOR FUEL SMELL, CLEARED UP

APPENDIX H

GROUNDWATER SAMPLING

Prior to sampling, static water levels were measured and at least three well volumes of water were purged from each well using a centrifugal pump or peristaltic pump. The initial water sample was analyzed on-site for pH, temperature, conductivity and turbidity. (No on-site tests were conducted for the samples collected on 5 April 1991 and 9 April 1991). Occasionally turbidity measurements were made on the last water sample to quantify the impact of the sampling procedures on water clarity. Following standard LMS protocol for NYSDEC contract work, the water column in each well was allowed to recover to at least 90% of its original volume after purging before samples were collected.

Samples for volatile organic compounds were collected with double ball-check valve Teflon bailers; peristaltic pumps, and occasionally bailers, were used to collect samples for the remaining categories of chemicals as detailed in the attached field data sheets. Samples were collected from the mid-depth of the water column. Nylon rope and tubing were dedicated to each well. Bailers were chemically cleaned in the laboratory before use.

Sample containers and preservatives are summarized below:

Type	Volume	Preservative
VOC	2-40 ml	
base neutral	1 l	
petroleum hydrocarbon	1 l	H ₂ SO ₄

All samples were placed in iced coolers and delivered by messenger to the analytical laboratory with chain-of-custody records. The chain-of-custody records included types of chemical analysis required, collection site, and sample identification number, and method of preservation.

On 11 December 1990 groundwater samples (VOC, base neutrals, and petroleum hydrocarbon) were collected from MW-18, MW-20, B-6, B-9, B-14, B-17, B-18, and B-20.

On 5 February 1991 a sample of floating oil in MW-18 was collected for analysis for VOCs and base neutrals. A top filling acrylic bailer was used to collect this sample.

On 12 February 1991 MW-18, MW-20, MW-22, B-6, and B-11 were resampled for VOCs. A base neutral sample was also collected from MW-18. Two sets of VOC and base neutral samples were collected from MW-18, one with a peristaltic pump and Teflon tubing (silicone tubing in the pump head) and the other with a conventional Teflon bailer. The purpose was to quantify the impact of sampling methods on the groundwater sample. It was theorized that the bailer surged formation fines from the well bottom/pack into the sample, resulting in erroneously high semivolatiles concentrations in the December samples. The volatiles samples for MW-20, MW-22, B-6, and B-11 were collected with a peristaltic pump rather than with a bailer, as had been specified in the work plan; based on the special study for MW-18, this procedure did not have an adverse impact on the samples (see Chapter 3 of the Summary Report).

On 5-6 March 1991 the new prepacked wells (PP-1 and PP-2) were sampled for VOCs and base neutrals; B-6 was resampled for base neutrals only. The base neutral samples were collected with a peristaltic pump.

On 9 April 1991 a water sample was collected from B-11 for VOC analysis.

Trip and field blanks for the VOC analysis were included with the 11 December sampling. Trip blanks were prepared by CAMO Laboratories and consisted of reagent grade water in precleaned sample bottles. Field blanks were collected on-site from reagent grade water

prepared by LMS. The water was poured into a bailer from which the sample bottles were filled. A field blank was collected on 5 March for base neutrals analysis by running LMS reagent water through Teflon and silicone tubing of the peristaltic pump sampling system.

The field data sheets follow.

1. CREW CHIEF: D.K.
2. CREW MEMBER(S): JFC EC
3. CLIENT: BERGSTOI
4. SURVEY: well SAMPLE SURFACE WATER
5. JOB NO: 535-005
6. PROJ. MGR: _____
7. VEHICLE USED: AVIS VAN
8. BOAT(S) USED: _____

B. CREW CHIEF REPORT (COMPLETE AFTER SURVEY.)

1. SURVEY START/END DATE 12/11/90 / 12/11/90
2. SURVEY START/END TIME 0630 / 1800
3. DESCRIBE DETAILS IN SECTION C:
(a) SAMPLING GEAR WORKING PROPERLY Y/N
(b) METERS FIELD CALIBRATED: (1) WATER QUALITY Y/N
(2) AIR MONITOR (HNU, OVA, CGI) Y/N
(FIELD CALIB. MUST BE ATTACHED TO ORIG. C.C. REPORT & SENT TO QA/QC)
(c) WAS DOWNTIME INCURRED? #HRS? Y/N
(d) ANY INCIDENTS, ACCIDENTS, PERTINENT OBSER. Y/N
4. WERE FOLLOWING REPORTS COMPLETED & SUBMITTED?
(a) WEATHER CONDITIONS LISTED ON FIELD DATA SHEETS Y/N
(b) RADIO LOGS Y/N
(c) EQUIPMENT USAGE Y/N
(d) BOAT/VEHICLE LOGS Y/N
5. BOAT USAGE
(a) ENGINE HOURS _____ TO _____
(b) RADIO LOGS _____ TO _____
(c) BOAT LOCATION _____ TO _____
6. CHAIN OF CUSTODY COMPLETED. SAMPLES SIGNED OVER. Y/N

COMMENTS/OBSERVATIONS

SURVEY WENT WELL. MOST OF THE WELLS WERE PURGED
WITH MASTERFLEX PUMPS. MW-18 HAD PRODUCT IN IT.

NOTE: SEND ORIGINAL CREW CHIEF REPORT TO QA/QC WITHIN 5 DAYS OF SURVEY COMPLETION
SEND YELLOW COPY TO WAREHOUSE. RETAIN PINK COPY FOR C.C. FILE.

C.C. SIGNATURE DONALD KASSELL

DATE: 12/20/90

USE ADDITIONAL SHEET(S), IF NECESSARY.

METER NO./ PROBE NO.	TIME	TERM NO./ TEMP. (°C)	EXPECTED VALUE	OBSERVED VALUE	ADJ TO ^a	% DIFF. ^b	COMMENTS
CG 105	0745	150 9.5	7.0	6.8	7.0		
	↓	↓	4.0	4.1			
	1700	4.2	7.0	7.1	7.0		
	↓	↓	4.0	4.2			
CG 106	0745	150 9.5	7.0	7.2	7.0		
	↓	↓	4.0	4.3			
	1700	4.2	7.0	7.2	7.0		
	↓	↓	4.0	4.2			
LMS 001	0750		100	110	100		
TVRB	1700		100	120	100		

For dissolved oxygen and pH meter calibrations, record adjustments (include % and ppm readings for dissolved oxygen meter calibration).

$$\% \text{ Diff} = \frac{\text{Ex} - \text{Ob}}{\text{Ex}} \times 100$$

Date: 12/11/90
Crew: JAC JK JC EH
Job No: 535-005
Project: Well Sampling
Project Site: Feldman Bergstul

Well ID No: MW-18
Well Condition: Good
Well Depth/Diameter: 15.90/2"
Well Casing Type: PVC
Screened Interval: 10'
Casing Ht/Lock No: 12246
Reference Pt: Top of PVC ()
Depth to Water (DTW): 7.99' ; Total depth
Water Column; Ht/Vol: 15.6 - 7.99 x 0.17 = 1.29 gal
Purge Est: 3.88 gal

Purge Date/Time(s): 12/11/90 - 1158-1230
Purge Method: Cent Pump
Purge Depth(s): Surf -> BATH
Purge Rates (gpm):
Purged Volume: 4.0 gal
DTW After Purging:

Yield Rate: L-M-H
Purge Observations: Fuel PRODUCT
IN WATER

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURE.
<u>~2.0 gal</u>	<u>10.5</u>	<u>7.2</u>	<u>777</u>	<u>—</u>
<u>4.0 gal</u>	<u>13.5</u>	<u>7.3</u>	<u>770</u>	<u>48</u>

Comments:

METERS USED
Temp: 150
pH: CP 105
Cond: TLC 10
Turb: LMS 001

DTW Before Sampling: 8.10
Sample Date/Time(s): 12/11/90 1510
Sampling Method: Teflon BATH
Sampling Depth(s): MID DEPTH
DTW After Sampling: —
Sampling Observations: FUEL PRODUCT
IN WATER
Chain-of-Custody No(s):
Analytical Lab(s): CAmo

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	<u>100</u>	<u>7.4</u>	<u>782</u>	
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
<u>*VIA 624 V, 15077</u>		<u>4°C</u>	<u>N</u>
<u>1/2 15078</u>			
<u>*BN 27234</u>			
<u>TPH 27230</u>		<u>47504</u>	
<u>624 V 115075</u>			
<u>1/2 15074</u>			
<u>BN 15073</u>			
<u>TPH 15072</u>			

PRE
PURGE

Air Temp: 37°F
Weather Conditions: cloudy, no wind

* +15

Crew Chief Signature: DONALD KASSEL

Date: 12/11/90

Date: 12/11/90
Crew: JAE OK JC EH
Job No: 535-005
Project: Well Sampling
Project Site: Feldman - Bergshtul

Well ID No: 1111-20
Well Condition: Good
Well Depth/Diameter: 16.54 / 2"
Well Casing Type: PVC
Screened Interval: 10'
Casing Ht/Lock No: 3.63' / 2246
Reference Pt: Top of PVC (0.11')
Depth to Water (DTW): 6.37'
Water Column; Ht/Vol: 10.17 / 1.66 gallons
Purge Est: 5 gallons

Purge Date/Time(s): 12/11/90 0905-0912

Purge Method: Con't pump

Purge Depth(s): Surf - 1 BHA

Purge Rates (gpm):

Purged Volume: 5 gals

DTW After Purging: 7.64'

Yield Rate: L-M-H Low

Purge Observations: Silty, solvent odor

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURB.
1gal	8.5	7.3	786	190
5gal	11.8	7.2	718	70

Comments:

METERS USED

Temp: 150
pH: CP105
Cond: TLC 10
Turb: LMS 001

DTW Before Sampling: 6.55'

Sample Date/Time(s): 12/11/90 / 0955

Sampling Method: Teflon Bc Pen

Sampling Depth(s): m.2 depth

DTW After Sampling: —

Sampling Observations:

Chain-of-Custody No(s):

Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	<u>10.2</u>	<u>7.2</u>	<u>832</u>	<u>17</u>
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pics. Mein.	Fill. (YN)
*VPA 624 V ₁	15122	40C	N
V ₂	16090		
*BN	27232		
TPH	27246	H2SO4	

* + 15

Air Temp: 37°F

Weather Conditions: cloudy

Crew Chief Signature: DONALD KASSER

Date: 12/11/90

Date: 12/11/90
Crew: JAA OK JC EH
Job No: 535-005
Project: Feldman Bergsht
Project Site: Feldman

Well ID No: 11W-22
Well Condition: Good
Well Depth/Diameter: 14.36/2"
Well Casing Type: PVC
Screened Interval: 10'
Casing Ht/Lock No: 3.84' / 2246
Reference Pt: Top PVC 0.18'
Depth to Water (DTW): 5.63'
Water Column; Ht/Vol: 8.73' / 1.43 gallons
Purge Est: 4 gallons

Purge Date/Time(s): 12/11/90 0841 - 0850
0940 - 0950
Purge Method: Cent Pump
Purge Depth(s): Surf -> BAA
Purge Rates (gpm): 0.5 gpm
Purged Volume: 4 gallons + 10 gallons
DTW After Purging: 5.98'

Yield Rate: L-M-H

Purge Observations:

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURB.
2gal	10.5	7.7	1389	850
4gal	10.4	7.6	1375	125
14gal				25

Comments:

METERS USED

Temp: 150
pH: CP 105
Cond: TLC 10
Turb: LMS 001

DTW Before Sampling: 5.80
Sample Date/Time(s): 12/11/90 1045
Sampling Method: Teflon Bailer
Sampling Depth(s): M.2 depth
DTW After Sampling: —
Sampling Observations:
Chain-of-Custody No(s):
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	NTU Turb.
Start	9.1°	7.3	1105	30
End				

SAMPLE ANALYSES

Parameters	Intr. No.	Pres. Meth.	Filt. (Y/N)
*VJA 624 V ₁	15069	4°C	N
V ₂	15670		
*BN	27227		
TPH	27247	H ₂ SO ₄	
* + 15			

Air Temp: 33°F
Weather Conditions: cloudy

Crew Chief Signature: DONALD KASPER

Date: 12/11/90

Date: 12/11/90
Crew: DK JAC JFC
Job No: 533-045
Project: WELL SAMPLE
Project Site: BERGSTAL

Well ID No: P-6
Well Condition: GOOD
Well Depth/Diameter: 9.15 / 1.25
Well Casing Type: PVC
Screened Interval:
Casing Ht/Lock No: 1.55 / P467
Reference Pt: TOP OF PVC
Depth to Water (DTW): 2.8
Water Column; Ht/Vol: 6.35 / 0.6
Purge Est: 3 Vol EST 1.8 GAL

Purge Date/Time(s): 12/11/90 0808-0844
Purge Method: MASTERFLEX PUMP
Purge Depth(s): SURF → BOTTOM
Purge Rates (gpm): 7.25 GAL
Purged Volume: 2.25 GAL
DTW After Purging: 7.11

Yield Rate: L-M(H)
Purge Observations: SLIGHTLY TURBID
SLIGHT SOLVENT ODOR

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURB.
0.25	5.7	7.8	6.92	80
2.25	7.8	7.8	701	85

Comments:

METERS USED
Temp: 150
pH: 69-105
Cond: TLC-10
Turb: 2125-031

DTW Before Sampling: 2.95 (1307)
Sample Date/Time(s): 12/11/90 (1530)
Sampling Method: TEFLON BARRIER
Sampling Depth(s): MID DEPTH
DTW After Sampling: —
Sampling Observations: VERY TURBID
SOLVENT ODOR
Chain-of-Custody No(s): —
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	<u>7.2</u>	<u>7.7</u>	<u>675</u>	<u>90</u>
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Fill. (Y/N)
*VOAS 624	15123	400	N
*BN	16073	↓	↓
	27238		
TPH	27245	42504	↓

* + 15

Air Temp: 38°
Weather Conditions: CLOUDY

Crew Chief Signature: DONALD KASPER

Date: 12/11/90

Date: 12/11/90
Crew: DK, JAC, JFC, EC
Job No: 535-005
Project: WPII SAMPLE
Project Site: PERO STA1

Well ID No: P-9
Well Condition: GOOD
Well Depth/Diameter: 14.49' / 1.25'
Well Casing Type: PVC
Screened Interval:
Casing Ht/Lock No: 1.50' / P467
Reference Pt: TOP OF PVC
Depth to Water (DTW): 4.58
Water Column; Ht/Vol: 9.91'
Purge Est: 3 VOL EST 2.4 GAL
Purge Date/Time(s): 12/11/90 0833 - 0903
Purge Method: MASTERFLEX PUMP
Purge Depth(s): SURF - BOTTOM
Purge Rates (gpm): 2.25 GPM
Purged Volume: 3 GAL
DTW After Purging: 4.91'

Yield Rate: L-M-H
Purge Observations: SLIGHTLY TURBID
IRON PARTICLES. SOLVENT ODOR

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURE.
1.5	11.2	6.4	954	25
3	11.1	6.6	950	20

Comments:

