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INFORMAL REPORT

**PCB SAMPLING OF TRANSFORMERS
AND ELECTRICAL DEVICES AT
NORFOLK NAVAL BASE
NORFOLK, VIRGINIA**

Scott A. McBride

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Published March 1990

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and the
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ABSTRACT

In 1988 a program was conducted on the Norfolk Naval Base to sample all of the liquid-filled transformers and other electrical devices. This task was part of the Utility Research and Modernization Program. The objectives of the program were as follows:

- Identify the devices as non-polychlorinated biphenyl (PCB), PCB-filled, or PCB-contaminated.
- Identify the technical, logistical, and operational problems that could possibly be encountered should the Navy implement a large-scale device sampling program.
- Perform life expectancy analysis on mission essential devices.
- Construct a certified data base of PCB devices.

This report details the work performed and PCB data obtained and summarizes the lessons learned during the Norfolk Naval Base Sampling program. The program was a success; however, several recommendations are made for future work of this nature at other sites.

ACKNOWLEDGMENTS

Special thanks go to the following Norfolk Base personnel who were instrumental in providing support during the course of this project: Famous, Ms. Betsy Frazier, Mr. Charlie Gilbert, Lieutenant JG Harry Groff, Mr. Darrell Kimberly, Mr. Dave Midget, The Norfolk PWC Line Crew, Mr. Jimmy Scruggs, and Mr. Leonard Smith.

CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	iv
ACRONYMS	vii
INTRODUCTION	1
SPECIFICATIONS	3
Safety	3
Standards	4
Quality Assurance	4
Operator Training	4
Data Transfer	5
BID AND AWARD	6
STARTUP	7
Data Collection	7
Device Identification	8
Field Office	8
Outage Scheduling	9
SAMPLING AND LABELING	10
Sampling	10
Labeling	11
DATA EVALUATION, STORAGE, AND LABORATORY WORK	13
INDEPENDENT VERIFICATION & VALIDATION	15
PROJECT CLOSEOUT	18
APPENDIX A--DIELECTRIC FLUID SAMPLING AND TEST SPECIFICATION FOR LIQUID IMMERSED ELECTRICAL DEVICES AND SUBCONTRACT NO. C87-131464	A-1
APPENDIX B--DIELECTRIC FLUID INDEPENDENT VERIFICATION & VALIDATION (IV&V) SPECIFICATION FOR LIQUID IMMERSED ELECTRICAL DEVICE SAMPLES AND SUBCONTRACT NO. C87-131506	B-1
APPENDIX C--COSTS AND CUMULATIVE SAMPLE DATA	C-1
APPENDIX D--LIFE EXPECTANCY GUIDELINES	D-1

APPENDIX E--PCB-FILLED DEVICES	E-1
APPENDIX F--PCB-CONTAMINATED DEVICES	F-1
APPENDIX G--NON-PCB DEVICES	G-1
APPENDIX H--STATISTICAL ANALYSIS OF DATA FROM THE NORFOLK PWC PROJECT	H-1

ACRONYMS

ASTM	American Society for Testing and Materials
EPA	U. S. Environmental Protection Agency
INEL	Idaho National Engineering Laboratory
IV&V	Independent Verification and Validation
NCEL	Naval Civil Engineering Laboratory
PCB	Polychlorinated Biphenyl
PWC	Public Works Center
QAE	Quality Assurance Engineer

TRANSFORMER SAMPLING SUMMARY REPORT FOR
NORFOLK NAVAL BASE

INTRODUCTION

In 1988 a program was conducted to sample, test, and analyze the dielectric fluid contained in liquid filled electrical devices at the Norfolk Naval Facility, Norfolk, Virginia. The objectives of this program were to (a) identify and label the PCB (polychlorinated biphenyl) and PCB-contaminated devices on the Base, (b) provide a list of PCB devices for follow-up prioritizing and risk assessment, (c) perform life expectancy testing on mission essential devices, and (d) construct a certified PCB data base.

Oil from approximately 775 pad mounted/substation transformers, 360 pole mounted transformers, and 1300 other devices (oil switches and breakers) were sampled, tested, and analyzed. The three phase oil switches consisted of both single reservoir and three reservoir devices. Therefore, approximately 700 of the 1300 required three samples each. Approximately 200 of the samples were further tested and analyzed to provide life expectancy data. PCB certification was required on all samples. A total of 3872 samples were taken during the program; 293 samples were extracted for independent verification and validation (IV&V). The intent of the IV&V program was to ensure adequate quality assurance and consistency of the sample laboratory analyses. The Public Works Center (PWC) Norfolk Oil-Filled Electrical Device Data Base was developed during this task. This data base contains information for each of the devices and the samples taken from them.

The objective of this report is to detail and summarize the Norfolk Naval Base sampling program, lessons learned, and future recommendations. The project description, actions, problems and/or solutions, and recommendations are presented in the following main sections:

(a) specifications; (b) bid and award; (c) startup; (d) sampling and labeling; (e) data evaluation, storage, and laboratory work; (f) independent verification and validation; and (g) project closeout.

SPECIFICATIONS

The procurement specifications were prepared to encompass the sampling, analyses, and IV&V (refer to Appendices A and B for copies of the procurement specifications and subcontracts). After the specifications are completed, they were issued for review. The review comments were then incorporated, and the specifications were issued for procurement.

Several items were encountered during the program that could have been better controlled by the specifications. The primary items that need more stringent control in future specifications are summarized below.

- Identifying safety training requirements
- Referencing and using more appropriate American Society for Testing and Materials (ASTM) guidelines
- Specifying and identifying ASTM and U.S. Environmental Protection Agency (EPA) guidelines to enforce quality assurance in both the analytical laboratory and during the field sampling
- Requiring operator training certifications for all personnel collecting or handling samples
- Removing the data base submittal restriction from the contract and relocating it to the quality assurance responsibilities.

Safety

Certified safety training should be a requirement. The personnel supplied by ENSR Operations (formerly SunOhio) were not adequately trained concerning safe work practices in the field. Safety should be maintained as a high priority status at all times by the subcontractor. In this

particular instance Idaho National Engineering Laboratory (INEL) field engineers acted as training personnel and ensured proper safety practices. All INEL personnel acting as quality assurance engineers (QAEs) were trained and certified high voltage linemen with current safety training.

Standards

The ASTM standards referenced in the specification were not specific enough for the task. The standards used applied to mineral oil and contaminated mineral oil; however, they did not specifically apply to pure PCB fluid analysis. An ASTM test specification section should be added to address the pure PCB samples, where they will be analyzed for life expectancy data. The life expectancy tests should not be performed on PCB devices unless the devices are specifically being considered for retrofill or if the test results are going to be used to prioritize the replacement schedule.

Quality Assurance

The quality assurance section of the specification would have been appropriate for industrial PCB/non-PCB determination; however, the INEL and the Naval Civil Engineering Laboratory (NCEL) desired better feedback and control on confidence levels and implemented better quality assurance midstream. For example, the laboratory quality assurance section of the specification had loopholes in the daily calibration, calibration reporting, split, and replicate requirements. Future specifications should have ASTM and EPA laboratory guidelines specifically referenced, and the laboratory's quality assurance reporting requirements should be added to the deliverable list. Deliverable submittal by the contractor should be strictly enforced.

Operator Training

Operator training is important to ensure both quality and safety. The operations personnel performing the sampling must be properly trained,

certified to work around high voltage equipment, and environmentally cognizant. The contractor was required to certify their operators' training and experience level. In actuality, the operators were trained for a few hours and sent to Norfolk for on-the-job training. Because only one of the three operators in the field were properly trained at any one time, the sampling effort relied heavily on the services of the INEL field engineers and the third contractor sampler. The INEL personnel were able to fill the gap, keep the schedule, and perform the work; however, the use of untrained operators is not acceptable. Restrictions on future specifications should address the requirements that all operators should be properly trained and certified before they are allowed to work on Base. Future specifications should also define minimum levels of training and certification.

Data Transfer

The contractor was required to submit the sample identification and analysis data in our data base format. The raw data from the laboratory was good. However, the data that came in our data base format was poorly configured and had many errors. Comparison of the raw data and the field logs identified data submittal errors, which were then corrected. Performance and cost would have been better validated if a combination of two submittals were obtained and cross referenced. The data would then be inserted into the data base by INEL data processors. The two submittals would consist of (1) an individual typed and certified sample ID sheet with site specific data, device data, sample ID number, and results (PCB concentration, etc.); and (2) a bimonthly tabulation listing site, device SS number, sample ID number, and result. This method would allow for cross referencing of sample information and would therefore provide a higher confidence level. The data program was finished, but implementation of the above recommendations will streamline the process, increase competition, and allow better control.

BID AND AWARD

The bid and award phase of the program ran smoothly; however, two particular issues deserve comment.

The first issue is the field survey, which bidding contractors were not allowed to perform. Bidding contractors should not be allowed to perform field surveys. However, sufficient data should be included in future Requests For Proposals to help the vendor clearly understand access; device population profile (pole mounted/pad mounted/vault/substation, etc.); and other restrictions to enhance proposals.

The second issue deals with the development of mandatory criteria. The criteria used in evaluation of the Norfolk program should all be reused in future applications, with additional emphasis placed upon laboratory quality assurance and standard procedures. A quality assurance and procedures manual should be required from all bidding contractors. This manual should address both field and laboratory procedures. Additionally, throughput of both the sampling and the laboratory response should be compared against the schedule. Also, the presence of an acceptable infrastructure to support field sampling activities at each proposing laboratory should be verified. This procedure was successfully used in the Norfolk program to eliminate the nonqualified bidders and should be applied in future programs. Refer to Appendix C for cost and cumulative sampling data.

STARTUP

The startup was accomplished by placing an INEL field engineer on the Norfolk Naval Base approximately 6 weeks before the sampling. This advance time was required to perform the following tasks:

- Arrange for project coordination with the Norfolk PWC
- Collect data for the sampling as well as future replacement and retrofit work
- Identify the devices
- Set up the field office on the Base
- Establish sampling priority and preplan outages
- Conduct the field walk-through with the successful bidder.

Each of the above topics are discussed in the following sections.

Data Collection

Data collection was required for two reasons. First, the Norfolk PWC did not provide a sufficient list or location map of the devices in usable form. The INEL resident engineer sifted through the available information to compile the needed data. Without a complete accurate list of the devices, a chance exists that some units could be missed. The second reason for data collection was because the original scope of the job was to identify the devices, sample them, and either retrofit or retrofill the bad devices. Therefore, the data gathered on all of the transformers was extensive (see data sheets for clarification). This data collection was performed initially because the field engineers did not know which devices would turn up contaminated and require either retrofill or retrofit.

In general, the data collection went well even though it added significantly to the project support costs.

Device Identification

Each device was identified by a unique characterization number to support sample data base correlation. The PWC did not have a unique numbering system in place. A system was established by the INEL and subsequently field verified. Those transformers scheduled for the first outages had to be identified first so that the outage coordination could proceed ahead of the sample schedule. The unique identifier also allowed for cross referencing of the samples and devices to the certificate labels.

Field Office

The field office was set up for three primary reasons:

1. It provided a common point for coordination of all the ongoing INEL tasks at the Norfolk Naval Base. This included sample control, outage coordination, and control of the transformer installations.
2. It was used as a data collection, filing, and data management area.
3. It was also used as a staging area for the samples after collection and before shipping to the laboratory for testing.

Future jobs should establish and maintain a field office, permanently staffed. The cost is far outweighed by the benefits received.

Outage Scheduling

Outage scheduling is a key issue because residential, industrial, and Naval Base outage requirements and guidelines are different. The residential and/or pole mounted devices must be sampled during a specific time window during the day, and several devices need to be sampled within a short time. Industrial outages occur predominately on weekends, in the early hours of the morning. The pier outage restrictions are much the same as the industrial outages. Outage scheduling is important but time consuming. During this task the outage coordination was accomplished well, with minimal impact resulting from the outages.

However, during the initial portion of the sampling, outage coordination was poor. The appointment of a system outage coordinator was overlooked. Eventually, the Navy assigned a full-time officer to schedule and negotiate the outages. This was very helpful and allowed successful outage scheduling and compliance. The efforts of Lt. JG Harry Groff in this role were most appreciated and were a key element in successful completion of this project.

The limitation of outage availability required significant extension of the contract. The job was approximately 95% complete in September 1988. The remaining 5% dealt with substation transformers and bushings for which outages could not be easily scheduled. Most of these devices were scheduled in small groups and had to be supported; therefore, the job stretched out through December 1988. Following these outages, the INEL supported 6 to 12 weeks of labeling activities.

SAMPLING AND LABELING

The sampling began 6 weeks after the initial onsite kickoff meeting held on February 4, 1988. The meeting was attended by personnel from the Navy PWC, ENSR Operations, and the INEL. The overall objective was to introduce the contractor to the Navy and to perform the initial onsite tour of the oil-filled electrical devices at the Norfolk Naval Base. This meeting was necessary to establish ground rules, get data for the start date, and get data for the first outages.

Sampling

The actual sampling began in late April 1988. It was agreed that the first devices to be sampled should be larger units that could be sampled without outages. This was possible because the units had sample valves and could be sampled anytime with minimum impact on the Base.

After it was established that the ENSR Operations field teams' equipment and training were adequate, the outage coordinations began. Work started and 20 to 40 devices (per team) were sampled per day. A minimum of one team worked every weekend to cover the tough outage schedule.

The conglomerate sampling task was supported by one full-time office administrative person. This person was necessary to handle all of the outages, get last minute changes, interface with the laboratories, and interface with the sampling contractors. This administrator also handled all of the data base work identified in the Data Evaluation, Storage, and Laboratory Work section of this report.

The first phase of sampling consisted of vault located, valve equipped devices. This phase of sampling went well. The next phase of sampling required the sampling personnel to be properly trained in high voltage. Coincidental to this time, the experienced personnel of ENSR Operations

were transferred away and replaced with junior samplers. Problems began to surface at this point because the succeeding sampling personnel were less and less qualified and trained. The INEL field engineers were required, by policy, to be with the samplers at all times. This turned out to be essential because INEL personnel had to supplement their training and oversee the samplers to avoid mistakes and potential environmental incidents. Any future work of this kind will require strict enforcement of the sampler certification and training levels as well as strict training and certification requirements of the INEL QAEs. Better controls placed on the samplers and samples will reduce the level of hands-on training performed by the INEL field engineers and allow for concentration on quality assurance engineering.

In general, the sampling went well, there were no spill or safety incidents, and the entire system was sampled and labeled. The problems encountered were overcome, and the lessons learned will help future work by reducing the risks associated with PCBs.

Labeling

Labeling followed the sampling and analysis tasks. ENSR Operations certified their results and provided certified labels that were numbered and traceable to the sample ID number. These labels were applied to each device. There are three types of labels:

- | | | |
|----|------------------|--|
| 1. | Non-PCB | < 50 ppm PCB |
| 2. | PCB-contaminated | 49 < PCB-concentration < 499 ppm |
| 3. | PCB-filled | 500 < PCB-concentration < 1,000,000 ppm. |

One particular device, number NM-37-T1, failed and burned; its label read non-PCB. After subsequent assessment, the transformer tested to be 75 ppm PCB. The label and records of the unit indicated less than or

equal to 5 ppm. The floor after the accident tested to be over 10,000 ppm PCB. No conclusive resolution was arrived at. However, the following four scenarios were suggested: (1) stratification because of high heat and PCB concentration; (2) mix-up of initial sample bottles; (3) the insulation combined, released PCBs and with the stratification, concentrated the PCBs at the bottom; and (4) cross contamination with floor contamination after initial sampling. This illustrates the need for close monitoring and quality assurance of the field work.

One final lesson learned is that bushings and capacitors should not be sampled. Bushings should be considered the same as the device that they are mounted on, and capacitors are sealed and should be replaced unless specifically labeled as non-PCB by the manufacturer.

DATA EVALUATION, STORAGE, AND LABORATORY WORK

After the samples were extracted, they were shipped to the laboratory for analysis. Fifteen percent of the devices were double sampled and sent to the IV&V laboratory for verification. The laboratory analysis was primarily centered on PCB assessment. Minor work was performed for life expectancy assessment, and the general condition baseline was established for the main substation transformers (refer to Appendix D for life expectancy guidelines). After the results were compiled by the laboratory, they were loaded into a data base and sent bimonthly to the INEL for incorporation. Refer to the data base included in Appendices E, F, and G of this report for more information.

The data base management task was significant and was performed primarily by the in-house, full-time office administrator. The administrator was responsible for receiving the data. Next, the data were cross checked against the field data sheets, corrected, and entered into the data base. The data base was then completed with device data, sample data, sample ID number, IV&V data (where applicable), sample results, and label ID number. The data base is in the form of DBASE III software and can be manipulated to produce custom reports.

In general, this phase of the program went well. However, several lessons were learned during this task and are described below.

- Remove the vendor requirement to submit data in custom form. The data could have been submitted in either written or ASCII format without detriment. This would have saved costs on sampling and analysis.
- Cross train more people on the use of the data base to provide backup and depth.
- Use the data base as both a performance tracking tool and a scheduling aid. In general, the data base is a useful tool and

integral to the project. The future expansion or reuse of the data is facilitated by using standard, off-the-shelf software. For example, by copying select parts of the data base into a new file and expanding it, this system would create a tabulated data base with all devices and could be used for maintenance tracking, etc. Another postulated use of the data base would be to track future environmental clean-up (i.e., retrofit, retrofill, clean-up, and disposal) of the PCB and PCB-contaminated devices.

INDEPENDENT VERIFICATION & VALIDATION

IV&V is one of the key elements of the program. First, the samples were taken by the sampler, ENSR Operations, on those devices designated for IV&V, one additional sample was extracted. IV&V samples were held in the office for 2 to 4 weeks and then shipped to the IV&V laboratory after enough samples accumulated to justify shipping. Shipping regulation compliance on all sample shipping was strictly adhered to by both ENSR Operations and IT Corporation.

The IV&V laboratory, IT Corporation, then accumulated the samples until an economical run could be performed. After the laboratory analysis, the IV&V data was completed and transmitted. This data was then evaluated and compared to the ENSR Operation's sample laboratory data by the INEL field office.

Unfortunately, the laboratory data lagged ENSR Operations data 4 to 8 weeks. When the analysis was completed, some of the ENSR Operations data showed variances that fell slightly below expectations. This variance started to show in August, when 85% of samples had already been taken and/or analyzed. The IV&V analyses were stepped up and the variance continued. Because the greatest variation and inconsistencies were in the 10,000 to 800,000 ppm level, alarm and concern were not high. Concentrations over 499 ppm are considered PCB and carry the same classification and risk. During this time frame, one of the samples from an "askarel-filled" transformer came in at low PCB content. The PWC notified the INEL of this variance and we investigated. ENSR Operations indicated, after a rerun of their archived sample, that they had not calculated their dilution rate correctly and that the device was PCB-filled with greater than or equal to 600,000 ppm.

This visible mistake, combined with the unknown PCB-contaminated transformer noted earlier, caused great concern in the PWC, INEL, and NCEL. Basically, the validity of the program was being questioned at a very late stage in the program. Only two options were available. First,

validate the laboratory accuracy and/or second, reanalyze all archived samples. The resolution to this took place in several stages.

First, a team of chemists and the project engineer went directly to the laboratory and performed an audit. Findings indicated that in-house quality assurance was not being strictly enforced on calculations and verifications. Second, all of the samples analyzed on those days when the in-house quality assurance was not enforced were requested to be rerun. Third, additional samples were taken, split, and run dummies were added. These samples were then submitted for analysis to both IT Corporation and ENSR Operations. Fourth, the laboratory results from ENSR Operations and IT Corporation were analyzed for variance, repeatability, accuracy, and standard deviation.

Another lesson learned on the labeling and sampling task is that there is no laboratory "PCB certification" process in place. The only certification is in laboratory integrity and strict compliance with ASTM standards.

In summary, the IV&V audit analysis showed that the sample program is within normal industry standard deviations. To increase the confidence level of results to 95%, one more standard deviation (65% to 95%) would have to be allowed. Essentially, this would impact confidence in classification for 77 devices currently labeled as PCB free, because the 95% accuracy error bands would be ± 20 ppm at the 50 ppm threshold. Refer to the Appendix H for additional information on laboratory accuracy.

The devices were labeled in compliance with normal EPA regulation and ASTM accuracy. Adding these outliers would only increase confidences, not change legally required status.

The specific lessons learned were as follows:

- Keep the IV&V program.

- Add performance language to force quick IV&V data return, even if the cost increases.
- Early IV&V data is essential to allow prompt problem identification and remedial action.
- Institute a data sort and crosscheck in the data base to verify that all PCB-filled devices (manufacturer labeled PCB) are checked against the laboratory results and that the laboratory results agree. If not, immediately require a recheck.
- Require that the laboratory archive the samples for a minimum of one year or until two months after the contract is over, whichever is last.
- Split the IV&V samples after extraction rather than take two samples.
- Implement the IV&V analytical program and involve chemists early, rather than waiting for data to arrive.
- Run more replicate and dummy samples.