METERS USED
Temp: 150
pH: CP-105
Cond: TLC-10
Turb: LMS 001

DTW Before Sampling: 4.60'
Sample Date/Time(s): 12/11/90 133
Sampling Method: TEFLON BAILER
Sampling Depth(s): MID DEPTH
DTW After Sampling: -
Sampling Observations: SLIGHTLY TURBID
Chain-of-Custody No(s): -
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	10.2	7.4	926	48
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Mein.	Fill. (Y/N)
VOA's *624	V116079	4°C	N
	V216089		
*BN	27237		
TPH	27242	42504	
*+15			

Air Temp: 38°
Weather Conditions: CLOUDY

Crew Chief Signature: DONALD KASSER

Date: 12/11/90

Date: 12/11/90
Crew: DK JAC, JFC
Job No: 535-005
Project: WPI SAMPLE
Project Site: BERGSTA

Well ID No: P-14
Well Condition: GOOD
Well Depth/Diameter: 16 38' / 1.25
Well Casing Type: PVC
Screened Interval:
Casing Ht/Lock No: 1.51 / 19467
Reference Pt: TOP OF
Depth to Water (DTW): 4.13
Water Column; Ht/Vol: 12.25 / .98
Purge Est: 3 VOL EST 2.94 GAL

Purge Date/Time(s): 12/11/90 0905-0930
Purge Method: MASTERFLEX PUMP
Purge Depth(s): SURF-BOTTOM
Purge Rates (gpm): 2.25 GPM
Purged Volume: 3 GAL
DTW After Purging: 10.70' (0932)

Yield Rate: LMH
Purge Observations: SLIGHTLY
TURBID

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURE.	
1 gal / 7 min	9.4	7.3	948	45	0912
3 gal / 2.33 min	10.6	7.2	1099	04	0927

Comments:

DTW - 4.66 1002

METERS USED

Temp: 150
pH: C9-105
Cond: TLC 10
Turb: LMS 001

DTW Before Sampling: 4.16
Sample Date/Time(s): 12/11/90 1355
Sampling Method: TEFLON BATH
Sampling Depth(s): MID DEPTH
DTW After Sampling: —
Sampling Observations: SLIGHTLY
TURBID
Chain-of-Custody No(s): —
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	<u>8.9</u>	<u>7.5</u>	<u>1063</u>	<u>20</u>
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Fill. (Y/N)
*VOA'S 624	V116087	400	N
*BN	V216087		
*TPH	27235		
	27239	H2SO4	

* PLUS 15

Air Temp: 38°
Weather Conditions: CLOUDY

Crew Chief Signature: DONALD HASSELL

Date: 12/11/90

Date: 12/11/90
Crew: D.K. JFC
Job No: 535-005
Project: WELL SAMPLE
Project Site: BERGSTOL

Well ID No: P-17
Well Condition: GOOD
Well Depth/Diameter: 15.18' / 1.25'
Well Casing Type: PVC
Screened Interval:
Casing Ht/Lock No: 2.36' / P467
Reference Pt: TOP OF PVC
Depth to Water (DTW): 7.44
Water Column; Ht/Vol: 7.74' / .62
Purge Est: 3 Vol est = 1.86 GAL
Purge Date/Time(s): 12/11/90 1113-1137
Purge Method: MASTERFLEX PUMP
Purge Depth(s): SURF - BOTTOM
Purge Rates (gpm): > 25 GPM
Purged Volume: 2.5 GAL
DTW After Purging: 8.10' (1138)

Yield Rate: L-M(H)
Purge Observations: CLEAR

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
1 GAL	10.2/10.2	7.4/7.4	690	20
2.5 GAL	10.4	7.8	738	12

Comments:

METERS USED
Temp: 150 | 148 °C
pH: CP-105 | CP-106 °C
Cond: TLC-10
Turb: LMS-001

DTW Before Sampling: 7.51
Sample Date/Time(s): 12/11/90 1450
Sampling Method: S.S. BAILEY
Sampling Depth(s): MID DEPTH
DTW After Sampling: —
Sampling Observations: SLIGHTLY TURBID
Chain-of-Custody No(s): —
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	<u>9.0</u>	<u>7.6</u>	<u>519</u>	<u>16 (uv)</u>
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Fill. (Y/N)
*3 UOA: 624	V1 16070		N
	V2 16080		
*BN	27228		
TPH	27231	H2SO4	
*+15			

Air Temp: 38°
Weather Conditions: CLOUDY

Crew Chief Signature: DONALD KASSEN

Date: 12/11/90

Date: 12/11/90
Crew: DK JAC JEC
Job No: 535-005
Project: WELL SAMP #
Project Site: BERGSTO

Well ID No: P-18
Well Condition: GOOD
Well Depth/Diameter: 15.28/1.25
Well Casing Type: PVC
Screened Interval:
Casing Ht/Lock No: 2.25 / P-467
Reference Pt: TOP OF PVC
Depth to Water (DTW): 5.20
Water Column; Ht/Vol: 10.08/1.81
Purge Est: 3 Vol EST 2.43 GAL
Purge Date/Time(s): 12/11/90 1014-1054
Purge Method: MASTERFLEX PUMP
Purge Depth(s): SURF-BOTTOM
Purge Rates (gpm): 2.25 GPM
Purged Volume: 3 GAL
DTW After Purging: 7.70' (1100)

Yield Rate: L-M-H

Purge Observations: SLIGHTLY TURBID

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
1 GAL	10.2	7.5	1088	39
2 GAL	10.8	7.3	1059	20
3 GAL	11.2	7.4	1042	05

Comments:

METERS USED

Temp: 150
pH: CP-105 | CP-106 OC
Cond: TLC 10
Turb: LMS 001

DTW Before Sampling: (5.23)
Sample Date/Time(s): 12/11/90 1430
Sampling Method: S.S. BAIR
Sampling Depth(s): MID DEPTH
DTW After Sampling: —
Sampling Observations: SLIGHTLY TURBID
Chain-of-Custody No(s): —
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

Temp. (°C)	pH	Sp. Cond.	Turb.
11.1	7.1	1042	10
Start			
End			

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Fill. (Y/N)
* VOAS 624	V116086	40C	N
	V2 16088		
* BN	15079		
TPH	15076	H2SO4	

* +15

Air Temp: 40°
Weather Conditions: CLOUDY

Crew Chief Signature: D. HASSER

Date: 12/11/90

Date: 12/11/90
Crew: D.K. JAK, J+L
Job No: 535-005
Project: WELL SAMPLER
Project Site: BERGSTON

Well ID No: P-20
Well Condition: GOOD
Well Depth/Diameter: 14.20' / 1.25'
Well Casing Type: PVC
Screened Interval:
Casing Ht/Lock No: 1.60' / P467
Reference Pt: TOP OF PVC
Depth to Water (DTW): 4.77'
Water Column; Ht/Vol: 9.43' / .75'
Purge Est: 3 VOL EST 2.25 GAL
Purge Date/Time(s): 12/11/90 0921-0944
Purge Method: MASTERFLEX PUMP
Purge Depth(s): SURF-BOTTOM
Purge Rates (gpm): 2.75 GPM
Purged Volume: 3 GAL
DTW After Purging: 5.50'

Yield Rate: L-M-H

Purge Observations: SLIGHTLY
TURBID

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURB.
2 GAL	11.7	7.3	1370	05
3 GAL	10.4	7.3	1390	05

Comments:

METERS USED
Temp: 150
pH: CF-105
Cond: TLC-10
Turb: LMS-001

DTW Before Sampling: 4.71'
Sample Date/Time(s): 12/11/90 1415-1615
Sampling Method: TEFLON BAKER
Sampling Depth(s): MID DEPTH
DTW After Sampling: -
Sampling Observations: SLIGHTLY TURBID
Chain-of-Custody No(s): -
Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp.	pH	Cond.	Turb.
Start	<u>10.1</u>	<u>7.4</u>	<u>1402</u>	<u>45</u>
End				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Fill. (Y/N)
* VOA5	624	V116076	N
		V216085	
* BN		27233	
TPH		22240 + 1/2 504	

* + 15

Air Temp: 38°
Weather Conditions: CLOUDY

Crew Chief Signature: DONALD KISSER

Date: 12/11/90

Date: 12/11/90
Crew: DK JFC EC
Job No: 555-005
Project: WELL SAMPLER
Project Site: BOROSTOL

Well ID No: FIELD BLANK

Well Condition: —

Well Depth/Diameter: —

Well Casing Type: —

Screened Interval: —

Casing Ht/Lock No: —

Reference Pt: —

Depth to Water (DTW): —

Water Column; Ht/Vol: —

Purge Est: —

Purge Date/Time(s): —

Purge Method: —

Purge Depth(s): —

Purge Rates (gpm): —

Purged Volume: —

DTW After Purging: —

Yield Rate: L-M-H

Purge Observations: —

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURE.
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X

Comments:

POURED THROUGH
BAILER TO BE USED
ON MW-18

Crew Chief Signature: 12/1/90

METERS USED

Temp: —

pH: —

Cond: —

Turb: —

DTW Before Sampling: —

Sample Date/Time(s): 12/11/90 1505

Sampling Method: TEFLON BAILER

Sampling Depth(s): —

DTW After Sampling: —

Sampling Observations: —

Chain-of-Custody No(s): —

Analytical Lab(s): —

CAMO

WET SAMPLE CHEMISTRIES

Temp. (°C)	pH	Sp. Cond.	Turb.
Start	—	—	—
End	—	—	—

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
* VOA'S 624	11 16071	96C	N
+ 15	12 16091	↓	↓

* + 15

Air Temp: 38°

Weather Conditions: CLOUDY

Date: 12/11/90

Date: 12/11/90
Crew: DK JFC EC
Job No: 535-005
Project: WELL SAMPLER
Project Site: BERGSTAD

Well ID No: TRIP BLANK

Well Condition: —

Well Depth/Diameter: —

Well Casing Type: —

Screened Interval: —

Casing Ht/Lock No: —

Reference Pt: —

Depth to Water (DTW): —

Water Column; Ht/Vol: —

Purge Est: —

Purge Date/Time(s): —

Purge Method: —

Purge Depth(s): —

Purge Rates (gpm): —

Purged Volume: —

DTW After Purging: —

Yield Rate: L-M-H —

Purge Observations: —

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURE.
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Comments:

METERS USED

Temp: —
pH: —
Cond: —
Turb: —

DTW Before Sampling: —

Sample Date/Time(s): —

Sampling Method: —

Sampling Depth(s): —

DTW After Sampling: —

Sampling Observations: —

Chain-of-Custody No(s): —

Analytical Lab(s): CAMO

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
End	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

SAMPLE ANALYSES

Parameters	Inv. No.	Pics. Meth.	Filt. (Y/N)
<u>624+15</u>	<u>V116318</u>		
	<u>V216317</u>		

Crew Chief Signature: DONALD KASSON

Date: 12/11/90

Air Temp: 37°
Weather Conditions: CLOUDY

1. CREW CHIEF: D. KASSELL
2. CREW MEMBER(S): D. D.
3. CLIENT: BERKELEY
4. SURVEY: well development

5. JOB NO: 535-005
6. PROJ. MGR: _____
7. VEHICLE USED: BLUE VAN
8. BOAT(S) USED: _____

B. CREW CHIEF REPORT (COMPLETE AFTER SURVEY.)

1. SURVEY START/END DATE

2. SURVEY START/END TIME

2/5/91, 2/5/91
0800, 1500

3. DESCRIBE DETAILS IN SECTION C:

(a) SAMPLING GEAR WORKING PROPERLY

(b) METERS FIELD CALIBRATED: (1) WATER QUALITY

(2) AIR MONITOR (HNU, OVA, CGI)

(FIELD CALIB. MUST BE ATTACHED TO ORIG. C.C. REPORT & SENT TO QA/QC)

(c) WAS DOWNTIME INCURRED? #HRS?

(d) ANY INCIDENTS, ACCIDENTS, PERTINENT OBSER.

4. WERE FOLLOWING REPORTS COMPLETED & SUBMITTED?

(a) WEATHER CONDITIONS LISTED ON FIELD DATA SHEETS

(b) RADIO LOGS

(c) EQUIPMENT USAGE

(d) BOAT/VEHICLE LOGS

5. BOAT USAGE

(a) ENGINE HOURS

(b) RADIO LOGS

(c) BOAT LOCATION

6. CHAIN OF CUSTODY COMPLETED. SAMPLES SIGNED OVER.

COMMENTS/OBSERVATIONS

ARRIVED ON SITE 0850. ATTEMPTED TO SAMPLE PRODUCT AT MW-18 FILLED 2 VOA VIALS AND 2 LITER AMBER 1 VOA VIAL HAS ABOUT 3/4 PRODUCT. THE OTHER BOTTLE HAVE A LITTLE BIT ON THE SURFACE. A LOT OF THE PRODUCT WAS ON THE OUTSIDE OF THE BAILER. I SET DAW UP AT BIP 6, AND I SET-UP AT MW-18 BOTH DEVELOPE well. Next we did BIP-11 AND MW-20. BIP-11 HAD A LOT OF SILT BUT CLEARED UP. MW-20 CLEARED UP EASILY. AT MW-22 WE WERE UNABLE TO USE THE CENTRIFUGAL PUMP NOT ENOUGH WATER IN THE WELL. WE USED THE MASTERFLEX PUMP WELL CLEARED UP.

OK

DEVELOPMENT WATER FROM MW-18-22 P-6- P-11
DRUMMED AND LEFT ON SITE BX MW-18

NOTE: SEND ORIGINAL CREW CHIEF REPORT TO QA/QC WITHIN 5 DAYS OF SURVEY COMPLETION
SEND YELLOW COPY TO WAREHOUSE. RETAIN PINK COPY FOR C.C. FILE.

C.C. SIGNATURE DONALD KASSELLDATE: 2/5/91

USE ADDITIONAL SHEET(S), IF NECESSARY.

REC'D QAS

FEB 06 1991

1. CREW CHIEF: D. KASSELL
CREW MEMBER(S): J. McKenna
2. CLIENT: BERGSTOL
3. SURVEY: well sample

5. JOB NO: 535-005
6. PROJ. MGR: _____
7. VEHICLE USED: Cube VAN
8. BOAT(S) USED: _____

B. CREW CHIEF REPORT (COMPLETE AFTER SURVEY.)

1. SURVEY START/END DATE

2/12/91 / 2/12/91
0900 / 1630

2. SURVEY START/END TIME

3. DESCRIBE DETAILS IN SECTION C:

(a) SAMPLING GEAR WORKING PROPERLY

(b) METERS FIELD CALIBRATED: (1) WATER QUALITY

(2) AIR MONITOR (HNU, OVA, CGI)

(FIELD CALIB. MUST BE ATTACHED TO ORIG. C.C. REPORT & SENT TO QA/QC)

(c) WAS DOWNTIME INCURRED? #HRS?

(d) ANY INCIDENTS, ACCIDENTS, PERTINENT OBSER.