In summary, the IV&V data showed that standard tests are very variable. To get better results additional cost, quality assurance, calibration, and sample replication is required. This program also showed that the standard EPA sample and identification programs are running at the 65% confidence level.

PROJECT CLOSEOUT

At this stage, the sampling was completed, certificate labels were attached, and the device population was known. Closeout activities included office closure, data base finalization, copy services, manual preparation, and transmittals.

This project is considered to be successful, and many lessons were learned for technology transfer for future sampling programs throughout the Navy system.

The key lessons learned are summarized below.

- Contract with a single contractor for the sampling and analysis.
- Perform independent quality assurance engineering in the field to keep a high confidence level in the sample integrity.
- Require a quick turnaround on IV&V and have the IV&V analysis program set for quick response.
- Extract a high rate of IV&V samples early in the program and add blinds, splits, and dummies into the sample and IV&V streams.
- Establish the data base before start of sampling. Aggressively pursue prompt entry of data, and use the data base for scheduling and IV&V analysis support.
- Perform a quality assurance audit at the laboratory at award time, and entertain the option of mid-contract audit if the IV&V should show problems.

In conclusion, the program is complete, and Norfolk Naval Base has 2709 non-PCB devices, 253 PCB-contaminated devices, and 254 PCB-filled devices.

APPENDIX A

DIELECTRIC FLUID SAMPLING AND TEST SPECIFICATION FOR
LIQUID IMMERSED ELECTRICAL DEVICES
AND
SUBCONTRACT NO. C87-131464

ES — 51132
DATE — 12-17-87

SPECIFICATION

DIELECTRIC FLUID SAMPLING & TEST SPECIFICATION FOR LIQUID IMMERSED ELECTRICAL DEVICES

Prepared for the
NAVAL CIVIL ENGINEERING LABORATORY
and
US DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

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1.0 SCOPE

This specification defines the performance requirements for sampling, testing and analyzing the dielectric fluid (typically PCB contaminated oil, Interteen, Askaral, Pyranol, and mineral oil) contained in liquid immersed electrical devices at the Norfolk Naval Facility (Norfolk, Virginia).

The oil from approximately 775 pad mounted/substation transformers, 360 pole mounted transformers, and 1300 other devices (oil switches, breakers, and misc.) will be sampled, tested, and analyzed. The 3 phase oil switches consist of both single reservoir and 3 reservoir devices. Therefore, approximately 700 of the 1300 will require 3 samples each. PCB certification will be required on all samples.

A portion of the samples will be further tested and analyzed to provide life expectancy data.

2.0 APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. The issue in effect on the date of bid invitation shall apply. In the event of conflict between the referenced documents and this specification, the contents of this specification will be considered a superseding document.

- o Environmental Protection Agency (EPA)-Regulation 40, CFR761.
- o American Standard Testing Methods (ASTM)-Section 10, Volume 10.03.
- o Occupational, Safety, and Health Regulation (OSHA) 29-CFR, 1910, and 1926.

3.0 REQUIREMENTS

General

The sampling subcontractor (SC) is required to perform all sampling, handling, testing, and analysis activities. All equipment required to perform the sampling (including bucket trucks for pole mounted device/transformer sampling) will be supplied by the SC. Qualified personnel shall be used for all sampling (electricians/linemen/etc.).

Outage times are a premium, therefore, the SC shall schedule all sampling activities to minimize the required outages and minimize outage durations. Outages must be coordinated through the EG&G Idaho, Inc. Resident Engineer (RE). All system de-energization or re-energization will be performed by Norfolk personnel. Outages will be requested by the SC through the RE. All sampling activities will be preplanned with the RE with at least a 15 working day notice required. All samples will be tested and certified for PCB content (section 3.2).

Approximately 400 of the pad mounted/substation transformer samples will be analyzed for the life expectancy data (section 3.3). The RE will prepare a sample list for the SC tabulating the devices by identity and location.

The SC is required to comply with all Naval security and outage requirements.

The SC shall submit the following for approval. These submittals must be approved by EG&G Idaho before any sampling activities are allowed to proceed.

- o A Detailed Spill Prevention, Control, and Countermeasures Plan.
- o All Required Safety Equipment for Employees.
- o Handling and Containment Procedures.
- o Quality Control Procedures.
- o Sampling Procedures.

All sampling activities shall be performed in accordance with ASTM D-923, (sampling procedures). The preferred method of sampling is on non-energized transformers and devices. Where live sampling is required, it shall be allowed only when using filling/sampling valves that are above the fluid level, or with specific written permission from the EG&G Idaho RE.

Where sampling reduces the liquid level below the full mark, the SC shall replace/add the same type of fluid to return the level to the full mark. The exception is on PCB filled devices; the adding fluid for these devices shall be compatible mineral oil, not PCB fluid.

3.1 Reports

The SC shall submit detailed test reports to EG&G Idaho Inc.

First, the SC shall submit detailed monthly reports containing the previous month's samples and analyses results.

Second, the analytical data from the monthly report shall be compiled into a common database which shall be submitted (to EG&G Idaho) on a bimonthly basis for review. The database shall be IBM PC and DBase III compatible

This database shall list all test results and devices in report format. A detailed final report including the composite data base shall be submitted to EG&G Idaho at the end of the project. All submittals shall include 8 copies each.

3.2 PCB Content Tests

All oil samples will be tested for PCB content in compliance with ASTM D-4059, or other approved Gas Chromatography method capable of distinguishing between the different Aroclors. PCB concentration will be listed in Parts Per Million (PPM) with the test result accuracy certified. PCB content is anticipated to be between 0 PPM and 900,000 PPM.

3.3 Life Expectancy Tests

A portion of the Padmount/Unit Sub Transformer samples (between 250 and 400) will be further analyzed to provide life expectancy data. The RE shall designate which samples will be tested for this task prior to sample removal. These samples will be tested and analyzed using the following tests.

- A-Dielectric Breakdown Strength ASTM D-877/D-1816
- B-Neutralization Number ASTM D-974
- C-Interfacial Tension ASTM D-971
- D-Color ASTM D-1524
- E-Moisture Content ASTM D-1533
- F-Specific Gravity ASTM D-1298
- G-Visual Examination ASTM D-1524
- H-Sediment ASTM D-1698
- I-Power Factor ASTM D-924
- J-Gas In Oil Analysis By Gas Chromatography ASTM D-3612

All test results will be reported in accordance with section 3.1

NOTE: Test "J" sampling procedure shall be authorized by the RE for labeled PCB transformers. PCB fluids do not absorb gases readily and require special, or different, sampling techniques.

3.4 Verification and Validation Samples

The RE shall reserve the right to request samples to be drawn concurrently by the SC, packaged in approved shipping containers, and remanded to the custody of the RE for independent verification and validation purposes. The RE shall be allowed to request between 50 and 400 samples of approximately one pint each, for this task.

3.5 Labeling

All transformers and devices shall be labeled and certified with permanent labels. The labels shall indicate the PCB content or certify that the device/transformer is PCB free. Labels shall be standard EPA labels as specified in 40 CFR 761, Subpart C.

3.6 Per Unit Pricing

The sampling, testing, and analysis services (3.2, 3.3, & 3.4) shall be quoted with per unit pricing details in accordance with the Request for Proposal (RFP).

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Inspection

The EG&G Idaho RE or his designated representatives will accompany all SC personnel during sampling and is responsible for all site inspection. The SC is responsible for all on site quality assurance of sampling activities.

The SC shall perform all laboratory quality inspection in accordance with section 4.2. The RE or designated representative reserves the right to observe any or all laboratory tests. The lab test schedule shall be submitted to EG&G Idaho in advance, on a monthly basis.

4.2 Quality Assurance Program

The SC is required to have a quality assurance program meeting the minimum requirements of MIL-I-45208 A.

The quality assurance program shall be submitted for approval before any sampling work may be performed.

All test results shall be certified by the SC for accuracy and compliance with ASTM guidelines.

5.0 PACKAGING/HANDLING/DISPOSAL

The SC is responsible for all packaging, handling, shipping, analysis, and proper disposal of samples. Proper disposal shall be certified for all samples. All samples will be packaged, stored, shipped, and disposed of in accordance with local, State, and Federal requirements.

PRICING SCHEDULE

All work shall be performed in accordance with EG&G Idaho Specification ES-51132.

All costs associated with performance of this Scope of Work are included in the unit cost.

Sampling and Analysis

Unit Cost

PCB Content

Pad Mounted/Substation Transformers	775 X 16.20	=	\$12,555.00
Pole Mounted Transformers	360 X 47.60	=	17,136.00
Switches, Misc.	600 X 16.20	=	9,720.00
and (700 X 3 ea.)	= 2,100 X 16.20	=	34,020.00

Life Expectancy

Pad Mounted/Substation Transformers	400 X 48.00	=	19,200.00
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Samples for Independent Verification and

Validation Subcontractor	400 X 9.50	=	3,800.00
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TOTAL PRICE

\$96,431.00

The quantities shown above are estimates. The actual number of samples and analyses may be slightly higher or lower.

Option

Life Expectancy Test Series excluding Test "J"

Sampling and Analysis of Pad Mounted/
Substation Transformers excluding
Test "J" of the Life Expectancy
Test Series as defined in EG&G Idaho
Specification ES-51132, Section 3.3

Unit Cost	\$	14.00
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SPECIAL SECURITY REQUIREMENTS

One week (minimum) prior to arrival at Norfolk Naval Facility for work, the Subcontractor shall provide the following documentation to the EG&G Idaho Resident Engineer and shall submit copies to: (1) Norfolk Public Works Center and (2) Norfolk Security.

Documentation shall be transmitted on company letterhead and shall include the following:

1. Identification of subcontract and subcontract number.
2. Name, social security number, date of birth, and certification of U.S. Citizenship for all those who will be on base for work.
3. Length of time for subcontract completion (as required for badging).

After the documentation is approved, personnel will be required to report to the Security Office for both personnel and vehicle passes.

SUBCONTRACT NO. C87-131464
(ISSUED PURSUANT TO CONTRACT
NO. DE-AC07-76ID01570 BETWEEN
U.S. DEPARTMENT OF ENERGY
AND EG&G IDAHO, INC.)

FIXED PRICE PER UNIT SUBCONTRACT
BETWEEN
EG&G IDAHO, INC.
AND
SUN ENVIRONMENTAL, INC.

(Rev. 9/84)

C O N T E N T S

<u>ARTICLE</u>	<u>TITLE</u>	<u>PAGE</u>
	INTRODUCTION.....	1
1.	DEFINITIONS.....	1
2.	SCOPE OF WORK.....	2
3.	DELIVERY.....	2
4.	PAYMENT.....	2
5.	CHANGES.....	2
6.	SUBCONTRACTOR'S ADMINISTRATION.....	3
7.	CONTRACTOR'S ADMINISTRATION.....	3
8.	INDEMNITY.....	3
9.	PATENT INDEMNITY.....	3
10.	REVIEW AND APPROVAL OF PROCEDURES.....	4
11.	STANDARD TERMS AND CONDITIONS.....	4
	SIGNATURES.....	5
	APPENDIX A, SCOPE OF WORK - EG&G IDAHO SPECIFICATION	
	ES-51132, DECEMBER 17, 1987	
	APPENDIX B, PRICING SCHEDULE	
	APPENDIX C, SPECIAL SECURITY REQUIREMENTS	

SUBCONTRACT NO. C87-131464
BETWEEN
EG&G IDAHO, INC.
AND

SUN ENVIRONMENTAL, INC.

THIS SUBCONTRACT, effective February 1, 1988, by and between EG&G IDAHO, INC., a corporation organized and existing under the laws of the State of Idaho, with its principal office at Idaho Falls, Idaho, (hereinafter called the "Contractor"), acting under Contract No. DE-AC07-76ID01570 with the United States Government (hereinafter called the "Government") represented by the Idaho Operations Office of the Department of Energy (hereinafter called "DOE"), and Sun Environmental, Inc., (hereinafter called "Subcontractor").

WHEREAS, Contractor has heretofore entered into Contract No. DE-AC07-76ID01570 (hereinafter sometimes referred to as the "Prime Contract"), dated October 1, 1976, with DOE for the management and operation by Contractor of certain specified facilities at DOE's Idaho National Engineering Laboratory (INEL) in Southeastern Idaho; and

WHEREAS, Subcontractor is willing to perform certain work hereinafter described in accordance with the provisions of this subcontract on a fixed price basis; and

WHEREAS, Contractor finds that Subcontractor is qualified to perform the work, all relevant factors considered, and that such performance will be in furtherance of the Prime Contract;

NOW, THEREFORE, the parties hereto agree, as follows:

ARTICLE 1 - DEFINITIONS

As used throughout this subcontract, the following terms shall have the meaning set forth below:

- A. The term "DOE" means the United States Department of Energy.
- B. The term "INEL" means DOE's Idaho National Engineering Laboratory in Southeastern Idaho.
- C. The term "Contracting Officer" means the Manager of the Idaho Operations Office of DOE and includes his successors or any duly authorized representative thereof.
- D. The term "Contractor" means EG&G Idaho, Inc., or any duly authorized representative thereof.
- E. The term "Subcontractor" means Sun Environmental, Inc., or any duly authorized representative thereof.

ARTICLE 2 - SCOPE OF WORK

The Subcontractor shall perform sampling and analysis of oil-filled electrical devices at the Norfolk Naval Facility in accordance with EG&G Idaho Specification ES-51132, "Dielectric Fluid Sampling and Test Specification for Liquid Immersed Electrical Devices," dated December 17, 1987, Appendix A to this Subcontract.

ARTICLE 3 - DELIVERY

The period of performance of this subcontract shall be from February 1, 1988, through August 15, 1988. Completion of the work, including the delivery of all supporting data shall be accomplished by August 15, 1988.

ARTICLE 4 - PAYMENT

Payments shall be made to the Subcontractor in accordance with monthly invoices of completed sampling and analyses by the Subcontractor for which reporting has been turned over to the Contractor at the rates presented in Appendix B, Pricing Schedule. Based on the Pricing Schedule, Appendix B, the total ceiling price of this subcontract is Ninety-Six Thousand and Four Hundred and Thirty-One and No/100 Dollars (\$96,431.00).

The quantities shown in the Pricing Schedule, Appendix B, are estimates. The actual number of samples and analyses may be slightly higher or lower.

Option

In the event that Test "J" is excluded from the Life Expectancy Test Series for Pad Mounted/Substation Transformers as defined in EG&G Idaho Specification ES-51132, Section 3.3, the unit cost for the Life Expectancy Test Series for Pad Mounted/Substation Transformers will be \$14.00.

ARTICLE 5 - CHANGES

The Contractor may at any time issue written directions requiring additional work or directing the omission of or variations in work covered by this subcontract and within the general scope thereof. If any such direction causes an increase or decrease in the cost of, or the time required for, the performance of any part of the work under this subcontract, whether changed or not changed by any such order, an equitable adjustment shall be made in the lump sum compensation or delivery schedule and the subcontract shall be modified in writing accordingly. Any claim by the Subcontractor for adjustment under this article must be asserted within 30 days from the date of receipt by the Subcontractor of the written direction: Provided, however, That the Contractor, if he decides that the facts justify such action, may receive and act upon any such claim asserted at any time prior to final settlement under this subcontract. Where the cost of property made obsolete or excess as a result of a written direction is included in the Subcontractor's claim for adjustment, the Contractor shall have the right to prescribe the manner of disposition of such property. Failure to agree

to any adjustment shall be a dispute within the meaning of the article of this subcontract entitled "Disputes." However, nothing provided in this article shall excuse the Subcontractor from proceeding with the subcontract as changed.

ARTICLE 6 - SUBCONTRACTOR'S ADMINISTRATION

The Subcontractor agrees that Darrel J. Ralph will have overall technical direction of the work to be performed by the Subcontractor and that he will be available at all reasonable times in connection therewith. Any change in this assignment must have prior approval of the Contractor.

ARTICLE 7 - CONTRACTOR'S ADMINISTRATION

- A. Unless the Subcontractor is otherwise notified in writing, the Contractor's responsibilities under this subcontract shall be administered by the Manager, Operations Subcontracts and/or his duly authorized representative who, for the purpose of this subcontract is Renee Simmons, Subcontract Administrator. All administrative reports shall be submitted to the Subcontracts Branch.
- B. Technical Jurisdiction. All work and/or services to be performed under this subcontract will be under the technical jurisdiction of G. D. Seifert and/or his duly authorized representative. Such jurisdiction is to extend only to the assignment and coordination of work within the general scope of Article 2 - Scope of Work, including schedule, final technical approval and acceptance of completed work as provided for under this subcontract.

ARTICLE 8 - INDEMNITY

The Subcontractor shall indemnify the Contractor and the Government of the United States and the officers, agents and employees of each of the foregoing and hold them harmless from and against all loss, damage, expense and liability resulting from injury to or death of any person and loss of or damage to property, or claims of such injury, death, loss or damage resulting from the negligent acts or omissions of the Subcontractor, his lower tier subcontractors, agents, servants or employees. The Subcontractor shall, on request of any of the above-named indemnitees, defend each party making such request in any suit asserting a claim covered by this indemnity. The Subcontractor shall pay any cost which may be incurred by any of the above-named indemnitees in enforcing this indemnity.

ARTICLE 9 - PATENT INDEMNITY

The Subcontractor shall indemnify the Contractor and the Government and its officers, agents and employees against liability, including costs, for infringement of any U.S. Letters Patent (except U.S. Letters Patent issued upon an application which is now or may hereafter be kept secret or otherwise withheld from issue by order of the Government) resulting from the Subcontractor's: (i) furnishing or supplying standard parts or

components which have been sold or offered for sale to the public on the commercial open market; or (ii) utilizing its normal practices or methods which normally are or have been used in providing goods and services in the commercial open market, in the performance of the subcontract; or (iii) utilizing any parts, components, practices or methods to the extent which the Subcontractor has secured indemnification from liability. The foregoing indemnity shall not apply unless the Subcontractor shall have been informed as soon as practicable by the Contractor or the Government of the suit or action alleging such infringement, and shall have been given such opportunity as is afforded by applicable laws, rules or regulations to participate in the defense thereof; and further, such indemnity shall not apply to a claimed infringement which is settled without the consent of the Subcontractor, unless required by final decree of a court of competent jurisdiction or to an infringement resulting from addition to or change in such supplies or components furnished or construction work performed for which addition or change was made subsequent to delivery or performance by the Subcontractor.

ARTICLE 10 - REVIEW AND APPROVAL OF PROCEDURES

The action of Contractor in reviewing and/or approving Subcontractor's analysis procedures and/or safety procedures shall not affect or relieve Subcontractor from such responsibility as Subcontractor otherwise has with respect to the adequacy or correctness of such analysis and/or safety procedures used by the Subcontractor in the performance of work under this subcontract.

ARTICLE 11 - STANDARD TERMS AND CONDITIONS

EG&G Idaho, Inc., Standard Terms and Conditions for Purchase Orders and Subcontracts (issued May, 1982) apply hereto except for the following parts and clauses:

Part I

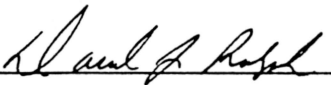
Clause 5 Changes
Clause 6 Extras
Clause 7 Variation in Quantity
Clause 13 Warranties
Clause 14 Delivery
Clause 15 Consignment and Marking Instructions
Clause 16 Inspection
Clause 18 Payments
Clause 20 Engineering and Operations Data Requirements
Clause 25 Classification
Clause 37 Required Source for Jewel Bearings
Clause 41 Termination for Convenience

Part II

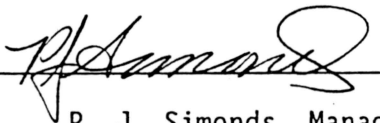
Clause 1 Progress Payments
Clause 3 Warranty
Clause 4 Manufacturing Schedules
Clause 5 Special Tooling
Clause 7 Basis of Award
Clause 8 Supplier Data Instructions and Documentation Submittal

IN WITNESS WHEREOF, EG&G Idaho, Inc., and the Subcontractor have caused this subcontract to be executed effective on the day and year first above written intending to be legally bound thereby.