4. WERE FOLLOWING REPORTS COMPLETED & SUBMITTED?

(a) WEATHER CONDITIONS LISTED ON FIELD DATA SHEETS

(b) RADIO LOGS

(c) EQUIPMENT USAGE

(d) BOAT/VEHICLE LOGS

5. BOAT USAGE

(a) ENGINE HOURS

(b) RADIO LOGS

(c) BOAT LOCATION

6. CHAIN OF CUSTODY COMPLETED. SAMPLES SIGNED OVER.

COMMENTS/OBSERVATIONS

ARRIVED ON SITE 0930. I SET Jim UP ON B/P-6.
WHILE I PURGED MW-18 B/P-6 WAS SAMPLED WITH
MASTERFLEX PUMP. I SAMPLED MW-18 WITH A
MASTERFLEX PUMP THEN SAMPLED WITH A TEFLON BAILER. MW-1
+ MW-20 WAS PURGED WITH CENTRIFUGAL PUMP. MW-22
B/P-6, B/P-11, WERE PURGED AND SAMPLED WITH MASTERFLEX
PUMP.

NOTE: SEND ORIGINAL CREW CHIEF REPORT TO QA/QC WITHIN 5 DAYS OF SURVEY COMPLETION.
SEND YELLOW COPY TO WAREHOUSE. RETAIN PINK COPY FOR C.C. FILE.

C.C. SIGNATURE DONALD KASSELLDATE: 2/13/91

USE ADDITIONAL SHEET(S), IF NECESSARY.

REC'D QAS

FEB 13 1991

LAWLER, MATISKY & SKELLY ENGINEERS
FIELD METER CALIBRATION AND/OR CHECK
DATA SHEET

site: BROOKSTAR
oper: WELL SAMPLE
Calib. By: YML/K

REC'D QAS
FEB 13 1991

b. Include & Diff. calculation for conductivity calibration checks: $\% \text{ Diff} = \frac{\text{Ex} - \text{Ob}}{\text{X } 100}$

WELL SAMPLING LOG

Date: 2/12/91
 Crew: DK Jmch
 Job No: 535-005
 Project: Well Sample
 Project Site: Be-25-701

METERS USED

Temp: 84.8
 pH: CP-107
 Cond: TLC-560
 Turb: LMS-001

Well ID No: MM-15
 Well Condition: GOOD
 Well Depth/Diameter: 15.5/12
 Well Casing Type: PVC
 Screened Interval: Bottom 10'
 Casing Ht/Lock No: STEEL PVC 435 / 2246
 Reference Pt: TOP OF PVC
 Depth to Water (DTW): 8.60'
 Water Column; Ht/Vol: 6.91 / 1.18
 Purge Est: 3 Vol est 1.18 x 3 = 3.54 GAL

DTW Before Sampling: 8.91
 Sample Date/Time(s): 2/12/91 1210-1214
 Sampling Method: MASTERFLEX PUMP
TEFLON BAILER (AA)
 Sampling Depth(s): MID DEPTH
 DTW After Sampling: -
 Sampling Observations: SLIGHTLY TURBID
PARTICLES IN WATER
 Chain-of-Custody No(s):
 Analytical Lab(s):

TAKEN WITH BAILER
 WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before	6.8	7.6	724	7.5
After				12

Purge Date/Time(s): 2/12/91 1046-1049
1056-1104
 Purge Method: CENTRIFUGAL PUMP
 Purge Depth(s): BOTT → SURF
 Purge Rates (gpm): 2.5 GPM
 Purged Volume: 2.2 GAL
 DTW After Purging: DRX

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
VOAS-624 ↓	V1 18565 18564		SAMPLED WITH PUMP
BNA'S	18563		
VOA'S 624	V1 18562 V2 18561		SAMPLED WITH BAILER
BNA'S	18556		

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
3 GAL	8.5	7.4	712	90
17 GAL	8.7	7.4	701	50
27 GAL	8.8	7.4	706	

Comments:

AFTER FILLING VOAS WITH
 PUMP. THE TURBIDITY WAS 7
 AFTER FILLING THE SEMI VOLITILE
 THE TURBIDITY WAS 3

Crew Chief Signature: DONALD KASSELL

Air Temp: 25.0
 Weather Conditions: SUNNY

REC'D QA

FEB 13 1991

Date: 2/13/91

WELL SAMPLING LOG

Date: 2/12/91
 Crew: DK TACK
 Job No: 535-005
 Project: WELL SAMPLING
 Project Site: BERGSTAD

METERS USED

Temp: 848
 pH: CF-107
 Cond: TLC 560
 Turb: LMS 001

Well ID No: MM-20
 Well Condition: GOOD
 Well Depth/Diameter: 13.31/2'
 Well Casing Type: PVC
 Screened Interval: BOTTOM 10'
 Casing Ht/Lock No: STEEL, PVC 3.67' 3.57' 2246
 Reference Pt: TOP OF PVC
 Depth to Water (DTW): 6.75'
 Water Column; Ht/Vol: 6.56/ 1.12
 Purge Est: 3 Vol EST 1.12 X 3 = 3.36 GAL
 Purge Date/Time(s): 2/12/91 1304-1335
 Purge Method: CENTRIFUGAL PUMP
 Purge Depth(s): BOTTOM-SURF
 Purge Rates (gpm): 1 GPM
 Purged Volume: 27 GAL
 DTW After Purging: 10.13'

Yield Rate: L-M-H

Purge Observations: BROWNISH COLOR
 CLEARED UP SLIGHT SHEEN
 NOTICED

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
2 GAL	8.3	7.4	743	170
10 GAL	8.7	7.4	885	35
20 GAL	8.7	7.5	905	45
25 GAL	9.1	7.5	930	10

Comments:

DTW Before Sampling: 6.90'
 Sample Date/Time(s): 2/21/91 1440
 Sampling Method: MASTER FLEX 5000
 Sampling Depth(s): MID DEPTH
 DTW After Sampling: -
 Sampling Observations: CLEAR SLIGHT
 FUEL OIL OIL
 Chain-of-Custody No(s): -
 Analytical Lab(s): -

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before	7.8	7.5	947	10
After				10

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
V045 624	V18505	400	N
	V218506		

Air Temp: 25°
 Weather Conditions: SUNNY
REC'D QAS

FEB 13 1991

Crew Chief Signature: DONALD KASZEM

Date: 2/13/91

WELL SAMPLING LOG

Date: 2/12/91
 Crew: CR. JAMES
 Job No: 544-005
 Project: WELL SAMPLE
 Project Site: BERGOSTAI

METERS USED

Temp: <u>871</u>	QC <u>848</u>
pH: <u>106</u>	QC <u>107</u>
Cond: <u>100</u>	<u>560</u>
Turb: <u>001</u>	

Well ID No: MW-22
 Well Condition: GOOD
 Well Depth/Diameter: 16.07/3
 Well Casing Type: PVC
 Screened Interval:
 Casing Ht/Lock No: STEEL PVC 12004
380 360
 Reference Pt: TOP OF PVC
 Depth to Water (DTW): 6.17
 Water Column; Ht/Vol: 10.85/1.85
 Purge Est: 3 VOL EST 1.85 X 3 = 5.55 GAL

DTW Before Sampling: 6.14
 Sample Date/Time(s): 2.12.91 / 1507
 Sampling Method: MASTERFLEX PUMP
 Sampling Depth(s): MID DEPTH
 DTW After Sampling: —
 Sampling Observations: CLEAR
 Chain-of-Custody No(s):
 Analytical Lab(s):

Purge Date/Time(s): 2/12/91 / 1410-1455
 Purge Method: MASTERFLEX PUMP
 Purge Depth(s): BOTT → SURF
 Purge Rates (gpm): 0.25 GPM
 Purged Volume: 8 GAL
 DTW After Purging: 6.14
 Yield Rate: L-M(H)
 Purge Observations: CLEAR, SLIGHT
FUEL ODOR

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before	<u>4.8</u>	<u>7.9</u>	<u>885</u>	<u>0.5</u>
After				<u>0.7</u>

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
<u>VOAS 624</u>	<u>418514</u>	<u>400</u>	<u>N</u>
	<u>4218515</u>	<u>↓</u>	<u>↓</u>

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
<u>1 gal</u>	<u>7.0</u>	<u>7.6</u>	<u>875</u>	<u>1.7</u>
<u>2.5</u>	<u>6.0</u>	<u>7.7</u>	<u>890</u>	<u>3</u>
<u>4.5</u>	<u>6.5</u>	<u>7.7</u>	<u>890</u>	<u>1.75</u>
<u>7 gal</u>	<u>5.7/5.9</u>	<u>7.9</u>	<u>903/984</u>	<u>0.7</u>

Comments:

Pump on 7.

REC'D QAS

FEB 13 1991

Air Temp: 25.0
 Weather Conditions: SUNNY

Crew Chief Signature: DONALD KASSELLDate: 2/12/91

WELL SAMPLING LOG

Date: 2/12/91
 Crew: DK, JMK
 Job No: 535-005
 Project: Well Sample
 Project Site: BER657

METERS USED

Temp: 871
 pH: 69-106
 Cond: TLC-10
 Turb: LMS-001

Well ID No: B/P-6
 Well Condition: GOOD
 Well Depth/Diameter: 19.18' / 1.25'
 Well Casing Type: PVC
 Screened Interval:
 Casing Ht/Lock No: 1.54 / P-467
 Reference Pt: TOP OF PVC
 Depth to Water (DTW): 3.61'
 Water Column; Ht/Vol: 15.57' / 1.25'
 Purge Est: 3 101 EST 1.25 x 3 = 3.75 GAL
 Purge Date/Time(s): 2/12/91 1014-1120
 Purge Method: MASTERFLEX PUMP
 Purge Depth(s):
 Purge Rates (gpm): < .25 GPM
 Purged Volume: 5 GAL
 DTW After Purging: 6.10'

Yield Rate: L-M-H

Purge Observations: BROWNISH COLOR
CLEARED UP

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
1 gal	5.3	7.6	.635	1.75
2.5 gal	5.3	7.6	.625	7.5
4.0 gal	5.3	7.6	.640	2.4
5.0	5.3	7.6	.635	1.0

Comments:

PUMP SPEED ON 5
After 7 mins went to 3 because it began pulling alot of air

DTW Before Sampling: 4.10
 Sample Date/Time(s): 2/12/91 1130
 Sampling Method: MASTERFLEX PUMP
 Sampling Depth(s): MID DEPTH
 DTW After Sampling: —
 Sampling Observations: clear, no ODO.
 Chain-of-Custody No(s):
 Analytical Lab(s):

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before	<u>50</u>	<u>7.6</u>	<u>.640</u>	<u>11</u>
After	<u>—</u>	<u>—</u>	<u>—</u>	<u>10</u>

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
<u>VOA'S</u>	<u>V1 18558</u>	<u>400</u>	<u>N</u>
<u>624</u>	<u>V2 18559</u>	<u>↓</u>	<u>↓</u>

REC'D QAS

FEB 13 1991

Air Temp: 25°

Weather Conditions: SUNNY

Crew Chief Signature: DONALD KASSER

Date: 2/13/91

WELL SAMPLING LOG

Date: 2/12/91
 Crew: DK Jmck
 Job No: 595-005
 Project: WCH SAMPLE
 Project Site: BERGSTOI

METERS USED

Temp: 871
 pH: CF-106
 Cond: TLC-10
 Turb: LMS-001

Well ID No: BIP-1
 Well Condition: GOOD
 Well Depth/Diameter: 15.84/125
 Well Casing Type: PVC
 Screened Interval:
 Casing Ht/Lock No: 2.85- / P-467
 Reference Pt: TOP OF PVC
 Depth to Water (DTW): 5.70'
 Water Column; Ht/Vol: 10.14 / 0.81'

Purge Est: 3 VOL EST 0.81 x 3 = 2.43 GAL

Purge Date/Time(s): 2/12/91 / 1247-1335 (X)

Purge Method: MASTERFLEX PUMP

Purge Depth(s): BCT7 → SURF

Purge Rates (gpm): c. 25 GPM

Purged Volume: 7.5 gal

DTW After Purging: 5.82'

Yield Rate: L-M-H

Purge Observations:

DTW Before Sampling: 5.82'

Sample Date/Time(s): 2-12-91 / 1350

Sampling Method: MASTERFLEX PUMP

Sampling Depth(s): 10' BCT7

DTW After Sampling: —

Sampling Observations: FAIRLY CLEAR, SLIGHT SET.

Chain-of-Custody No(s):

Analytical Lab(s):

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before	<u>7.5</u>	<u>7.6</u>	<u>838</u>	<u>10</u>
After				<u>10</u>

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
<u>VOAS-624</u>	<u>V1 17105</u>	<u>4100</u>	<u>N</u>
<u>↓</u>	<u>V2 18517</u>	<u>↓</u>	<u>↓</u>

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
<u>* 1 gal</u>	<u>7.8</u>	<u>7.6</u>	<u>824</u>	<u>45</u>
<u>* 2 gal</u>	<u>8.8</u>	<u>7.4</u>	<u>826</u>	<u>14</u>
<u>* 3 gal</u>	<u>8.6</u>	<u>7.4</u>	<u>816</u>	<u>25</u>
<u>7 gal</u>	<u>8.0</u>	<u>7.6</u>	<u>838</u>	<u>8.0</u>

Comments:

Pump on 5 * mild petro/landfill odor.
Pump on 7 after 2 gals (approx 12 min) @ 1300
Reddish brown tint
Pump on 5 after 3.5 gals (X) minor 5 min to refill gpc.
 Crew Chief Signature: DONALD KASSEL

Air Temp: 25°

Weather Conditions: SUNNY

REC'D QAS

FEB 13 1991

Date: 2/13/91

WELL SAMPLING LOG

Date: 3/5/91
 Crew: DK, JFC
 Job No: 535-005
 Project: WELL SAMPLING
 Project Site: BREKSTOI

METERS USED

Temp: 891
 pH: CF-106 - CF-108 or
 Cond: TL-10 - TL-560
 Turb: LMS-001

Well ID No: PP-2
 Well Condition: GOOD
 Well Depth/Diameter: 9.45/2'
 Well Casing Type: PVC
 Screened Interval: 5'
 Casing Ht/Lock No: 1.55/P-806
 Reference Pt: TOP OF PVC
 Depth to Water (DTW): 1.70'
 Water Column; Ht/Vol: 7.75/1.3
 Purge Est: 3 VOL-EST: 1.3 x 3 = 3.9 GAL
 Purge Date/Time(s): 3/5/91 - 1307 - 1341
 Purge Method: MASTER FLEX PUMP
 Purge Depth(s): SURF → BOT
 Purge Rates (gpm): ~0.25 GPM
 Purged Volume: 4 GAL
 DTW After Purging: 1.97'

Yield Rate: L-M(H)

Purge Observations: SLIGHTLY TURBID
NO ODOR

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
1 GAL	8.4	9.3/9.7	298	98
2 GAL	8.4	9.7	355/366	20
3 GAL	8.4	9.7	376	8
4 GAL	8.5	9.7	375	5

Comments:

DTW Before Sampling: 1.75'
 Sample Date/Time(s): 3/5/91 1358-1410
 Sampling Method: MASTER FLEX PUMP
TENSION BAILEY
 Sampling Depth(s): MID SCREEN
 DTW After Sampling: —
 Sampling Observations: SLIGHTLY TURBID
 Chain-of-Custody No(s): NO ODOR
 Analytical Lab(s):

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.	
Before	8.6	9.6	355	15	PUMP
After				40	BAILEY

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)	
VOA'S 624	V1 18381	40C	N	BAILEY
↓	V2 18382	↓	↓	↓
BASE NEUTRALS	18380	↓	↓	PUMP