SUN ENVIRONMENTAL, INC., Subcontractor EG&G IDAHO, INC., Contractor

By 

Title Bus. Mgr. - Env. Services

By 

P. J. Simonds, Manager
Title Operations Subcontracts

APPENDIX B

DIELECTRIC FLUID INDEPENDENT VERIFICATION & VALIDATION (IV&V)
SPECIFICATION FOR LIQUID IMMERSED ELECTRICAL DEVICE SAMPLES
AND
SUBCONTRACT NO. C87-131506



FORM EG&G-680
(Rev. 1-87)

Appendix A
Subcontract No. C87-131506

ES — 51169
DATE — 12-17-87

SPECIFICATION

DIELECTRIC FLUID INDEPENDENT VERIFICATION & VALIDATION (IV&V) SPECIFICATION
FOR LIQUID IMMERSSED ELECTRICAL DEVICE SAMPLES

Prepared for the

NAVAL CIVIL ENGINEERING LABORATORY

and

US DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

Approved for Release:


Engineering Graphics
EG&G Idaho, Inc.

DOCUMENT APPROVAL SIGNATURE SHEET

of Document Specification		Document No. ES-51169	
Title Dielectric Fluid Independent Verification & Validation (IV&V) Specification for Liquid Immersed Electrical Device Samples			
Prepared By <u>D. R. Summers</u> <i>[Signature]</i>			Ext. _____
Originated By <u>G. D. Seifert</u> <i>[Signature]</i> <u>12-6-87</u>			Ext. <u>1650/0557</u>
(PRINT OR TYPE NAME IN SPACE ABOVE SIGNATURE)			
Approval and Review Signatures		Organization	Mail Address
B. K. Ford <i>[Signature]</i>		Program Manager	
P. J. Conlon <i>[Signature]</i>		Safety Engineer	
R. G. Thompson <i>[Signature]</i>		Quality Engineer	

1.0 SCOPE

This specification defines the performance requirements for Independent Verification and Validation (IV&V) of dielectric fluid samples drawn from the electrical devices at the Norfolk Naval Facility (Norfolk, Virginia).

Samples will be drawn and packaged by others. This subcontract will provide IV&V services of test results. All samples will be tested for PCB content. A portion of the samples will be further tested and analyzed to provide life expectancy data.

2.0 APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. The issue in effect on the date of bid invitation shall apply. In the event of conflict between the referenced documents and this specification, the contents of this specification will be considered a superseding document.

- o Environmental Protection Agency (EPA)-Regulation 40, CFR761.
- o American Standard Testing Methods (ASTM)-Section 10, Volume 10.03.
- o Occupational, Safety, and Health Regulation (OSHA) 29-CFR, 1910, and 1926.

3.0 REQUIREMENTS

General

The samples will be drawn and packaged by others (the sampling subcontractor) in accordance with ES-51132.

The samples will be available in the EG&G Idaho Resident Engineer's (RE) office in Norfolk, Virginia.

The SC shall submit the following for approval. These submittals must be approved by EG&G Idaho before any testing activities are allowed to proceed.

- o A Detailed Spill Prevention, Control, and Countermeasures Plan.
- o All Required Safety Equipment for Employees.
- o Handling and Containment Procedures.
- o Quality Control Procedures.

3.1 Reports

The SC shall submit detailed test reports to EG&G Idaho Inc.

First, the SC shall submit detailed monthly reports containing the previous month's sample and analysis results.

Second, the analytical data from the monthly report shall be compiled into a common database which shall be submitted on a bimonthly basis (to EG&G Idaho) for review. The database shall be IBM PC and D Base III compatible.

This database shall list all test results and devices in report format. A detailed final report including the composite data base shall be submitted to EG&G Idaho at the end of the project. All submittals shall include 8 copies each.

3.2 PCB Content Tests

All oil samples between (50 and 400) will be tested for PCB content in compliance with ASTM D-4059, or other approved Gas Chromatography method capable of distinguishing between the different Arochlors. PCB concentration will be listed in Parts Per Million (PPM) with the test result accuracy certified. PCB content is anticipated to be between 0 PPM and 900,000 PPM.

3.3 Life Expectancy Tests

A portion of the samples (between 10 and 50) will be further analyzed to provide life expectancy data. The RE shall designate which samples will be tested for this task prior to sample analysis. These samples will be tested and analyzed using the following tests.

A-Dielectric Breakdown Strength ASTM D-877/D-1816

B-Neutralization Number ASTM D-974

C-Interfacial Tension ASTM D-971

D-Color ASTM D-1524

E-Moisture Content ASTM D-1533

F-Specific Gravity ASTM D-1298

G-Visual Examination ASTM D-1524

H-Sediment ASTM D-1698

I-Power Factor ASTM D-924

J-Gas In Oil Analysis By Gas Chromatography ASTM D-3612

All test results will be reported in accordance with section 3.1

3.4 Per Unit Pricing

The testing and analysis services (3.2 and 3.3) shall be quoted with per unit pricing details in accordance with the Request for Proposal (RFP).

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Inspection

The SC shall perform all laboratory quality inspection in accordance with section 4.2. The RE or designated representative reserves the right to observe any or all laboratory tests. The lab test schedule shall be submitted to EG&G Idaho, in advance, on a monthly basis.

4.2 Quality Assurance Program

The SC is required to have a quality assurance program meeting the minimum requirements of MIL-I-45208 A.

The quality assurance program shall be submitted for approval before any analysis work may be performed.

All test results shall be certified by the SC for accuracy and compliance with ASTM guidelines.

5.0 PACKAGING/HANDLING/DISPOSAL

The SC is responsible for all packaging, handling, shipping, analysis, and proper disposal of samples. All samples, as received from the RE, will be packaged, stored, shipped, and disposed of in accordance with local, State, and Federal requirements.

The SC shall submit a disposal procedure for approval prior to handling and shall certify proper disposal of samples.

PRICING SCHEDULE

All work shall be performed in accordance with EG&G Idaho Specification ES-51169.

All costs associated with performance of this Scope of Work are included in the unit cost.

<u>Independent Verification and Validation</u>		<u>Unit Cost</u>		<u>Total Cost</u>
PCB Content Certification	400	X	\$34.00 =	\$13,600.00
Life Expectancy Analysis	50	X	\$69.00 =	<u>3,450.00</u>
TOTAL PRICE				<u>\$17,050.00</u>

The quantities shown above are estimates. The actual number of samples and analyses may be slightly higher or lower.

Option

<u>Life Expectancy Test Series excluding Test "J"</u>	<u>Unit Cost</u>
Analysis of samples excluding Test "J"	
of the Life Expectancy Test Series as defined	\$18.50 - PCB
in EG&G Idaho Specification ES-51169, Section 3.3	\$11.00 - Oil

SUBCONTRACT NO. C87-131506
(ISSUED PURSUANT TO CONTRACT
NO. DE-AC07-76ID01570 BETWEEN
U.S. DEPARTMENT OF ENERGY
AND EG&G IDAHO, INC.)

FIXED PRICE PER UNIT SUBCONTRACT

BETWEEN

EG&G IDAHO, INC.

AND

I T CORPORATION

(Rev. 9/84)

C O N T E N T S

<u>ARTICLE</u>	<u>TITLE</u>	<u>PAGE</u>
	INTRODUCTION.....	1
1.	DEFINITIONS.....	1
2.	SCOPE OF WORK.....	2
3.	DELIVERY.....	2
4.	PAYMENT.....	2
5.	CHANGES.....	2
6.	SUBCONTRACTOR'S ADMINISTRATION.....	3
7.	CONTRACTOR'S ADMINISTRATION.....	3
8.	INDEMNITY.....	3
9.	PATENT INDEMNITY.....	3
10.	REVIEW AND APPROVAL OF PROCEDURES.....	4
11.	STANDARD TERMS AND CONDITIONS.....	4
	SIGNATURES.....	5
	APPENDIX A, SCOPE OF WORK - EG&G IDAHO SPECIFICATION	
	ES-51169, DECEMBER 17, 1987	
	APPENDIX B, PRICING SCHEDULE	

SUBCONTRACT NO. C87-131506
BETWEEN
EG&G IDAHO, INC.
AND
I T CORPORATION

THIS SUBCONTRACT, effective February 17, 1988, by and between EG&G IDAHO, INC., a corporation organized and existing under the laws of the State of Idaho, with its principal office at Idaho Falls, Idaho, (hereinafter called the "Contractor"), acting under Contract No. DE-AC07-76ID01570 with the United States Government (hereinafter called the "Government") represented by the Idaho Operations Office of the Department of Energy (hereinafter called "DOE"), and I T CORPORATION, (hereinafter called "Subcontractor").

WHEREAS, Contractor has heretofore entered into Contract No. DE-AC07-76ID01570 (hereinafter sometimes referred to as the "Prime Contract"), dated October 1, 1976, with DOE for the management and operation by Contractor of certain specified facilities at DOE's Idaho National Engineering Laboratory (INEL) in Southeastern Idaho; and

WHEREAS, Subcontractor is willing to perform certain work hereinafter described in accordance with the provisions of this subcontract on a fixed price basis; and

WHEREAS, Contractor finds that Subcontractor is qualified to perform the work, all relevant factors considered, and that such performance will be in furtherance of the Prime Contract;

NOW, THEREFORE, the parties hereto agree, as follows:

ARTICLE 1 - DEFINITIONS

As used throughout this subcontract, the following terms shall have the meaning set forth below:

- A. The term "DOE" means the United States Department of Energy.
- B. The term "INEL" means DOE's Idaho National Engineering Laboratory in Southeastern Idaho.
- C. The term "Contracting Officer" means the Manager of the Idaho Operations Office of DOE and includes his successors or any duly authorized representative thereof.
- D. The term "Contractor" means EG&G Idaho, Inc., or any duly authorized representative thereof.
- E. The term "Subcontractor" means I T Corporation, or any duly authorized representative thereof.

ARTICLE 2 - SCOPE OF WORK

The Subcontractor shall perform independent verification and validation analyses of samples from oil-filled electrical devices at the Norfolk Naval Facility in accordance with EG&G Idaho Specification ES-51169, "Dielectric Fluid Independent Verification and Validation (IV&V) Specification for Liquid Immersed Electrical Device Sampling," dated December 17, 1987, Appendix A to this Subcontract.

ARTICLE 3 - DELIVERY

The period of performance of this subcontract shall be from February 17, 1988, through August 15, 1988. Completion of the work, including the delivery of all supporting data shall be accomplished by August 15, 1988.

ARTICLE 4 - PAYMENT

Payments shall be made to the Subcontractor in accordance with monthly invoices of completed analyses by the Subcontractor for which reporting has been turned over to the Contractor at the rates presented in Appendix B, Pricing Schedule. Based on the Pricing Schedule, Appendix B, the total ceiling price of this subcontract is Seventeen Thousand and Fifty and No/100 Dollars (\$17,050.00).

The quantities shown in the Pricing Schedule, Appendix B, are estimates. The actual number of samples and analyses may be slightly higher or lower.

Option

In the event that Test "J" is excluded from the Life Expectancy Test Series as defined in EG&G Idaho Specification ES-51169, Section 3.3, the unit cost for the Life Expectancy Test Series will be \$18.50 for PCB and \$11.00 for oil.

ARTICLE 5 - CHANGES

The Contractor may at any time issue written directions requiring additional work or directing the omission of or variations in work covered by this subcontract and within the general scope thereof. If any such direction causes an increase or decrease in the cost of, or the time required for, the performance of any part of the work under this subcontract, whether changed or not changed by any such order, an equitable adjustment shall be made in the lump sum compensation or delivery schedule and the subcontract shall be modified in writing accordingly. Any claim by the Subcontractor for adjustment under this article must be asserted within 30 days from the date of receipt by the Subcontractor of the written direction: Provided, however, That the Contractor, if he decides that the facts justify such action, may receive and act upon any such claim asserted at any time prior to final settlement under this subcontract. Where the cost of property made obsolete or excess as a result of a written direction is included in the Subcontractor's claim for adjustment, the Contractor shall have the right to prescribe the manner of disposition of such property. Failure to agree

to any adjustment shall be a dispute within the meaning of the article of this subcontract entitled "Disputes." However, nothing provided in this article shall excuse the Subcontractor from proceeding with the subcontract as changed.

ARTICLE 6 - SUBCONTRACTOR'S ADMINISTRATION

The Subcontractor agrees that John P. Woodyard will have overall technical direction of the work to be performed by the Subcontractor and that he will be available at all reasonable times in connection therewith. Any change in this assignment must have prior approval of the Contractor.

ARTICLE 7 - CONTRACTOR'S ADMINISTRATION

- A. Unless the Subcontractor is otherwise notified in writing, the Contractor's responsibilities under this subcontract shall be administered by the Manager, Operations Subcontracts and/or his duly authorized representative who, for the purpose of this subcontract is Renee Simmons, Subcontract Administrator. All administrative reports shall be submitted to the Subcontracts Branch.
- B. Technical Jurisdiction. All work and/or services to be performed under this subcontract will be under the technical jurisdiction of G. D. Seifert and/or his duly authorized representative. Such jurisdiction is to extend only to the assignment and coordination of work within the general scope of Article 2 - Scope of Work, including schedule, final technical approval and acceptance of completed work as provided for under this subcontract.

ARTICLE 8 - INDEMNITY

The Subcontractor shall indemnify the Contractor and the Government of the United States and the officers, agents and employees of each of the foregoing and hold them harmless from and against all loss, damage, expense and liability resulting from injury to or death of any person and loss of or damage to property, or claims of such injury, death, loss or damage resulting from the negligent acts or omissions of the Subcontractor, his lower tier subcontractors, agents, servants or employees. The Subcontractor shall, on request of any of the above-named indemnitees, defend each party making such request in any suit asserting a claim covered by this indemnity. The Subcontractor shall pay any cost which may be incurred by any of the above-named indemnitees in enforcing this indemnity.

ARTICLE 9 - PATENT INDEMNITY

The Subcontractor shall indemnify the Contractor and the Government and its officers, agents and employees against liability, including costs, for infringement of any U.S. Letters Patent (except U.S. Letters Patent issued upon an application which is now or may hereafter be kept secret or otherwise withheld from issue by order of the Government) resulting from the Subcontractor's: (i) furnishing or supplying standard parts or

components which have been sold or offered for sale to the public on the commercial open market; or (ii) utilizing its normal practices or methods which normally are or have been used in providing goods and services in the commercial open market, in the performance of the subcontract; or (iii) utilizing any parts, components, practices or methods to the extent which the Subcontractor has secured indemnification from liability. The foregoing indemnity shall not apply unless the Subcontractor shall have been informed as soon as practicable by the Contractor or the Government of the suit or action alleging such infringement, and shall have been given such opportunity as is afforded by applicable laws, rules or regulations to participate in the defense thereof; and further, such indemnity shall not apply to a claimed infringement which is settled without the consent of the Subcontractor, unless required by final decree of a court of competent jurisdiction or to an infringement resulting from addition to or change in such supplies or components furnished or construction work performed for which addition or change was made subsequent to delivery or performance by the Subcontractor.

ARTICLE 10 - REVIEW AND APPROVAL OF PROCEDURES

The action of Contractor in reviewing and/or approving Subcontractor's analysis procedures and/or safety procedures shall not affect or relieve Subcontractor from such responsibility as Subcontractor otherwise has with respect to the adequacy or correctness of such analysis and/or safety procedures used by the Subcontractor in the performance of work under this subcontract.

ARTICLE 11 - STANDARD TERMS AND CONDITIONS

EG&G Idaho, Inc., Standard Terms and Conditions for Purchase Orders and Subcontracts (issued May, 1982) apply hereto except for the following parts and clauses:

Part I

Clause 5 Changes
Clause 6 Extras
Clause 7 Variation in Quantity
Clause 13 Warranties
Clause 14 Delivery
Clause 15 Consignment and Marking Instructions
Clause 16 Inspection
Clause 18 Payments
Clause 20 Engineering and Operations Data Requirements
Clause 25 Classification
Clause 37 Required Source for Jewel Bearings
Clause 41 Termination for Convenience

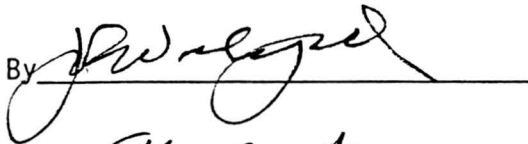
Part II

Clause 1 Progress Payments
Clause 3 Warranty
Clause 4 Manufacturing Schedules
Clause 5 Special Tooling
Clause 7 Basis of Award
Clause 8 Supplier Data Instructions and Documentation Submittal

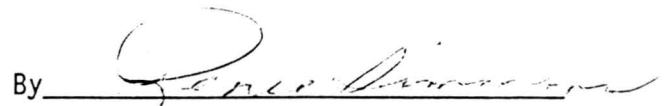
IN WITNESS WHEREOF, EG&G Idaho, Inc., and the Subcontractor have caused this subcontract to be executed effective on the day and year first above written intending to be legally bound thereby.

I T CORPORATION, Subcontractor

EG&G IDAHO, INC., Contractor

By 

Title General Manager

By 

R. Simmons
Title Subcontract Administrator

APPENDIX C
COSTS AND CUMULATIVE SAMPLE DATA

Several different types of sample analyses were performed during this task. The following table summarizes the different costs associated with the sampling and laboratory analysis tasks.

Type	Description	Number (#)	Cost Each (\$)
PCB Analysis	Pad Mounted-Sample and Analysis	293	29.60
	Pad Mounted-Sample and Analysis	3060	16.20
	Pole Mounted-Sample and Analysis	703	47.60
Life Analysis	Without Gas Analysis	53	14.00
	With Gas Analysis	147	48.00
IV&V Sample Collection	Sun Collected Samples for INEL To Send to IT Corp. for IV&V	353	9.50
IV&V PCB Analysis	During the Subcontract	224	34.00
	After Expiration of Subcontract	50	90.00
IV&V Life Expectancy Testing	Verification of the Life Expectancy Tests Performed by SunOhio	15	69.00

Additional costs associated with this project include field engineer support, administrative support, and overall project costs. Please contact Mr. G. V. Urata, NCEL, (805) 982-1372 for further information.

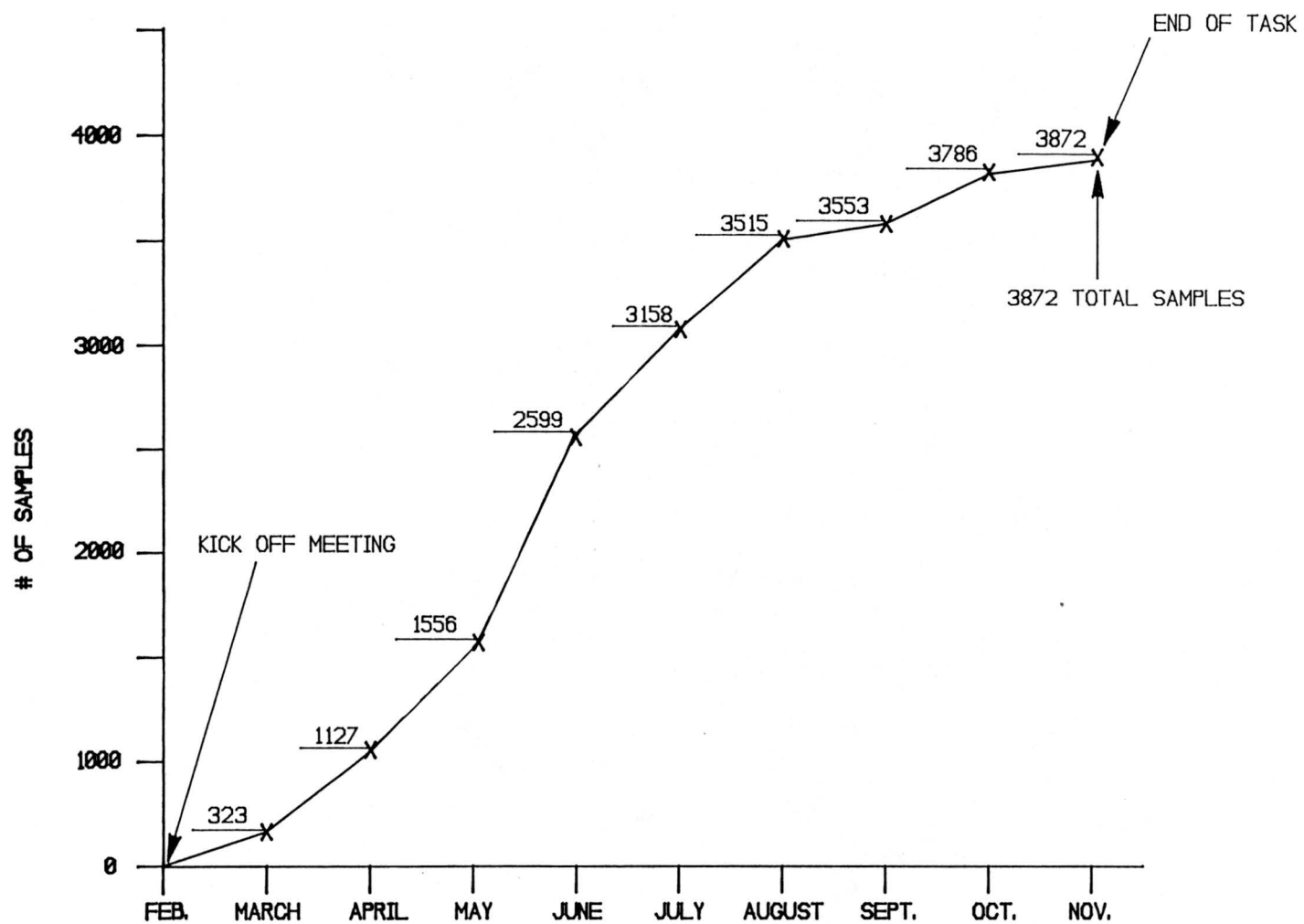


FIGURE 1: CUMULATIVE SAMPLES TAKEN DURING THE PROGRAM

APPENDIX D
LIFE EXPECTANCY GUIDELINES

INTEROFFICE CORRESPONDENCE

Date: January 26, 1989
To: G. D. Seifert
From: J. M. Jacobson *JMJ*
Subject: LIFE EXPECTANCY SAMPLE INFORMATION NORFOLK - JMJ-02-89

Enclosed is a copy of the letter Del Summers sent to Dave Midget explaining the tests and results according to the ASTM and Transformer Consultant's suggestions. It should be explained to PWC that the results from this testing are a baseline to compare future tests in order to see if a transformer is beginning to show a trend toward failure. It is also important, in order to see this trend, that a scheduled oil testing program be implemented.