Air Temp: 45°
 Weather Conditions: SUNNY

REC'D QA:

MAR 06 1991

Crew Chief Signature: DONALD HASSER

Date: 3/6/91

WELL SAMPLING LOG

METERS USED

Date: 4/9/91
 Crew: JAC JMK
 Job No: 535-008
 Project: Bergstad
 Project Site: Bergstad

Temp: _____
 pH: _____
 Cond: _____
 Turb: _____

Well ID No: B-11
 Well Condition: Good
 Well Depth/Diameter: 16.13' / 1' 1/4"
 Well Casing Type: PVC
 Screened Interval: 10'
 Casing Ht/Lock No: 2.9'
 Reference Pt: Top of PVC
 Depth to Water (DTW): 5.52'
 Water Column; Ht/Vol: 10.62' / 1.13 gals
 Purge Est: 3 vols = 3.5 gals
 Purge Date/Time(s): 4/9/91 1015-1030
 Purge Method: Peristaltic Pump
 Purge Depth(s): Surf -> BAT
 Purge Rates (gpm): _____
 Purged Volume: 4 gals
 DTW After Purging: 5.80'

DTW Before Sampling: 5.80'Sample Date/Time(s): 4/9/91 - 1045Sampling Method: Peristaltic Pump / Yellow letterSampling Depth(s): 11.2 ScreenDTW After Sampling: 5.62'Sampling Observations: Clear slight odor

Chain-of-Custody No(s): _____

Analytical Lab(s): CHMD

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	_____	_____	_____	_____
End	_____	_____	_____	_____

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Fill. (Y/N)
VOL G4 V ₁	A17145	4°C	N
V ₂	A17144		

Yield Rate: LM(H)Purge Observations: Clear, strong fuel oil odor
Slight layer of product

PURGE CHEMISTRIES

VOL	TEMP. (°C)	pH	SP. COND.	TURB.
_____	_____	_____	_____	_____

Comments: _____

Air Temp: 75°FWeather Conditions: Partly cloudy, slight breeze

REC'D QAS

MAY 02 1991

Crew Chief Signature: _____

Date: 4/9/91

APPENDIX I
SURFACE WATER SAMPLING

APPENDIX I

SURFACE WATER SAMPLING

On 11 December 1990 surface water samples were collected from the drainage system at two locations identified as S-1 and S-2 (See Plate 1 of the Summary Report). Soil samples were also collected from the stream bottom.

Sample containers and preservatives are summarized below:

SAMPLE TYPE	MATRIX	VOLUME	PRESERVATIVES
VOC	water	2-40 ml	
VOC	soil	2-40 ml	
Base neutral	water	1 l	
Base neutral	soil	250 g	
Petroleum hydrocarbon	water	1 l	H ₂ SO ₄
Petroleum hydrocarbon	soil	250 g	

Field data sheets follow.

ate: 12/11/90

rew: ECH/DK/TC

ite: Bergsta/Flintkote

LAWLER, MATUSKY & SKELLY ENGINEERS
FIELD DATA SHEET FOR SOIL/SEDIMENT SAMPLES

Job No: 535-005

Oper:

Thermometer No:[illegible]

LAWLER, MATUSKY & SKELLY ENGINEERS
FIELD DATA SHEET FOR SURFACE WATER
Job No: 535-008

pH No. _____
 Thermometer No. _____
 SCT No. _____
 Velocity Meter No. _____

[illegible]

APPENDIX J
LABORATORY ANALYSES

APPENDIX J

LABORATORY ANALYSES

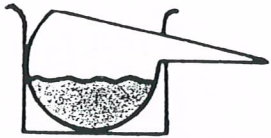
Laboratory analyses were completed for VOCs, base neutrals, and petroleum hydrocarbons. Metals, PCBs, acid extractable compounds, and asbestos were not tested for because these analytes were found to be of no concern for the downgradient properties.

CAMO Laboratories of Poughkeepsie, NY completed the analyses for VOCs and base neutrals. Envirotest Laboratories of Newburgh, NY completed the petroleum hydrocarbon tests, which were all incorporated into the CAMO analytical reports.

EPA GC/MS Method 624 was used for the water VOC tests. This method was also used for the soil tests, except for soil samples collected 20 February 1991 for which Method 8240 was employed. EPA GC/MS Method 625 was used for the base neutral tests and infrared spectrophotometry Method 418.1 was used for petroleum hydrocarbons.

The laboratory reports with chain-of-custody records follow:

Camo Report No.	Sampling Date	Comments
90-12-5176	11 Dec 1990	Groundwater monitoring wells (MW-18 MW-20, B-6, B-9, B-14, B-17, B-18, B-20) and stream water and soil samples
91-01-0423	18 Jan 1991	Tunnel water
91-02-0635	5 Feb 1991	Oil in MW-18
91-02-0722	7-8 Feb 1991 12 Feb 1991	Soil and water samples from Test Pits TP-1 to TP-9. Groundwater monitoring wells (MW-18, MW-20, MW-22, B-6, B-11)
91-02-0859	20 Feb 1991	Soil and water samples from Test Pits TP-A to TP-E
91-03-1080	5-6 Mar 1991	Groundwater monitoring wells (PP-1, PP-2, B-6)
91-04-1684	9 Apr 1991	Groundwater monitoring well (B-11)



CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY:
367 VIOLET AVENUE
POUGHKEEPSIE, NY 12601

(914) 473-9200
FAX 914-473-1962

January 10, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.


John F. Eisenhardt
Laboratory Director

CAMO LABORATORIES, INC
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

Lawler, Matusky & Skelly Engineers
One Blue Hill Plaza
P.O. Box 1509
Pearl River, New York 10965

Date of Invoice: 1-10-91
P.O. #:
Typed by: mbb
Invoice #: 90-12-5172

Attn: Stu Bassell

LMS Project No.: 535-005

Analytical Report

Date Samples Collected: 12-11-90
Date Samples Received: 12-12-90
Samples Collected By: Client
Samples Delivered By: Hugo
Matrix: Water

Sample Identification

(01) See attached

Parameters

Unit/
Measure

(01)

See attached

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

TABLE I

Sample Identifications	Method 624	BN	TPH mg/L	% Solids
(01) MW-18	*	*	558	
(02) MW-20	*	*	3	
(03) MW-22	*	*	4	
(04) BP-6	*	*	25	
(05) BP-9	*	*	<3	
(06) BP-14	*	*	<4	
(07) BP-17	*	*	8	
(08) BP-18	*	*	2	
(09) BP-20	*	*	<3	
(10) SS-1	*	*	8800**	77
(11) SS-2	*	*	1800**	65
(12) SW-2	*	*	58	
(13) SW-1-B	*	*	<3	
(14) Trip Blank	*			
(15) Field Blank	*			

** Sample Identifications (10) and (11) are soils and reported in mg/kg (dry wt.)

* See Attached.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CPMO Laboratories, Inc.
Client Name: Lawler, Matsky & Shelly Eng.
Project/Facility Name:
Sample Location: HW-13
Matrix: Water
Method: EPA 624

Sample ID: 5172-01
Date Collected: 12-11-90
Date Received: 12-12-90
Date Analyzed: 12-14-90
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0	260	
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	160	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0	8	
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
 Client Name: Lawler, Hatusky & Skelly Eng.
 Project/Facility Name:
 Sample Location: MW-20
 Matrix: Water
 Method: EPA 624

Sample ID: 5172-02
 Date Collected: 12-11-90
 Date Received: 12-12-90
 Date Analyzed: 12-17-90
 Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	6	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMC Laboratories, Inc.
 Client Name: Lawler, Matusky & Skelly Eng.
 Project/Facility Name:
 Sample Location: MW-22
 Matrix: Water
 Method: EPA 824

Sample ID: 5172-03
 Date Collected: 12-11-90
 Date Received: 12-12-90
 Date Analyzed: 12-17-90
 Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	24	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0	65	
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawlor, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: BP-6
Matrix: Water
Method: EPA 624

Sample ID: 5172-04
Date Collected: 12-11-90
Date Received: 12-12-90
Date Analyzed: 12-17-90

Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
 Client Name: Lawler, Matusky & Skelly Eng.
 Project/Facility Name:
 Sample Location: BP-9
 Matrix: Water
 Method: EPA 624

Sample ID: 5172-05
 Date Collected: 12-11-90
 Date Received: 12-12-90
 Date Analyzed: 12-17-90
 Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0	18	U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: BF-14
Matrix: Water
Method: EPA 624

Sample ID: 5172-06
Date Collected: 12-11-90
Date Received: 12-12-90
Date Analyzed: 12-17-90
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: BF-17
Matrix: Water
Method: EPA 624

Sample ID: 5172-07
Date Collected: 12-11-90
Date Received: 12-12-90
Date Analyzed: 12-17-90

Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Shelly Eng.
Project/Facility Name:
Sample Location: BF-18
Matrix: Water
Method: EPA 624

Sample ID: 5172-08
Date Collected: 12-11-90
Date Received: 12-12-90
Date Analyzed: 12-17-90
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: BF-20
Matrix: Water
Method: EPA 624

Sample ID: 5172-09
Date Collected: 12-11-90
Date Received: 12-12-90
Date Analyzed: 12-17-90
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CANO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: SS-2
Matrix: Soil
Method: EPA 624

Sample ID: 5172-11
Date Collected: 12/11, 12/12/90
Date Received: 12-12-90
Date Analyzed: 12-18-90
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/kg) as dry wt	Sample Conc. (ug/kg) as dry wt	Q
Chloromethane	15.0		U
Bromomethane	15.0		U
Vinyl Chloride	15.0		U
Chloroethane	15.0		U
Methylene Chloride	8.0		U
Trichlorofluoromethane	8.0		U
Trans-1,2-dichloroethylene	8.0		U
1,1-Dichloroethene	8.0		U
1,1-Dichloroethane	8.0		U
Dichlorodifluoromethane	8.0		U
Chloroform	8.0		U
1,2-Dichloroethane	8.0		U
2-Chloroethylvinyl Ether	15.0		U
1,1,1-Trichloroethane	8.0		U
Carbon Tetrachloride	8.0		U
Bromodichloromethane	8.0		U
1,2-Dichloropropane	8.0		U
cis-1,3-Dichloropropene	8.0		U
Trichloroethene	8.0		U
Dibromochloromethane	8.0		U
1,1,2-Trichloroethane	8.0		U
Benzene	8.0		U
trans-1,3-Dichloropropene	8.0		U
Bromoform	8.0		U
Tetrachloroethene	8.0		U
1,1,2,2-Tetrachloroethane	8.0		U
Toluene	8.0		U
Chlorobenzene	8.0		U
Ethylbenzene	8.0		U
Acrolein	150.0		U
Acrylonitrile	150.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-02
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: B/P - 11 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachloroethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-03
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: MW - 18 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0	130	
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	120	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0	5	
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.	Sample ID: 0722-04
Client Name: Lawler, Matusky & Skelly Engineers	Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005)	Date Received: 2-14-01
Sample Location: MW - 18 - Sampled with pump	Date Analyzed: 2-19-91
Matrix: Water	
Method: EPA 624	Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0	160	
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	140	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0	6	
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-05
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: MW - 20 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	6	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.	Sample ID: 0722-06
Client Name: Lawler, Matusky & Skelly Engineers	Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005)	Date Received: 2-14-01
Sample Location: MW - 22	Date Analyzed: 2-19-91
Matrix: Water	
Method: EPA 624	Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
/ Chloromethane /	10.0	/	/ U /
/ Bromomethane /	10.0	/	/ U /
/ Vinyl Chloride /	10.0	/	/ U /
/ Chloroethane /	10.0	/	/ U /
/ Methylene Chloride /	5.0	/	/ U /
/ Trichlorofluoromethane /	5.0	/	/ U /
/ Trans-1,2-dichloroethylene /	5.0	/	/ U /
/ 1,1-Dichloroethene /	5.0	/	/ U /
/ 1,1-Dichloroethane /	5.0	19	/ /
/ Dichlorodifluoromethane /	5.0	/	/ U /
/ Chloroform /	5.0	/	/ U /
/ 1,2-Dichloroethane /	5.0	/	/ U /
/ 2-Chloroethylvinyl Ether /	10.0	/	/ U /
/ 1,1,1-Trichloroethane /	5.0	52	/ /
/ Carbon Tetrachloride /	5.0	/	/ U /
/ Bromodichloromethane /	5.0	/	/ U /
/ 1,2-Dichloropropane /	5.0	/	/ U /
/ cis-1,3-Dichloropropene /	5.0	/	/ U /
/ Trichloroethene /	5.0	/	/ U /
/ Dibromochloromethane /	5.0	/	/ U /
/ 1,1,2-Trichloroethane /	5.0	/	/ U /
/ Benzene /	5.0	/	/ U /
/ trans-1,3-Dichloropropene /	5.0	/	/ U /
/ Bromoform /	5.0	/	/ U /
/ Tetrachloroethene /	5.0	/	/ U /
/ 1,1,2,2-Tetrachlorethane /	5.0	/	/ U /
/ Toluene /	5.0	/	/ U /
/ Chlorobenzene /	5.0	/	/ U /
/ Ethylbenzene /	5.0	/	/ U /
/ Acrolein /	100.0	/	/ U /
/ Acrylonitrile /	100.0	/	/ U /
/ Xylenes Total /	5.0	/	/ U /

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CANO Laboratories, Inc. Sample ID: 0722-07
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 3 Date Analyzed: 2-19-91
Matrix: Water
Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-08
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: W.S. # 5 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachloroethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CANO Laboratories, Inc. Sample ID: 0722-09
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: W.S. # 6 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethane	5.0		U
1,1,2,2-Tetrachloroethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-10
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: W.S. # 7 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.	Sample ID: 0722-11
Client Name: Lawler, Matusky & Skelly Engineers	Date Collected: 2-7-91
Project/Facility Name: Bergstol (535-005)	Date Received: 2-14-01
Sample Location: W.S. # 8	Date Analyzed: 2-19-91
Matrix: Water	
Method: EPA 624	Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	1000.0		U
Bromomethane	1000.0		U
Vinyl Chloride	1000.0		U
Chloroethane	1000.0		U
Methylene Chloride	500.0		U
Trichlorofluoromethane	500.0		U
Trans-1,2-dichloroethylene	500.0		U
1,1-Dichloroethene	500.0		U
1,1-Dichloroethane	500.0	720	D
Dichlorodifluoromethane	500.0		U
Chloroform	500.0		U
1,2-Dichloroethane	500.0		U
2-Chloroethylvinyl Ether	1000.0		U
1,1,1-Trichloroethane	500.0	12000	D
Carbon Tetrachloride	500.0		U
Bromodichloromethane	500.0		U
1,2-Dichloropropane	500.0		U
cis-1,3-Dichloropropene	500.0		U
Trichloroethene	500.0		U
Dibromochloromethane	500.0		U
1,1,2-Trichloroethane	500.0		U
Benzene	500.0		U
trans-1,3-Dichloropropene	500.0		U
Bromoform	500.0		U
Tetrachloroethene	500.0		U
1,1,2,2-Tetrachloroethane	500.0		U
Toluene	500.0	1000	D
Chlorobenzene	500.0		U
Ethylbenzene	500.0	650	D
Acrolein	100000.0		U
Acrylonitrile	100000.0		U
Xylenes Total	500.0	3500	D

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-12
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-7-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: W.S. # 9 Date Analyzed: 2-19-91
 Matrix: Water
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes Total	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.	Sample ID: 0722-13
Client Name: Lawler, Matusky & Skelly Engineers	Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005)	Date Received: 2-14-01
Sample Location: SS # 1	Date Analyzed: 2-20-91
Matrix: Soil	
Method: EPA 624	Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/kg) *	Sample Conc. (ug/kg) *	Q
Chloromethane	12.0		U
Bromomethane	12.0		U
Vinyl Chloride	12.0		U
Chloroethane	12.0		U
Methylene Chloride	5.8		U
Trichlorofluoromethane	5.8		U
Trans-1,2-dichloroethylene	5.8		U
1,1-Dichloroethene	5.8		U
1,1-Dichloroethane	5.8		U
Dichlorodifluoromethane	5.8		U
Chloroform	5.8		U
1,2-Dichloroethane	5.8		U
2-Chloroethylvinyl Ether	12.0		U
1,1,1-Trichloroethane	5.8		U
Carbon Tetrachloride	5.8		U
Bromodichloromethane	5.8		U
1,2-Dichloropropane	5.8		U
cis-1,3-Dichloropropene	5.8		U
Trichloroethene	5.8		U
Dibromochloromethane	5.8		U
1,1,2-Trichloroethane	5.8		U
Benzene	5.8		U
trans-1,3-Dichloropropene	5.8		U
Bromoform	5.8		U
Tetrachloroethene	5.8		U
1,1,2,2-Tetrachlorethane	5.8		U
Toluene	5.8		U
Chlorobenzene	5.8		U
Ethylbenzene	5.8		U
Acrolein	120.0		U
Acrylonitrile	120.0		U
Xylenes Total	5.8		U

* All results expressed as dry wt. unless otherwise noted.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-14
 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
 Sample Location: SS # 2 Date Analyzed: 2-20-91
 Matrix: Soil
 Method: EPA 624 Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/kg) *	Sample Conc. (ug/kg) *	Q
Chloromethane	12.0		U
Bromomethane	12.0		U
Vinyl Chloride	12.0		U
Chloroethane	12.0		U
Methylene Chloride	5.8		U
Trichlorofluoromethane	5.8		U
Trans-1,2-dichloroethylene	5.8		U
1,1-Dichloroethene	5.8		U
1,1-Dichloroethane	5.8		U
Dichlorodifluoromethane	5.8		U
Chloroform	5.8		U
1,2-Dichloroethane	5.8		U
2-Chloroethylvinyl Ether	12.0		U
1,1,1-Trichloroethane	5.8		U
Carbon Tetrachloride	5.8		U
Bromodichloromethane	5.8		U
1,2-Dichloropropane	5.8		U
cis-1,3-Dichloropropene	5.8		U
Trichloroethene	5.8		U
Dibromochloromethane	5.8		U
1,1,2-Trichloroethane	5.8		U
Benzene	5.8		U
trans-1,3-Dichloropropene	5.8		U
Bromoform	5.8		U
Tetrachloroethene	5.8		U
1,1,2,2-Tetrachloroethane	5.8		U
Toluene	5.8		U
Chlorobenzene	5.8		U
Ethylbenzene	5.8		U
Acrolein	120.0		U
Acrylonitrile	120.0		U
Xylenes Total	5.8		U

* All results expressed as dry wt. unless otherwise noted.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.	Sample ID: 0722-15
Client Name: Lawler, Matusky & Skelly Engineers	Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005)	Date Received: 2-14-01
Sample Location: SS # 3	Date Analyzed: 2-20-91
Matrix: Soil	
Method: EPA 624	Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
Chloromethane	12.0		U
Bromomethane	12.0		U
Vinyl Chloride	12.0		U
Chloroethane	12.0		U
Methylene Chloride	6.0		U
Trichlorofluoromethane	6.0		U
Trans-1,2-dichloroethylene	6.0		U
1,1-Dichloroethene	6.0		U
1,1-Dichloroethane	6.0		U
Dichlorodifluoromethane	6.0		U
Chloroform	6.0	7	
1,2-Dichloroethane	6.0		U
2-Chloroethylvinyl Ether	12.0		U
1,1,1-Trichloroethane	6.0	8	
Carbon Tetrachloride	6.0		U
Bromodichloromethane	6.0		U
1,2-Dichloropropane	6.0		U
cis-1,3-Dichloropropene	6.0		U
Trichloroethene	6.0		U
Dibromochloromethane	6.0		U
1,1,2-Trichloroethane	6.0		U
Benzene	6.0		U
trans-1,3-Dichloropropene	6.0		U
Bromoform	6.0		U
Tetrachloroethene	6.0		U
1,1,2,2-Tetrachlorethane	6.0		U
Toluene	6.0		U
Chlorobenzene	6.0		U
Ethylbenzene	6.0		U
Acrolein	120.0		U
Acrylonitrile	120.0		U
Xylenes Total	6.0		U

* All results expressed as dry wt. unless otherwise noted.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CANO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Engineers
Project/Facility Name: Bergstol (535-005)
Sample Location: NW - 18
Matrix: Water
Method: EPA 625

Sample ID: 0722-03
Date Collected: 2/12/91
Date Received: 2/14/91
Date Extracted: 2/22/91
Date Analyzed: 2/28/91
Date Reported: 3/4/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0	14	
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0	15	
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0	11	
N-Nitrosodiphenylamine (1)	10.0	10	

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0	33	
Anthracene	10.0	13	
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0	120	
Pyrene	10.0	130	
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0	85	
Chrysene	10.0	64	
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0	62	
Benzo(k)fluoranthene	10.0	55	
Benzo(a)pyrene	10.0	64	
Indeno(1,2,3-cd)pyrene	10.0	25	
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0	25	

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Engineers
Project/Facility Name: Bergstol (535-005)
Sample Location: NW - 18 Sampled with pump
Matrix: Water
Method: EPA 625

Sample ID: 0722-04
Date Collected: 02/12/91
Date Received: 2/14/91
Date Extracted: 2/22/91
Date Analyzed: 2/28/91
Date Reported: 3/4/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0	15	
Pyrene	10.0	18	
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Engineers
Project/Facility Name: Bergstol (535-005)
Sample Location: SS # 2
Matrix: Soil
Method: EPA 625

Sample ID: 0722-14
Date Collected: 02/08/91
Date Received: 2/14/91
Date Extracted: 2-21-91
Date Analyzed: 2-25-91
Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
bis(2-Chloroethyl) ether	3800.0		U
1,3-Dichlorobenzene	3800.0		U
1,4-Dichlorobenzene	3800.0		U
Benzidine	15000.0		U
1,2-Dichlorobenzene	3800.0		U
1,2-Diphenylhydrazine	3800.0		U
bis(2-Chloroisopropyl) ether	3800.0		U
N-Nitrosodimethylamine	3800.0		U
N-Nitroso-di-n-propylamine	3800.0		U
Hexachloroethane	3800.0		U
Nitrobenzene	3800.0		U
Isophorone	3800.0		U
bis(2-Chloroethoxy) methane	3800.0		U
1,2,4-Trichlorobenzene	3800.0		U
Naphthalene	3800.0		U
Hexachlorobutadiene	3800.0		U
Hexachlorocyclopentadiene	3800.0		U
2-Chloronaphthalene	3800.0		U
Dimethylphthalate	3800.0		U
Acenaphthylene	3800.0		U
2,6-Dinitrotoluene	3800.0		U
Hexachlorobenzene	3800.0		U
Acenaphthene	3800.0		U
2,4-Dinitrotoluene	3800.0		U
Diethylphthalate	3800.0		U
4-Chlorophenyl-phenylether	3800.0		U
Fluorene	3800.0		U
N-Nitrosodiphenylamine (1)	3800.0		U

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
4-Bromophenyl-phenylether	3800.0		U
Phenanthrene	3800.0		U
Anthracene	3800.0		U
Di-n-butylphthalate	3800.0		U
Fluoranthene	3800.0	7700	
Pyrene	3800.0	9400	
Butylbenzylphthalate	3800.0		U
3,3'-Dichlorobenzidine	7700.0		U
Benzo(a)anthracene	3800.0	7600	
Chrysene	3800.0	8400	
bis(2-Ethylhexyl) phthalate	3800.0		U
Di-n-octylphthalate	3800.0		U
Benzo(b)fluoranthene	3800.0	6000	
Benzo(k)fluoranthene	3800.0	6900	
Benzo(a)pyrene	3800.0	7300	
Indeno(1,2,3-cd)pyrene	3800.0		U
Dibenz(a,h)anthracene	3800.0		U
Benzo(g,h,i)perylene	3800.0		U

* All results expressed as dry wt. unless otherwise noted.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CANO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Engineers
Project/Facility Name: Bergstol (535-005)
Sample Location: SS # 5
Matrix: Soil
Method: EPA 625

Sample ID: 0722-17
Date Collected: 2/12/91
Date Received: 2/14/91
Date Extracted: 2-21-91
Date Analyzed: 2-26-91
Date Reported: 3-4-91

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
bis(2-Chloroethyl) ether	4000.0		U
1,3-Dichlorobenzene	4000.0		U
1,4-Dichlorobenzene	4000.0		U
Benzidine	16000.0		U
1,2-Dichlorobenzene	4000.0		U
1,2-Diphenylhydrazine	4000.0		U
bis(2-Chloroisopropyl) ether	4000.0		U
N-Nitrosodimethylamine	4000.0		U
N-Nitroso-di-n-propylamine	4000.0		U
Hexachloroethane	4000.0		U
Nitrobenzene	4000.0		U
Isophorone	4000.0		U
bis(2-Chloroethoxy) methane	4000.0		U
1,2,4-Trichlorobenzene	4000.0		U
Naphthalene	4000.0		U
Hexachlorobutadiene	4000.0		U
Hexachlorocyclopentadiene	4000.0		U
2-Chloronaphthalene	4000.0		U
Dimethylphthalate	4000.0		U
Acenaphthylene	4000.0		U
2,6-Dinitrotoluene	4000.0		U
Hexachlorobenzene	4000.0		U
Acenaphthene	4000.0	16000	
2,4-Dinitrotoluene	4000.0		U
Diethylphthalate	4000.0		U
4-Chlorophenyl-phenylether	4000.0		U
Fluorene	4000.0	13000	
N-Nitrosodiphenylamine (1)	4000.0		U

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
4-Bromophenyl-phenylether	4000.0		U
Phenanthrene	4000.0	101000	
Anthracene	4000.0	28000	
Di-n-butylphthalate	4000.0		U
Fluoranthene	4000.0	113000	
Pyrene	4000.0	169000	
Butylbenzylphthalate	4000.0		U
3,3'-Dichlorobenzidine	8000.0		U
Benzo(a)anthracene	4000.0	133000	
Chrysene	4000.0	122000	
bis(2-Ethylhexyl) phthalate	4000.0		U
Di-n-octylphthalate	4000.0		U
Benzo(b)fluoranthene	4000.0		U
Benzo(k)fluoranthene	4000.0	169000	
Benzo(a)pyrene	4000.0		U
Indeno(1,2,3-cd)pyrene	4000.0	31000	
Dibenz(a,h)anthracene	4000.0	16000	
Benzo(g,h,i)perylene	4000.0		U

* All results expressed as dry wt. unless otherwise noted.

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Engineers
Project/Facility Name: Bergstol (535-005)
Sample Location: SS # 6
Matrix: Soil
Method: EPA 625

Sample ID: 0722-18
Date Collected: 02/08/91
Date Received: 2/14/91
Date Extracted: 2-21-91
Date Analyzed: 2-26-91
Date Reported: 3-4-91

CONPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
bis(2-Chloroethyl) ether	3800.0		U
1,3-Dichlorobenzene	3800.0		U
1,4-Dichlorobenzene	3800.0		U
Benzidine	15000.0		U
1,2-Dichlorobenzene	3800.0		U
1,2-Diphenylhydrazine	3800.0		U
bis(2-Chloroisopropyl) ether	3800.0		U
N-Nitrosodimethylamine	3800.0		U
N-Nitroso-di-n-propylamine	3800.0		U
Hexachloroethane	3800.0		U
Nitrobenzene	3800.0		U
Isophorone	3800.0		U
bis(2-Chloroethoxy) methane	3800.0		U
1,2,4-Trichlorobenzene	3800.0		U
Naphthalene	3800.0		U
Hexachlorobutadiene	3800.0		U
Hexachlorocyclopentadiene	3800.0		U
2-Chloronaphthalene	3800.0		U
Dimethylphthalate	3800.0		U
Acenaphthylene	3800.0		U
2,6-Dinitrotoluene	3800.0		U
Hexachlorobenzene	3800.0		U
Acenaphthene	3800.0		U
2,4-Dinitrotoluene	3800.0		U
Diethylphthalate	3800.0		U
4-Chlorophenyl-phenylether	3800.0		U
Fluorene	3800.0		U
N-Nitrosodiphenylamine (1)	3800.0		U

CONPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
4-Bromophenyl-phenylether	3800.0		U
Phenanthrene	3800.0	16000	
Anthracene	3800.0	5600	
Di-n-butylphthalate	3800.0		U
Fluoranthene	3800.0	45000	
Pyrene	3800.0	48000	
Butylbenzylphthalate	3800.0		U
3,3'-Dichlorobenzidine	7700.0		U
Benzo(a)anthracene	3800.0	35000	
Chrysene	3800.0	37000	
bis(2-Ethylhexyl) phthalate	3800.0		U
Di-n-octylphthalate	3800.0		U
Benzo(b)fluoranthene	3800.0	41000	
Benzo(k)fluoranthene	3800.0	29000	
Benzo(a)pyrene	3800.0	38000	
Indeno(1,2,3-cd)pyrene	3800.0	3800	
Dibenz(a,h)anthracene	3800.0		U
Benzo(g,h,i)perylene	3800.0	8400	

LAWLER, MATUSKY & SKELLY ENGINEERS
CHAIN OF CUSTODY RECORD

Page ____ of ____

PROJECT No. 535
LMS FACILITY N York

PROJECT Burgstol
COLLECTION Burgstol
SITE Burgstol
FIELD T.Z. J.H.
PERSONNEL T.Z. J.H.
Bottom Sediment Soil

SAMPLE TYPE (Circle):

Drinking Water ☐ Stream/Pond ☐ Monitoring Wells ☐
Industrial Waste ☒ River/Ocean ☐ Treatment Facility ☐
Coliform (T/F) ☐ Leachate ☐ Other ☐

SAMPLE ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS	SAMPLE PREP	
					PRESERVATIVE	FILTER (Y/N)
T.P. # 1	2-5-91	1100	T.P. # 1			
T.P. # 2		1100	T.P. # 2			
T.P. # 3		1130	T.P. # 3			
T.P. # 4		1200	T.P. # 4			
T.P. # 5		1330	T.P. # 5			
T.P. # 6		1000	T.P. # 6			
T.P. # 7		1300	T.P. # 7			
U.S. # 3		1238	T.P. # 3			
W.S. # 5		1330	T.P. # 5			
W.S. # 6		1000	T.P. # 6			
U.S. # 7		1300	T.P. # 7			
W.S. # 8	2-7-91	1200	Tunnel 1200			
W.S. # 9	2-7-91	1400	Tunnel 1400			
Relinquished By: <u>T.Z.</u> Date/Time: <u>13</u> No. Bottles: <u>13</u> Received By: <u>J. Mc</u>						
Relinquished By: <u>J. Mc</u> Date/Time: <u>2-8-91 1705</u> Received By: <u>J. Mc</u>						
Relinquished By: <u>J. Mc</u> Date/Time: <u></u> Received By: <u>J. Mc</u>						
Messenger: <u></u> Shipped To: <u></u> Received at Laboratory By: <u></u>						
Remarks: <u></u>						