When we had the start up meeting with Sun Environmental at the Norfolk office, Darrel Ralph showed us a copy of what they send to their customers on life expectancy and gas analysis results. It was a colored sheet with a wheel showing gas percentages and life expectancy results and their recommendations. He told me at that time, that we could get the same for our results along with the computer run out. I would like to get these even if we had to pay extra on the contract as I do not feel comfortable making suggestions based upon the numbers on the data base. I think we should make Sun Environmental tell us what they recommend and forward that information to PWC and NCEL.

adw

Attachments:
As Stated

cc: B. F. Cloward
R. Simmons
A. P. Williams
Central Files
J. M. Jacobson File

"Providing research and development services to the government"

TO: Mr. Dave Midget
Utilities Engineering Division
Navy Public Works Center
Bldg. P-71, Code 600
Norfolk, Virginia 23511

FROM: D. R. Summers
EG&G Idaho, Inc.
c/o Navy Public Works Center
Bldg. W-6, Code 610
Norfolk, Virginia 23511

SUBJECT: Interpretation of Laboratory Results for Life Expectancy and Gas Chromotography Testing of Transformer Oils

In anticipation of receiving laboratory results, on approximately 215 life expectancy tests and approximately 165 gas chromatography tests, the following information should be very beneficial to you and your staff in determining the integrity of the most critical transformers within your power system.

The American Society for Testing and Materials (ASTM) lists 33 properties and 55 test methods in Standard D-117 for petroleum based oils. Practically, only the 10 tests in Table 1.1 serve as monitors for "in-service" transformers, and no one test alone is a reliable indicator. For a true picture of a service-aged oils condition and an insight into conditions inside the transformer, results of the 10 tests in Table 1.1--especially the first four--should be considered in combination. Moisture content in parts per million (D-1533) and gas-in-oil analysis by gas chromatography (D-3612) are also most significant.

Table 1.1. The ten most important ASTM tests for in-service transformer oil

<u>ASTM No.</u>	<u>Test Description</u>	<u>Criteria for Evaluating Test Results and Information Provided by Test</u>
1. D-877 D-1816	Dielectric breakdown strength	New oil should not break down below 35 kV. Used oil should not break down below 25 kV. Conductive contaminants present in the oil such as metallic cuttings or free water (>80 ppm).
2. D-974	Neutralization (or acid) number (NN) 1 Refer to Tables 1.2 and 1.3	New oil = 0.03 or less. Used oil = 0.45 or less. Milligrams of potassium hydroxide required to neutralize 1 g of oil. Reveals acidity (from oil oxidation) in transformer oil and the presence of sludge. Studies have shown at 0.3, visible sludge has occurred.
3. D-971	Interfacial tension (IFT) 1 Refer to Tables 1.2 and 1.3	New oil = 30.0 to 45.0 dyn/cm. Used oil = 30.0 and below dyn/cm. Measures the tension at the interface between two immiscible liquids, oil and water, and is expressed in dynes per centimeter (millinewtons/meter). The test is extremely sensitive to the presence of oil decay products and soluble polar contaminants from solid insulating materials.
4. D-1524	Color Refer to Tables 1.2 and 1.3	New oil = 0.5 or less - water white. Marginal oil = 0.5 to 1.5 - bright yellow. Bad oil = 1.5 to 2.5 - amber. Very bad oil = 2.5 to 6.0 - dark amber. Oil samples are compared with a series of standard colored disk filters. Marked change of color from one year to the next indicates a problem.
5. D-1533	Moisture content Refer to Tables 1.4 and 1.5	New oil = less than 25 ppm. Used oil = less than 35 ppm. Reveals total water content in oil solution. Water is soluble in oil and cannot be seen or detected optically or with dielectric breakdown. In suspension, water accumulates in transformer oil decay products. In paper insulation, water in all three forms will go to the area of highest electrical stress and to the coldest parts of the

Table 1.1. (continued)

<u>ASTM No.</u>	<u>Test Description</u>	<u>Criteria for Evaluating Test Results and Information Provided by Test</u>
		transformer. This means a bridging effect of water soaked materials will start causing premature failure of the electrical system and rusting in the cooling fans. To understand the seriousness of the problem, paper insulation is hygroscopic (has an affinity for water) and absorbs water more readily than oil. To determine the actual amount of paper and gallons of water contained in the paper insulation, the following formula can be used: $kVA \times 0.3 = lb \text{ of paper}$. Water content in ppm $\times 0.0567 = \% \text{ of moisture by dry weight}$. (Example $20000 \text{ kVA} \times 0.3 = 6000 \text{ lb paper}$. $35 \text{ ppm} \times 0.0567 = 1.9845\%$. $6000 \text{ lb paper} \div 1.9845\% = 3023 \text{ lb or } 3.778 \text{ gal of water}$.)
6. D-1298	Specific gravity	Over 1.0 = PCB or silicone. 0.875 = mineral oil. A ratio of the mass of a given volume of liquid (oil) to the mass of an equal volume of water at a specified temperature.
7. D-1524	Visual examination	Cloudiness indicates moisture, carbon, and/or sludge. Good oil should be clear and sparkling. This test is used strictly as a visual guide for the next test sequence (sediment).
8. D-1689	Sediment	The oil sample is centrifuged to separate the sediment from the oil. The sediment is dried, weighed, ignited, and then reweighed. The remainder is inorganic and the loss in weight is organic. Inorganic sediment indicates contamination such as rust; organic sediment indicates deterioration such as sludge or contamination by varnishes, thread sealants, gaskets, etc. Listed as slight/moderate/heavy.

Table 1.1. (continued)

<u>ASTM No.</u>	<u>Test Description</u>	<u>Criteria for Evaluating Test Results and Information Provided by Test</u>
9. D-924	Power factor Refer to Table 1.5	Less than 0.65 for in-service oil. Measures the leakage current through an oil, which is a measure of the contamination or deterioration. Power factor is not specific in what it detects. It does tell you the presence of polar materials, but other tests must be made to determine what polar compounds are present.
10. D-3612	Gas-in-oil analysis by gas chromotography (GC)	Oil and oil-immersed insulation decompose under the influence of heat and electrical stress, producing detectible gasses. The presence and the amount of these gasses can be analyzed and interpreted to provide insight as to the condition of the transformer. Table 1.6 illustrates which gasses are tested for all the acceptable values for normal transformers.

Unique IFT-NN Relationship

Several studies in the 1940s have shown that a definite relationship takes place between acid number and IFT. An increase in NN should normally be followed by a characteristic drop in IFT. This inverse relationship between these two laboratory findings practically eliminates "mistakes" when evaluating oils. The NN test by itself becomes questionable in high acid ranges because it rests on the skill of the technician. The IFT test, however, conducted on precision lab equipment provides an excellent back-up test for the NN. If the test results do not fall on the curve or in proximity to it, the results are suspect.

Oil Quality Index System

High IFT means that a transformer oil is relatively sludge-free and, therefore, purer than an oil with a low IFT. Conversely, a high acid number (NN) indicates high acid content and a badly deteriorated oil. Dividing the IFT by the NN provides a pure numerical value that is an excellent means of evaluating oil condition. This value is known as the Myers Index Number (MIN) (Figure 2 and Table 1.3). For example: $MIN = IFT \text{ divided by } NN = 45.0 \text{ (typical new oil) divided by } 0.03 \text{ (typical new oil} = 1500)$. This relationship provides a further basis for classifying oil into the seven categories according to their condition.

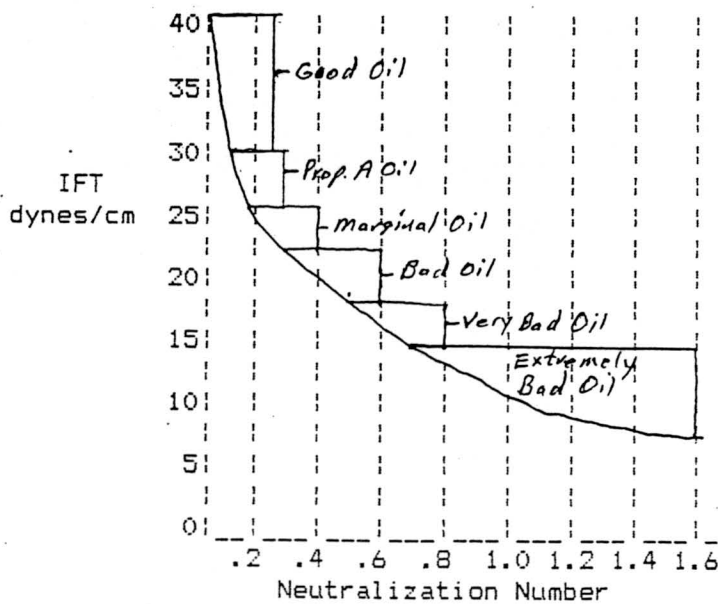


Figure 1

Oil Quality Index or Meyers Index Number (MIN)			
1500	New Oil		
1250	Pale		
1000	Yel.	Good Oil	
750			
500		Prop. A Oil	
300	Yel.	Margin.	
250			
200		Bright	Bad
150		Yellow	
100		Amber	Very
50		Brown	Bad
0		Dark Br.	Worst

Classification of oil from new to worst quality oil.