One Blue Hill Plaza, Pearl River, New York 10965
(914) 735-8300
Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

REC'D QAS

FEB 21 1991

Page 1 of 1

PROJECT Berastol

COLLECTION

SITE _____

FIELD

PERSONNEL 72

Drinking Water

Stream/Pond

Monitoring Wells

Bottom Sediment

Industrial Waste

River/Ocean

Treatment Facility

Soil

Coliform (T / F)

Leachate

Other

Paul
2/15/91
535-205
C-O-C sheets with
white copy missing were
sent with samples to
CSTMO (2/14/91)
Cruz

Date/Time

No. Bottles:

Received By

Date/Time

Received By

Relinquished By

Date/Time

Received By _____

Messenger

Shipped To:

Received at Laboratory By _____

Remarks:

One Blue Hill Plaza, Pearl River, New York 10965
(914) 735-8300

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

REC'D QAS

FEB 21 1991

Page 1 of 1

LMS FACILITY Nyack

PROJECT _____
COLLECTION _____
SITE Bergstol
FIELD _____
PERSONNEL TZ Jim'K

Drinking Water	Stream/Pond	Monitoring Wells
Industrial Waste	River/Ocean	Treatment Facility
Coliform (T / F)	Leachate	Other

Bottom Sediment
Soil

One Blue Hill Plaza, Pearl River, New York 10965
(914) 235-8300

REC'D QAS

FEB 21 1991

Nyack

TION
Bergstol

DK Jmck

Other

impaled
with
bailer

FEB 21 1991

LMS FACILITY NYACK

PROJECT well sample
COLLECTION SITE BFGSTOI
FIELD PERSONNEL DK, JMK

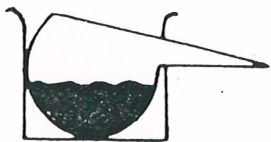
Drinking Water	Stream/Pond	<u>Monitoring Wells</u>
Industrial Waste	River/Ocean	Treatment Facility
Coliform (T / F)	Leachate	Other

Bottom Sediment
Soil

AMPLIFIED
WITH
Bailer

18556
gms

FEB 21 1991



CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY:
367 VIOLET AVENUE
POUGHKEEPSIE, NY 12601

(914) 473-9200
FAX 914-473-1962

March 8, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

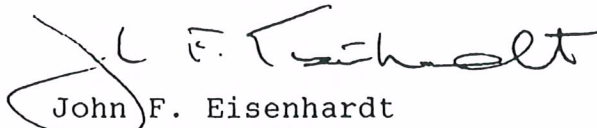
All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.


John F. Eisenhardt
Laboratory Director

REC'D QAS

MAR 12 1991

CAMO LABORATORIES, INC
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

QA Department
Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, New York 10960

Date of Invoice: 3/08/91
P.O. #: 27274
Typed by: kas
Invoice #: 91-02-0859

LMS Project No.: 535-005
Bergstol

Analytical Report

Sample Identification

Date Samples Collected: 2/20/91
Date Samples Received: 2/22/91
Samples Collected By: Client
Samples Delivered By: Hugo
Matrix: Water/Soil

(01) WS #A	(05) WS #D2
(02) WS #B	(06) WS #E
(03) WS #C	(07) SS #A 4'-6'
(04) WS #D1	(08) SS #B 2'-4'

Parameters	Unit/ Measure	(01)	(02)	(03)	(04)
EPA Method 624 & Xylene		*	*	*	*
TPH by IR	mg/kg wet wt.				
Method 8240	ug/kg				
% Solid	%				

Analysis Comments: * See attached tables

Page 1 of 2.

Comments: All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

CAMO LABORATORIES, INC
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

QA Department
Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, New York 10960

Date of Invoice: 3/08/91
P.O. #: 27274
Typed by: kas
Invoice #: 91-02-0859

LMS Project No.: 535-005
Bergstol

Analytical Report

Sample Identification

Date Samples Collected: 2/20/91
Date Samples Received: 2/22/91
Samples Collected By: Client
Samples Delivered By: Hugo
Matrix: Water/Soil

(01) WS #A	(05) WS #D2
(02) WS #B	(06) WS #E
(03) WS #C	(07) SS #A 4'-6'
(04) WS #D1	(08) SS #B 2'-4'

Parameters	Unit/ Measure	(05)	(06)	(07)	(08)
EPA Method 624 & Xylene		*	*		
TPH by IR	mg/kg wet wt.			22,000	2,000
Method 8240	ug/kg			*	*
% Solid	%			83	38

Analysis Comments: * See attached tables

Page 2 of 2.

Comments: All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol 535-005
Sample Location: WS #A
Matrix: Water
Method: EPA 624

Sample ID: 0859-01
Date Collected: 2/20/91
Date Received: 2/22/91
Date Analyzed: 2/27/91
Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	160	
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes	5.0		U



CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY:
367 VIOLET AVENUE
POUGHKEEPSIE, NY 12601

(914) 473-9200
FAX 914-473-1962

April 15, 1991

Dear Client:

Enclosed please find your sample results and our invoice for services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John F. Eisenhardt
Laboratory Director

CAMO LABORATORIES, INC
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

QA Department
Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, New York 10960

Date of Invoice: 4/15/91
P.O. #: 27051
Typed by: kas
Invoice #: 91-04-1684

LMS Project No.: 535-005

Analytical Report

Sample Identification

Date Samples Collected: 4/09/91
Date Samples Received: 4/09/91
Samples Collected By: Client
Samples Delivered By: Client
Matrix: Water

(01) B-11

Parameters	Unit/ Measure	(01)
EPA Method 624	ug/l	*

Analysis Comments: * See attached tables.

Results called into Stu Bassel on 4/10/91 at 11:30 am.

Comments: All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
 Client Name: LMS
 Project/Facility Name: Bergstol 535-005
 Sample Location: B-11
 Matrix: Water
 Method: EPA 624

Sample ID: 1684-01
 Date Collected: 4/09/91
 Date Received: 4/09/91
 Date Analyzed: 4/09/91
 Date Reported: 4/15/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0	4.0	J
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: Field Blank
Matrix: Water
Method: EPA 625 (BN Only)

Sample ID: 1080-04
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91
Date Reported: 3-19-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol 535-005
Sample Location: WS #D1
Matrix: Water
Method: EPA 624

Sample ID: 0859-04
Date Collected: 2/20/91
Date Received: 2/22/91
Date Analyzed: 2/27/91
Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol 535-005
Sample Location: WS #D2
Matrix: Water
Method: EPA 624

Sample ID: 0859-05
Date Collected: 2/20/91
Date Received: 2/22/91
Date Analyzed: 2/27/91
Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol 535-005
Sample Location: WS #E
Matrix: Water
Method: EPA 624

Sample ID: 0859-06
Date Collected: 2/20/91
Date Received: 2/22/91
Date Analyzed: 2/27/91
Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0	13	
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylenes	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
 Client Name: LMS
 Project/Facility Name: Bergstol 535-005
 Sample Location: SS #A 4'-6'
 Matrix: Soil
 Method: EPA 8240

Sample ID: 0859-07A
 Date Collected: 2/20/91
 Date Received: 2/22/91
 Date Analyzed: 3/07/91
 Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
Chloromethane	12		U
Bromomethane	12		U
Vinyl Chloride	12		U
Chloroethane	12		U
Methylene Chloride	6	7	B
Acetone	12	55	B
Carbon Disulfide	6		U
1,1-Dichloroethene	6		U
1,1-Dichloroethane	6		U
1,2-Dichloroethene (Total)	6		U
Chloroform	6		U
1,2-Dichloroethane	6		U
2-Chloroethylvinyl Ether	12		U
2-Butanone	12		U
1,1,1-Trichloroethane	6		U
Carbon Tetrachloride	6		U
Vinyl Acetate	12		U
Bromodichloromethane	6		U
1,2-Dichloropropane	6		U
cis-1,3-Dichloropropene	6		U
Trichloroethene	6		U
Dibromochloromethane	6		U
1,1,2-Trichloroethane	6		U
Benzene	6		U
trans-1,3-Dichloropropene	6		U
Bromoform	6		U
4-Methyl-2-Pentanone	12		U
2-Hexanone	12		U
Tetrachloroethene	6		U
1,1,2,2-Tetrachlorethane	6		U
Toluene	6		U
Chlorobenzene	6		U
Ethylbenzene	6		U
Styrene	6		U
Total Xylenes	6		U

* as dry wt.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
 Client Name: LMS
 Project/Facility Name: Bergstol 535-005
 Sample Location: SS #B 2'-4'
 Matrix: Soil
 Method: EPA 8240

Sample ID: 0859-08A
 Date Collected: 2/20/91
 Date Received: 2/22/91
 Date Analyzed: 3/07/91
 Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q
Chloromethane	132		U
Bromomethane	132		U
Vinyl Chloride	132		U
Chloroethane	132		U
Methylene Chloride	66	239	B
Acetone	132	1400	B
Carbon Disulfide	66		U
1,1-Dichloroethene	66		U
1,1-Dichloroethane	66	579	
1,2-Dichloroethene (Total)	66		U
Chloroform	66		U
1,2-Dichloroethane	66		U
2-Chloroethylvinyl Ether	132		U
2-Butanone	132		U
1,1,1-Trichloroethane	66		U
Carbon Tetrachloride	66		U
Vinyl Acetate	132		U
Bromodichloromethane	66		U
1,2-Dichloropropane	66		U
cis-1,3-Dichloropropene	66		U
Trichloroethene	66		U
Dibromochloromethane	66		U
1,1,2-Trichloroethane	66		U
Benzene	66		U
trans-1,3-Dichloropropene	66		U
Bromoform	66		U
4-Methyl-2-Pentanone	132	316	
2-Hexanone	132		U
Tetrachloroethene	66		U
1,1,2,2-Tetrachlorethane	66		U
Toluene	66	245	
Chlorobenzene	66	447	
Ethylbenzene	66	1080	
Styrene	66		U
Total Xylenes	66	11800	

* as dry wt.

535-005

11/ACK

Drinking water

Industrial waste

Coliform. (T / F)

Stream/Pond

River/Ocean

Leachate

Monitoring- Wells

Treatment Facility

Other 9014

BEAGSTOL

COLLECTION

SITE

FIELD

PERSONNEL T. Z. B. Lip. J. McK.

Bottom Sediment

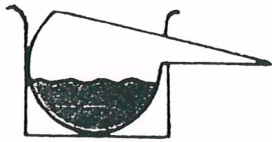
Soil

2/27/71

One Blue Hill Plaza, Pearl River, New York 10965

(914) 735-8500

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960



CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY:
367 VIOLET AVENUE
POUGHKEEPSIE, NY 12601

(914) 473-9200
FAX 914-473-1962

March 20, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

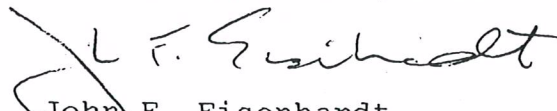
All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.


John F. Eisenhardt
Laboratory Director

REC'D QAS

MAR 25 1991

CAMO LABORATORIES
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

QA Department
Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, New York 10960

Date of Invoice: 3-19-91
P.O. #: 27274
Typed by: mlj
Invoice #: 91-03-1080

LMS Project No.: 535-005

Facility: Bergstol

Analytical Report

Sample Identification

Date Samples Collected:	3-6-91	(01)	PP1
Date Samples Received:	3-7-91	(02)	P-6
Samples Collected By:	Client	(03)	PP2
Samples Delivered By:	Hugo Messenger	(04)	Field Blank
Matrix:	Water		

Parameters	Unit/ Measure	(01)	(02)	(03)	(04)
Method 624 & Xylenes	ug/L	*		*	
Base Neutrals	ug/L	*	*	*	*

Analysis Comments: * See attached tables.

Comments: All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: PP1
Matrix: Water
Method: EPA 624

Sample ID: 1080-01
Date Collected: 3-6-91
Date Received: 3-7-91
Date Analyzed: 3-10-91
Date Reported: 3-19-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylene	5.0		U

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: PP2
Matrix: Water
Method: EPA 624

Sample ID: 1080-03A
Date Collected: 3-6-91
Date Received: 3-7-91
Date Analyzed: 3-12-91
Date Reported: 3-19-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Xylene	5.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: PF1
Matrix: Water
Method: EPA 625 (BN Only)

Sample ID: 1080-01
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91
Date Reported: 3-19-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: C&G Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: P-6
Matrix: Water
Method: EPA 625 (BW Only)

Sample ID: 1080-02
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91
Date Reported: 3-19-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: PP2
Matrix: Water
Method: EPA 625 (BW Only)

Sample ID: 1080-03
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91
Date Reported: 3-19-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0	25	
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0	13	
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0	13	
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

Page / of /

Project: 23541

Collection

Site: 50.5-41

Field

Personnel: JAC Jink

Drinking Water

Stream/Pond

Industrial Waste

River/Ocean

Coliform (T)

Coliform (F)

Monitoring Wells

Treatment Facility

Other

Bottom Sediment

Soil

One Blue Hill Plaza, Pearl River, New York
(914) 735-8300
Sample Drop Off: 53 Hudson Avenue, Nyack, New York 10960

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: MW-22
Matrix: Water
Method: EPA 825

Sample ID: 5172-03
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-27-90
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q	COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U	4-Bromophenyl-phenylether	10.0		U
1,3-Dichlorobenzene	10.0		U	Phenanthrene	10.0		U
1,4-Dichlorobenzene	10.0		U	Anthracene	10.0		U
Benzidine	40.0		U	Di-n-butylphthalate	10.0		U
1,2-Dichlorobenzene	10.0		U	Fluoranthene	10.0		U
1,2-Diphenylhydrazine	10.0		U	Pyrene	10.0	10	
bis(2-Chloroisopropyl) ether	10.0		U	Butylbenzylphthalate	10.0		U
N-Nitrosodimethylamine	10.0		U	3,3'-Dichlorobenzidine	20.0		U
N-Nitroso-di-n-propylamine	10.0		U	Benzo(a)anthracene	10.0		U
Hexachloroethane	10.0		U	Chrysene	10.0		U
Nitrobenzene	10.0		U	bis(2-Ethylhexyl) phthalate	10.0		U
Isophorone	10.0		U	Di-n-octylphthalate	10.0		U
bis(2-Chloroethoxy) methane	10.0		U	Benzo(b)fluoranthene	10.0		U
1,2,4-Trichlorobenzene	10.0		U	Benzo(k)fluoranthene	10.0		U
Naphthalene	10.0		U	Benzo(a)pyrene	10.0		U
Hexachlorobutadiene	10.0		U	Indeno(1,2,3-cd)pyrene	10.0		U
Hexachlorocyclopentadiene	10.0		U	Dibenz(a,h)anthracene	10.0		U
2-Chloronaphthalene	10.0		U	Benzo(g,h,i)perylene	10.0		U
Dimethylphthalate	10.0		U				
Acenaphthylene	10.0		U				
2,6-Dinitrotoluene	10.0		U				
Hexachlorobenzene	10.0		U				
Acenaphthene	10.0	39					
2,4-Dinitrotoluene	10.0		U				
Diethylphthalate	10.0		U				
4-Chlorophenyl-phenylether	10.0		U				
Fluorene	10.0	12					
N-Nitrosodiphenylamine (1)	10.0		U				

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMC Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: BF-6
Matrix: Water
Method: EPA 625

Sample ID: 5172-04A
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-20-90
Date Analyzed: 01-08-91
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q	COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U	4-Bromophenyl-phenylether	10.0		U
1,3-Dichlorobenzene	10.0		U	Phenanthrene	10.0	20	
1,4-Dichlorobenzene	10.0		U	Anthracene	10.0		U
Benzidine	40.0		U	Di-n-butylphthalate	10.0		U
1,2-Dichlorobenzene	10.0		U	Fluoranthene	10.0	240	
1,2-Diphenylhydrazine	10.0		U	Pyrene	10.0	100	
bis(2-Chloroisopropyl) ether	10.0		U	Butylbenzylphthalate	10.0		U
N-Nitrosodimethylamine	10.0		U	3,3'-Dichlorobenzidine	20.0		U
N-Nitroso-di-n-propylamine	10.0		U	Benzo(a)anthracene	10.0	130	
Hexachloroethane	10.0		U	Chrysene	10.0	130	
Nitrobenzene	10.0		U	bis(2-Ethylhexyl) phthalate	10.0		U
Isophorone	10.0		U	Di-n-octylphthalate	10.0		U
bis(2-Chloroethoxy) methane	10.0		U	Benzo(b)fluoranthene	10.0	190	
1,2,4-Trichlorobenzene	10.0		U	Benzo(k)fluoranthene	10.0	130	
Naphthalene	10.0		U	Benzo(a)pyrene	10.0	150	
Hexachlorobutadiene	10.0		U	Indeno(1,2,3-cd)pyrene	10.0		U
Hexachlorocyclopentadiene	10.0		U	Dibenz(a,h)anthracene	10.0		U
2-Chloronaphthalene	10.0		U	Benzo(g,h,i)perylene	10.0		U
Dimethylphthalate	10.0		U				
Acenaphthylene	10.0		U				
2,6-Dinitrotoluene	10.0		U				
Hexachlorobenzene	10.0		U				
Acenaphthene	10.0		u				
2,4-Dinitrotoluene	10.0		U				
Diethylphthalate	10.0		U				
4-Chlorophenyl-phenylether	10.0		U				
Fluorene	10.0		u				
N-Nitrosodiphenylamine (1)	10.0		U				

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CEMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: BP-9
Matrix: Water
Method: EPA 625

Sample ID: 5172-05
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-20-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q	COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U	4-Bromophenyl-phenylether	10.0		U
1,3-Dichlorobenzene	10.0		U	Phenanthrene	10.0		U
1,4-Dichlorobenzene	10.0		U	Anthracene	10.0		U
Benzidine	40.0		U	Di-n-butylphthalate	10.0		U
1,2-Dichlorobenzene	10.0		U	Fluoranthene	10.0		U
1,2-Diphenylhydrazine	10.0		U	Pyrene	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U	Butylbenzylphthalate	10.0		U
N-Nitrosodimethylamine	10.0		U	3,3'-Dichlorobenzidine	20.0		U
N-Nitroso-di-n-propylamine	10.0		U	Benzo(a)anthracene	10.0		U
Hexachloroethane	10.0		U	Chrysene	10.0		U
Nitrobenzene	10.0		U	bis(2-Ethylhexyl) phthalate	10.0		U
Isophorone	10.0		U	Di-n-octylphthalate	10.0		U
bis(2-Chloroethoxy) methane	10.0		U	Benzo(b)fluoranthene	10.0		U
1,2,4-Trichlorobenzene	10.0		U	Benzo(k)fluoranthene	10.0		U
Naphthalene	10.0		U	Benzo(a)pyrene	10.0		U
Hexachlorobutadiene	10.0		U	Indeno(1,2,3-cd)pyrene	10.0		U
Hexachlorocyclopentadiene	10.0		U	Dibenz(a,h)anthracene	10.0		U
2-Chloronaphthalene	10.0		U	Benzo(g,h,i)perylene	10.0		U
Dimethylphthalate	10.0		U				
Acenaphthylene	10.0		U				
2,6-Dinitrotoluene	10.0		U				
Hexachlorobenzene	10.0		U				
Acenaphthene	10.0		U				
2,4-Dinitrotoluene	10.0		U				
Diethylphthalate	10.0		U				
4-Chlorophenyl-phenylether	10.0		U				
Fluorene	10.0		U				
N-Nitrosodiphenylamine (1)	10.0		U				

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: BP-14
Matrix: Water
Method: EPA 625

Sample ID: 5172-06
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

SEMITOILEPTILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: BF-17
Matrix: Water
Method: EPA 625

Sample ID: 5172-07
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-20-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Ancenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CARGO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: BP-18
Matrix: Water
Method: EPA 625

Sample ID: 5172-08
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q	COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U	4-Bromophenyl-phenylether	10.0		U
1,3-Dichlorobenzene	10.0		U	Phenanthrene	10.0		U
1,4-Dichlorobenzene	10.0		U	Anthracene	10.0		U
Benzidine	40.0		U	Di-n-butylphthalate	10.0		U
1,2-Dichlorobenzene	10.0		U	Fluoranthene	10.0		U
1,2-Diphenylhydrazine	10.0		U	Pyrene	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U	Butylbenzylphthalate	10.0		U
N-Nitrosodimethylamine	10.0		U	3,3'-Dichlorobenzidine	20.0		U
N-Nitroso-di-n-propylamine	10.0		U	Benzo(a)anthracene	10.0		U
Hexachloroethane	10.0		U	Chrysene	10.0		U
Nitrobenzene	10.0		U	bis(2-Ethylhexyl) phthalate	10.0		U
Isophorone	10.0		U	Di-n-octylphthalate	10.0		U
bis(2-Chloroethoxy) methane	10.0		U	Benzo(b)fluoranthene	10.0		U
1,2,4-Trichlorobenzene	10.0		U	Benzo(k)fluoranthene	10.0		U
Naphthalene	10.0		U	Benzo(a)pyrene	10.0		U
Hexachlorobutadiene	10.0		U	Indeno(1,2,3-cd)pyrene	10.0		U
Hexachlorocyclopentadiene	10.0		U	Dibenz(a,h)anthracene	10.0		U
2-Chloronaphthalene	10.0		U	Benzo(g,h,i)perylene	10.0		U
Dimethylphthalate	10.0		U				
Acenaphthylene	10.0		U				
2,6-Dinitrotoluene	10.0		U				
Hexachlorobenzene	10.0		U				
Acenaphthene	10.0		U				
2,4-Dinitrotoluene	10.0		U				
Diethylphthalate	10.0		U				
4-Chlorophenyl-phenylether	10.0		U				
Fluorene	10.0		U				
N-Nitrosodiphenylamine (1)	10.0		U				

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: BP-20
Matrix: Water
Method: EPA 625

Sample ID: 5172-09
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		u
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U
Phenol	10.0		U
2-Nitrophenol	10.0		U
4-Nitrophenol	10.0		U
2,4-Dinitrophenol	50.0		U
4,6-Dinitro-o-cresol	50.0		U
Pentachlorophenol	50.0		U
p-Chloro-m-cresol	10.0		U
2-Chlorophenol	10.0		U
2,4-Dichlorophenol	10.0		U
2,4,6-Trichlorophenol	10.0		U
2,4-Dimethylphenol	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: SS-1
Matrix: Soil
Method: EPA 625

Sample ID: 5172-10
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-20-90
Date Analyzed: 12-21-90
Date Reported: 1-10-91

Solids 77%

DF = 10

COMPOUND	Detection Limit (ug/kg)	Sample Conc. (ug/kg)*	Q	COMPOUND	Detection Limit (ug/kg)	Sample Conc. (ug/kg)*	Q
bis(2-Chloroethyl) ether	4300.0		U	4-Bromophenyl-phenylether	4300.0		U
1,3-Dichlorobenzene	4300.0		U	Phenanthrene	4300.0	87.000	
1,4-Dichlorobenzene	4300.0		U	Anthracene	4300.0	17.000	
Benzidine	17000.0		U	Di-n-butylphthalate	4300.0		U
1,2-Dichlorobenzene	4300.0		U	Fluoranthene	4300.0	66.000	
1,2-Diphenylhydrazine	4300.0		U	Pyrene	4300.0	257.000	
bis(2-Chloroisopropyl) ether	4300.0		U	Butylbenzylphthalate	4300.0		U
N-Nitrosodimethylamine	4300.0		U	3,3'-Dichlorobenzidine	8600.0		U
N-Nitroso-di-n-propylamine	4300.0		U	Benzo(a)anthracene	4300.0	58.000	
Hexachloroethane	4300.0		U	Chrysene	4300.0	59.000	
Nitrobenzene	4300.0		U	bis(2-Ethylhexyl) phthalate	4300.0		U
Isophorone	4300.0		U	Di-n-octylphthalate	4300.0		U
bis(2-Chloroethoxy) methane	4300.0		U	Benzo(b)fluoranthene	4300.0	65.000	
1,2,4-Trichlorobenzene	4300.0		U	Benzo(k)fluoranthene	4300.0	55.000	
Naphthalene	4300.0		U	Benzo(a)pyrene	4300.0	60.000	
Hexachlorobutadiene	4300.0		U	Indeno(1,2,3-cd)pyrene	4300.0	22.000	
Hexachlorocyclopentadiene	4300.0		U	Dibenzo(a,h)anthracene	4300.0		U
2-Chloronaphthalene	4300.0		U	Benzo(g,h,i)perylene	4300.0	17.000	
Dimethylphthalate	4300.0		U				
Acenaphthylene	4300.0		U				
2,6-Dinitrotoluene	4300.0		U				
Hexachlorobenzene	4300.0		U				
Acenaphthene	4300.0	18.000					
2,4-Dinitrotoluene	4300.0		U				
Diethylphthalate	4300.0		U				
4-Chlorophenyl-phenylether	4300.0		U				
Fluorene	4300.0	10.000					
N-Nitrosodiphenylamine (1)	4300.0		U				

* Dry Weight

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CCMO Laboratories, Inc.
Client Name: Lawler, Matusky & Shelly Eng.
Project/Facility Name: Bergstol
Sample Location: SS-2
Matrix: Soil
Method: EPA 625

Sample ID: 5172-11
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-20-90
Date Analyzed: 12-23-90
Date Reported: 1-10-91

Solids 65%

DF = 10

COMPOUND	Detection Limit (ug/kg)	Sample Conc. (ug/kg)*	Q
bis(2-Chloroethyl) ether	5100.0		U
1,3-Dichlorobenzene	5100.0		U
1,4-Dichlorobenzene	5100.0		U
Benzidine	20000.0		U
1,2-Dichlorobenzene	510.0		U
1,2-Diphenylhydrazine	510.0		U
bis(2-Chloroisopropyl) ether	510.0		U
N-Nitrosodimethylamine	510.0		U
N-Nitroso-di-n-propylamine	510.0		U
Hexachloroethane	510.0		U
Nitrobenzene	510.0		U
Isophorone	510.0		U
bis(2-Chloroethoxy) methane	510.0		U
1,2,4-Trichlorobenzene	510.0		U
Naphthalene	510.0		U
Hexachlorobutadiene	510.0		U
Hexachlorocyclopentadiene	510.0		U
2-Chloronaphthalene	510.0		U
Dimethylphthalate	510.0		U
Acenaphthylene	510.0	6.000	
2,6-Dinitrotoluene	510.0		U
Hexachlorobenzene	510.0		U
Acenaphthene	510.0		U
2,4-Dinitrotoluene	510.0		U
Diethylphthalate	510.0		U
4-Chlorophenyl-phenylether	510.0		U
Fluorene	510.0		U
N-Nitrosodiphenylamine (i)	510.0		U

COMPOUND	Detection Limit (ug/kg)	Sample Conc. (ug/kg)*	Q
4-Bromophenyl-phenylether	5100.0		U
Phenanthrene	5100.0	65.000	
Anthracene	5100.0	15.000	
Di-n-butylphthalate	5100.0		U
Fluoranthene	5100.0	37.000	
Pyrene	5100.0	366.000	
Butylbenzylphthalate	5100.0		U
3,3'-Dichlorobenzidine	10000.0		U
Benzo(a)anthracene	5100.0	74.000	
Chrysene	5100.0	83.000	
bis(2-Ethylhexyl) phthalate	5100.0		U
Di-n-octylphthalate	5100.0		U
Benzo(b)fluoranthene	5100.0	60.000	
Benzo(k)fluoranthene	5100.0	54.000	
Benzo(a)pyrene	5100.0	68.000	
Indeno(1,2,3-cd)pyrene	5100.0	22.000	
Dibenz(a,h)anthracene	5100.0	6.600	
Benzo(g,h,i)perylene	5100.0	25.000	

* Dry Weight

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CMG Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name: Bergstol
Sample Location: SW-2
Matrix: Water
Method: EPA 625

Sample ID: 5172-12
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 01-08-91
Date Analyzed: 01-08-91
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Bromophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0	55	
Pyrene	10.0	82	
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0	58	
Chrysene	10.0	70	
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0	83	
Benzo(k)fluoranthene	10.0	66	
Benzo(a)pyrene	10.0	89	
Indeno(1,2,3-cd)pyrene	10.0	32	
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0	30	

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: C&MO Laboratories, Inc.
Client Name: Lawler, Matusky & Skeily Eng.
Project/Facility Name: Bergstol
Sample Location: SW-1-B
Matrix: Water
Method: EPA 625

Sample ID: 5172-13
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 1-8-91
Date Analyzed: 1-8-91
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U
1,3-Dichlorobenzene	10.0		U
1,4-Dichlorobenzene	10.0		U
Benzidine	40.0		U
1,2-Dichlorobenzene	10.0		U
1,2-Diphenylhydrazine	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U
N-Nitrosodimethylamine	10.0		U
N-Nitroso-di-n-propylamine	10.0		U
Hexachloroethane	10.0		U
Nitrobenzene	10.0		U
Isophorone	10.0		U
bis(2-Chloroethoxy) methane	10.0		U
1,2,4-Trichlorobenzene	10.0		U
Naphthalene	10.0		U
Hexachlorobutadiene	10.0		U
Hexachlorocyclopentadiene	10.0		U
2-Chloronaphthalene	10.0		U
Dimethylphthalate	10.0		U
Acenaphthylene	10.0		U
2,6-Dinitrotoluene	10.0		U
Hexachlorobenzene	10.0		U
Acenaphthene	10.0		U
2,4-Dinitrotoluene	10.0		U
Diethylphthalate	10.0		U
4-Chlorophenyl-phenylether	10.0		U
Fluorene	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
4-Broaophenyl-phenylether	10.0		U
Phenanthrene	10.0		U
Anthracene	10.0		U
Di-n-butylphthalate	10.0		U
Fluoranthene	10.0		U
Pyrene	10.0		U
Butylbenzylphthalate	10.0		U
3,3'-Dichlorobenzidine	20.0		U
Benzo(a)anthracene	10.0		U
Chrysene	10.0		U
bis(2-Ethylhexyl) phthalate	10.0		U
Di-n-octylphthalate	10.0		U
Benzo(b)fluoranthene	10.0		U
Benzo(k)fluoranthene	10.0		U
Benzo(a)pyrene	10.0		U
Indeno(1,2,3-cd)pyrene	10.0		U
Dibenz(a,h)anthracene	10.0		U
Benzo(g,h,i)perylene	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: SW-2
Matrix: Water
Method: EPA 625

Sample ID: 5172-12
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 01-08-91
Date Analyzed: 01-08-91
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U	4-Bromophenyl-phenylether	10.0		U
1,3-Dichlorobenzene	10.0		U	Phenanthrene	10.0		U
1,4-Dichlorobenzene	10.0		U	Anthracene	10.0		U
Benzidine	40.0		U	Di-n-butylphthalate	10.0		U
1,2-Dichlorobenzene	10.0		U	Fluoranthene	10.0	55	
1,2-Diphenylhydrazine	10.0		U	Pyrene	10.0	89	
bis(2-Chloroisopropyl) ether	10.0		U	Butylbenzylphthalate	10.0		U
N-Nitrosodimethylamine	10.0		U	3,3'-Dichlorobenzidine	20.0		U
N-Nitroso-di-n-propylamine	10.0		U	Benzo(a)anthracene	10.0	58	
Hexachloroethane	10.0		U	Chrysene	10.0	70	
Nitrobenzene	10.0		U	bis(2-Ethylhexyl) phthalate	10.0		U
Isophorone	10.0		U	Di-n-octylphthalate	10.0		U
bis(2-Chloroethoxy) methane	10.0		U	Benzo(b)fluoranthene	10.0	83	
1,2,4-Trichlorobenzene	10.0		U	Benzo(k)fluoranthene	10.0	66	
Naphthalene	10.0		U	Benzo(a)pyrene	10.0	89	
Hexachlorobutadiene	10.0		U	Indeno(1,2,3-cd)pyrene	10.0	32	
Hexachlorocyclopentadiene	10.0		U	Dibenz(a,h)anthracene	10.0		U
2-Chloronaphthalene	10.0		U	Benzo(g,h,i)perylene	10.0	30	
Dimethylphthalate	10.0		U	Phenol	10.0		U
Acenaphthylene	10.0		U	2-Nitrophenol	10.0		U
2,6-Dinitrotoluene	10.0		U	4-Nitrophenol	10.0		U
Hexachlorobenzene	10.0		U	2,4-Dinitrophenol	50.0		U
Acenaphthene	10.0		U	4,6-Dinitro-o-cresol	50.0		U
2,4-Dinitrotoluene	10.0		U	Pentachlorophenol	50.0		U
Diethylphthalate	10.0		U	p-Chloro-m-cresol	10.0		U
4-Chlorophenyl-phenylether	10.0		U	2-Chlorophenol	10.0		U
Fluorene	10.0		U	2,4-Dichlorophenol	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U	2,4,6-Trichlorophenol	10.0		U
				2,4-Dimethylphenol	10.0		U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.
Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:
Sample Location: SW-1-B
Matrix: Water
Method: EPA 625

Sample ID: 5172-13
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 1-8-91
Date Analyzed: 1-8-91
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
bis(2-Chloroethyl) ether	10.0		U	4-Bromophenyl-phenylether	10.0		U
1,3-Dichlorobenzene	10.0		U	Phenanthrene	10.0		U
1,4-Dichlorobenzene	10.0		U	Anthracene	10.0		U
Benzidine	40.0		U	Di-n-butylphthalate	10.0		U
1,2-Dichlorobenzene	10.0		U	Fluoranthene	10.0		U
1,2-Diphenylhydrazine	10.0		U	Pyrene	10.0		U
bis(2-Chloroisopropyl) ether	10.0		U	Butylbenzylphthalate	10.0		U
N-Nitrosodimethylamine	10.0		U	3,3'-Dichlorobenzidine	20.0		U
N-Nitroso-di-n-propylamine	10.0		U	Benzo(a)anthracene	10.0		U
Hexachloroethane	10.0		U	Chrysene	10.0		U
Nitrobenzene	10.0		U	bis(2-Ethylhexyl) phthalate	10.0		U
Isophorone	10.0		U	Di-n-octylphthalate	10.0		U
bis(2-Chloroethoxy) methane	10.0		U	Benzo(b)fluoranthene	10.0		U
1,2,4-Trichlorobenzene	10.0		U	Benzo(k)fluoranthene	10.0		U
Naphthalene	10.0		U	Benzo(a)pyrene	10.0		U
Hexachlorobutadiene	10.0		U	Indeno(1,2,3-cd)pyrene	10.0		U
Hexachlorocyclopentadiene	10.0		U	Dibenz(a,h)anthracene	10.0		U
2-Chloronaphthalene	10.0		U	Benzo(g,h,i)perylene	10.0		U
Dimethylphthalate	10.0		U	Phenol	10.0		U
Acenaphthylene	10.0		U	2-Nitrophenol	10.0		U
2,6-Dinitrotoluene	10.0		U	4-Nitrophenol	10.0		U
Hexachlorobenzene	10.0		U	2,4-Dinitrophenol	50.0		U
Ancenaphthene	10.0		U	4,6-Dinitro-o-cresol	50.0		U
2,4-Dinitrotoluene	10.0		U	Pentachlorophenol	50.0		U
Diethylphthalate	10.0		U	p-Chloro-m-cresol	10.0		U
4-Chlorophenyl-phenylether	10.0		U	2-Chlorophenol	10.0		U
Fluorene	10.0		U	2,4-Dichlorophenol	10.0		U
N-Nitrosodiphenylamine (1)	10.0		U	2,4,6-Trichlorophenol	10.0		U
				2,4-Dimethylphenol	10.0		U

LAWLER, MATUSKY & SKELLY ENGINEERS
CHAIN OF CUSTODY RECORD

Page 1 of 3

PROJECT No. 535-005
LMS FACILITY NYACK

PROJECT WELL SAMPLER
COLLECTION BARSTON
SITE BARSTON
FIELD D.K. JAC, JFC
PERSONNEL

SAMPLE TYPE (Circle):

Drinking Water Stream/Pond Monitoring Wells
Industrial Waste River/Ocean Treatment Facility
Coliform (T / F) Leachate Other

Bottom Sediment
Soil

SAMPLE ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS	SAMPLE PREP	
					PRESERVATIVE	FILTER (Y/N)
V1 15122 V2 16090	12/11/90	0935	MW-202	VOA'S 624*	H ₂ SO ₄	N
27232				BN *		
27246				TPH	H ₂ SO ₄	
V1 15069 V2 15670		1045	MW-223	VOA'S 624*		
27227				BN *		
27247				TPH	H ₂ SO ₄	
V1 16029 V2 16089		1330	BP-9	VOA'S 624*		
27237				BN *		
27242				TPH	H ₂ SO ₄	
V1 16083 V2 16087		1355	BP-14	VOA'S 624*		
27235				BN *		
27239				TPH	H ₂ SO ₄	
V1 16086 V2 16088		1430	BP-18	VOA'S 624*		
15079				BN *		
15076				TPH	H ₂ SO ₄	
V1 16071 V2 16091		1505	FIELD BLANK	VOA'S 624*		
Relinquished By: <u>D. KASSEL</u>		Date/Time: <u>12/11/90 1800</u>		No. Bottles: <u>2</u>	Received By: <u>[Signature]</u>	
Relinquished By: <u>[Signature]</u>		Date/Time: <u>12/12/90</u>		Received By: <u>[Signature]</u>		
Relinquished By: <u>[Signature]</u>		Date/Time: <u>[Signature]</u>		Received By: <u>[Signature]</u>		
Messenger: <u>[Signature]</u>		Shipped To: <u>CHMO</u>		Received at Laboratory By: <u>Kathy Sullivan 12/12</u>		
Remarks: * PLUS-15 FOR BN-VOA'S 624						

One Blue Hill Plaza, Pearl River, New York 10965
(914) 735-8300

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

LAWLER, MATUSKY & SKELLY ENGINEERS
CHAIN OF CUSTODY RECORD

Page 2 of 3
SUNRISE WINTER

PROJECT No. 535-005

LMS FACILITY NYACK

SAMPLE TYPE (Circle):

Drinking Water

Stream/Pond

Monitoring Wells

Industrial Waste

River/Ocean

Treatment Facility

Coliform (T / F)

Leachate

Other SEDIMENT

PROJECT

COLLECTION

SITE BERGSTOL

FIELD

PERSONNEL DK JFC EC

Bottom Sediment

Soil

SAMPLE ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS	SAMPLE PREP	
					PRESERVATIVE	FILTER (Y/N)
V1 15077 V2 15078	12/11/90	1510	MW-18	VOAS 624 *	40C	N
27234				BN 625		
27230				TPH	H2SO4	
V1 15123 V2 16073		1530	BP-6	VOAS 624 *		
27238				BN 625		
27245				TPH	H2SO4	
V1 15081 V2 15082		1417 1420	SW-1-B	624 *		
16097				BN-625 *		
13209				TPH	H2SO4	
V1 17131 V2 17185		1440 1450	SW-2	624 *		
19186				BN 625 *		
16096				TPH	H2SO4	
V1 16094 V2 16095		1520	SS-2	624 *		
27241				BN 625		
27139				TPH		
V1 16318 V2 16317			TRIF BLANK	624 + 15		
Relinquished By: D. KASPER		Date/Time: 12/11/90 1800		No. Bottles:	Received By: [Signature]	
Relinquished By: [Signature]		Date/Time: 12/17/90		Received By:		
Relinquished By:		Date/Time:		Received By:		
Messenger: [Signature]		Shipped To: CAMO		Received at Laboratory By: [Signature]		
Remarks: * + 15 FOR 624 & BN						

One Blue Hill Plaza, Pearl River, New York 10965

(914) 735-8300

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

Page 2 of 3

LMS FACILITY NXACK

Drinking Water	Stream/Pond
Industrial Waste	River/Ocean
Coliform (T / F)	Leachate

Stream/Pond
River/Ocean
Leachate

(Monitoring Wells)
Treatment Facility
Other SEDIMENT

WRII SAMPLE
PROJECT SURFACE WATER
COLLECTION
SITE BAROSTOI
FIELD
PERSONNEL D.K. JC EC
Bottom Sediment
Soil

One Blue Hill Plaza, Pearl River, New York 10965
(914) 735-8300

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960



CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY:
367 VIOLET AVENUE
POUGHKEEPSIE, NY 12601

(914) 473-9200
FAX 914-473-1962

February 4, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

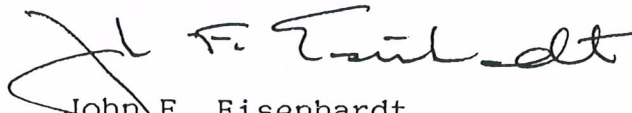
All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.


John F. Eisenhardt
Laboratory Director

REC'D QAS

FEB 06 1991

CAMO LABORATORIES, INC
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, New York 10960

Date of Invoice: 2-4-91
P.O. #: 27204
Typed by: mlj
Invoice #: 91-01-0423

Attn: QA Department

LMS Project No.: 535-005

Analytical Report

Date Samples Collected: 1-18-91
Date Samples Received: 1-30-91
Samples Collected By: Client
Samples Delivered By: Federal Express
Matrix: Water

Sample Identification

(01) Tunnel #1

Parameters	Unit/ Measure	(01)
Method 624 & Xylenes		*

Analysis Comments *See Attached Report.

Comments: All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Laboratory Name: CAMO Laboratories, Inc.
Client Name: LMS
Project/Facility Name: Bergstol
Sample Location: Tunnel #1
Matrix: Water
Method: EPA 624

Sample ID: 0423-01
Date Collected: 1-18-91
Date Received: 1-30-91
Date Analyzed: 1-30-91
Date Reported: 2-4-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0		U
Bromomethane	10.0		U
Vinyl Chloride	10.0		U
Chloroethane	10.0		U
Methylene Chloride	5.0		U
Trichlorofluoromethane	5.0		U
Trans-1,2-dichloroethylene	5.0		U
1,1-Dichloroethene	5.0		U
1,1-Dichloroethane	5.0		U
Dichlorodifluoromethane	5.0		U
Chloroform	5.0		U
1,2-Dichloroethane	5.0		U
2-Chloroethylvinyl Ether	10.0		U
1,1,1-Trichloroethane	5.0		U
Carbon Tetrachloride	5.0		U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0		U
cis-1,3-Dichloropropene	5.0		U
Trichloroethene	5.0		U
Dibromochloromethane	5.0		U
1,1,2-Trichloroethane	5.0		U
Benzene	5.0		U
trans-1,3-Dichloropropene	5.0		U
Bromoform	5.0		U
Tetrachloroethene	5.0		U
1,1,2,2-Tetrachlorethane	5.0		U
Toluene	5.0		U
Chlorobenzene	5.0		U
Ethylbenzene	5.0		U
Acrolein	100.0		U
Acrylonitrile	100.0		U
Total Xylene(s)	5.0		U



CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY:
367 VIOLET AVENUE
POUGHKEEPSIE, NY 12601

(914) 473-9200
FAX 914-473-1962

March 7, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.


John F. Eisenhardt
Laboratory Director

REC'D QAS

MAR 11 1991

CAMO LABORATORIES, INC
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1725654
NYS LAB ID NO.: 10310

QA Department
Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, New York 10960

Date of Invoice: 3-4-91
P.O. #: 27260
Typed by: mbb
Invoice #: 91-02-0722

LMS Project No.: 535-005

Project: Bergstol

Analytical Report

Sample Identification

Date Samples Collected: 2/7, 2/8, 2/12/91 (01) - (19) See Attached
Date Samples Received: 2/14/91
Samples Collected By: Client
Samples Delivered By: Hugo
Matrix: Water

Parameters Unit/
Measure (01) - (19)
See attached *

Analysis Comments: * See attached tables.

Comments: All samples will be discarded after twenty-one (21) days
or EPA Holding time, whichever is shorter, unless we are
notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in
APHA "Standard Methods" and/or EPA approved methods.

CAMO LOG NO.: 91-02-0722

PARAMETERS	Method 624 & Xylenes	BN	% Solids
(01) B/P - 6	*		
(02) B/P - 11	*		
(03) MW - 18	*	*	
(04) MW - 18 -Sampled with pump	*	*	
(05) MW - 20	*		
(06) MW - 22	*		
(07) W.S. # 3	*		
(08) W.S. # 5	*		
(09) W.S. # 6	*		
(10) W.S. # 7	*		
(11) W.S. # 8	*		
(12) W.S. # 9	*		
(13) SS # 1	*		86
(14) SS # 2	*	*	86
(15) SS # 3	*		83
(16) SS # 4	*		89
(17) SS # 5	*	*	83
(18) SS # 6	*	*	86
(19) SS # 7	*		82