Figure 2

Table 1.2. Transformer acceptance values for neutralization number, interfacial tension, and color tests

<u>Liquid Type</u>	<u>Test</u>	<u>Satisfactory</u>	<u>Need Reconditioning</u>
Oil	Neutralization no. (acidity)	0.4	0.4 to 1.0
	IFT	40 dyn/cm	Below 40 dyn/cm
	Color	3.5	Above 3.5
Askarel	Neutralization no. (acidity)	0.05	Above .05
	IFT	40 dyn/cm	Below 40 dyn/cm
	Color	2.0	Above 2.0
Silicone	Neutralization no. (acidity)	0.01	Above 0.01
	IFT	20.8 dyn/cm	
	Color	15 max	Above 15
RTemp	Neutralization no. (acidity)	0.5	Above 0.5
	IFT	30 dyn/cm	Below 30 dyn/cm
R113 (GE)	Neutralization no. (acidity)	0.2 max	Above 0.2
Wecoso1	Neutralization no. (acidity)	.25 or less	Above .25

Table 1.3. Transformer oil classifications

<u>Oil Condition</u>	<u>NN</u>	<u>IFT</u>	<u>Color</u>	<u>MIN</u>
Good oils	0.00-0.10	30.0-45.0	Pale yellow	300-1500
Proposition A oils	0.05-0.10	27.1-29.9	Yellow	271-600
Marginal oils	0.11-0.15	24.0-27.0	Bright yellow	160-318
Bad oils	0.16-0.40	18.0-23.9	Amber	45-159
Very bad oils	0.41-0.65	14.0-17.9	Brown	22-44
Extremely bad oils	0.66-1.50	9.0-13.9	Dark brown	6-21
Oils in disastrous condition	1.51 or more		Black	

Table 1.4 Acceptable test limits for the four IEEE classifications of transformer oil

<u>Property/Test</u>	<u>Oil for Continued Service</u>	<u>Oils Needing Reconditioning</u>	<u>Oils Needing Reclaiming</u>	<u>Oil After Reclaiming</u>	<u>Oils to be Scrapped</u>
<u>IEEE Classification</u>	<u>Group I</u>	<u>Group II</u>	<u>Group III</u>	<u>--</u>	<u>Group IV</u>
Dielectric strength D-877, kV, minimum	27	24	23	30.4	19
Dielectric strength D-1816, 0.1 cm (0.4 in. gap), kV, minimum	24	--	--	--	--
Neutralization no. mg KOH/gm oil	0.30	0.32	0.45	0.10	0.85
Interfacial tension dyn/cm, minimum	24	23	20	33	14
Power factor, 60 Hz, 26°C, maximum	.8	1.1	1.36	.26	2.2
Moisture content, ppm, maximum	34	40	66	30	91

Table 1.5. Suggested test limits for service-aged oil by voltage class

Property/Test	Limits			
Voltage Class	69 kV and Below	Above 69 kV Through 288 kV	345 kV and Above	ASTM Test Method
Dielectric breakdown voltage 60 Hz, kV, minimum	26	26	26	D-877
Dielectric breakdown voltage, kV, minimum (.040 in. gap thin)	23	26	26	D-1816
Neutralization no., mg KOH/gm oil, maximum	0.2	0.2	0.1	D-974
Interfacial tension dyn/cm minimum	24	26	30	D-971
Power factor, 60 Hz 25°C, maximum %	0.65	0.39	0.31	D-924
Moisture content ppm, maximum	35	25	20	D-1533
Gas content when specified, maximum %				D-831 D-1817 D-2945 D-3612

Table 1.6 Gasses tested for acceptable values for normal transformers

<u>Gas</u>	<u>Common Name</u>	<u>Normal</u>	<u>Abnormal</u>	<u>Interpretation</u>
H ₂	Hydrogen	<150 ppm	>1000 ppm	
N ₂	Nitrogen	1-10%	na	
CO	Carbon monoxide	<500	>1000	Severe overloading
O ₂	Oxygen	.2-3.5%	na	
CH ₄	Methane	<25	>80	Sparking
CO ₂	Carbon dioxide	<10,000	>15,000	Severe overloading
C ₂ H ₆	Ethane	<10	>35	Local overheating
C ₂ H ₄	Ethylene	<20	>100	Severe overheating
C ₂ H ₂	Acetylene	none	any	Arcing in oil

Total Combustible Gases

0-500 ppm	Normal
500-1000 ppm	Decomposition may be in excess of normal aging
1000-2500 ppm	Decomposition is significant in transformer

APPENDIX E
PCB-FILLED DEVICES

Page No. 1
06/20/89

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
NH-159-CB2	200628-P-S-CB-R	08/09/88	502	12171
V-51-T2	101541-P-S-M	12/15/88	502	12373
CI-72-T1	200595-P-S-M	08/09/88	504	12169
CEP-96-T5	100277-P-S-LTC	06/27/88	519	12006
SEW-PT-T3	101520-P-S-M	12/14/88	530	12378
W-337-T3	101490-P-S-M	12/16/88	535	12376
CI-82-T5	200777-P-S-M	08/09/88	538	12164
H-2H-T1	100400-P-S-M	07/15/88	545	12033
U-48-T6	101158-P-S-M	08/11/88	550	12168
SEW-PT-T1	101518-P-S-M	12/14/88	568	12375
L-30A-T1	200622-P-S-M	08/09/88	573	12179
CI-70-T1	200553-P-S-M	07/29/88	596	12335
CEP-12-T1	100408-P-S-MAIN	07/15/88	598	12051
CI-147-T1	200531-P-S-M	08/09/88	599	12176
N-26-T2	200085-P-S-M	06/30/88	599	12011
W-PIER 12-T6	200685-P-S-M	08/09/88	600	12186
CA-80-T3	101487-P-S-M	12/16/88	612	12377
W-PIER 12-T5	200686-P-S-M	08/09/88	615	12184
SC-407-T1	101291-P-S-M	09/16/88	619	12201
P-74-T1	200223-P-S-M	07/15/88	630	12055
CI-146-T1	200529-P-S-M	08/09/88	631	12177
NMC-D-T3	200799-P-S-M	09/16/88	634	12209
NM-107-T1	101315-P-S-M	09/16/88	635	12203
SEW-PT-T2	101519-P-S-M	12/14/88	635	12374
W-337-T1	100094-P-S-TC	05/02/88	639	11887
W-PIER 12-T3	200683-P-S-M	08/09/88	646	12182
V-44-T1	200398-P-S-M	07/26/88	651	12138
CI-145-T1	200526-P-S-M	08/09/88	656	12178
P-1-CB10	100632-P-S-CB-M	07/25/88	656	12084
W-PIER 12-T1	200682-P-S-M	08/09/88	660	12183
U-108-T3	101115-P-S-M	08/09/88	662	12167
W-176-T2	100075-P-S-MAIN	05/02/88	663	11885
SDA-84-T1	100946-P-S-M	07/19/88	673	11999
NM-107-T2	101316-P-S-M	09/16/88	685	12204
W-PIER 5-T3	200711-P-S-M	08/09/88	709	12162
W-PIER 12-T2	200681-P-S-M	08/09/88	716	12185
CI-65-T1	200598-P-S-M	08/01/88	728	12143
P-86-T1	100926-P-S-M	07/23/88	747	12068
W-82-T1	200544-P-S-M	07/19/88	757	12000
W-PIER 5-T4	200712-P-S-M	08/09/88	759	12161

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SEW-02-CB1	100560-P-S-CB-R	07/25/88	764	12100
W-PIER 5-T2	200709-P-S-M	08/09/88	767	12163
K-BB1-T4	200067-P-S-M	07/15/88	773	12034
Z-133-T4	100254-P-S-MAIN	04/29/88	786	11921
SP-89-T1	200452-P-S-M	08/02/88	817	12141
G-29-C-T3	100349-P-S-M	07/15/88	850	12042
SP-87-T1	200444-P-S-M	08/02/88	926	12140
SP-88-T1	200450-P-S-M	08/02/88	928	12142
V-28-T9	200272-P-S-M	07/23/88	948	12073
CEP-96-T5	100277-P-S-M	06/29/88	949	12008
W-231-T1	100056-P-S-MAIN	05/02/88	1033	11914
M-8-T1	100984-P-S-M	08/09/88	1118	12187
NH-159-CB2	200628-P-S-CB-C	08/09/88	1182	12172
CEP-PIER 25-T1	200371-P-S-M	07/26/88	1191	12139
SC-407-T3	101293-P-S-M	09/16/88	1222	12202
LAG-14-T1	100994-P-S-M	08/09/88	1398	12180
NH-159-CB2	200628-P-S-CB-L	08/09/88	1407	12170
M-13-T1	100985-P-S-M	08/09/88	1407	12181
G-29-C-T2	100348-P-S-M	07/15/88	1444	12044
W-6-A-T1	100054-P-S-MAIN	05/02/88	1522	11915
V-28-T5	200263-P-S-M	07/23/88	1591	12076
N-24-T1	200083-P-S-M	07/15/88	1770	12030
SP-62-T2	200480-P-S-M	08/03/88	1839	12336
CI-136-S1	200512-P-S-SW-L	08/09/88	1942	12175
P-1-CB9	100631-P-S-CB-M	07/25/88	2166	12085
K-M1-T2	200061-P-S-M	06/30/88	2356	12012
P-1-CB4	100626-P-S-CB-M	07/25/88	2407	12082
CI-136-S1	200512-P-S-SW-C	08/04/88	2446	12173
Q-6-S2	100020-P-S-LEFT	04/28/88	2840	11944
X-13-T2	100173-P-S-MAIN	05/02/88	2975	12010
SP-85-A-T2	200357-P-S-M	07/22/88	3814	12136
Y-182-S1	200029-P-S-SW-CENTER	05/02/88	4211	11943
CI-136-S1	200512-P-S-SW-R	08/09/88	4341	12174
SP-45-T1	200477-P-S-M	08/04/88	4380	12155
Y-182-S1	200029-P-S-SW-R	05/05/88	6585	11930
P-1-CB1	100623-P-S-CB-M	07/25/88	19133	12083
LP-12-T4	100752-P-S-M	03/09/89	100000	12488
LP-12-T5	100750-P-S-M	03/09/89	100000	12489
LP-13-T4	100746-P-S-M	03/09/89	100000	12490
LP-12-T6	100751-P-S-M	03/09/89	100000	12491

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-13-T6	100748-P-S-M	03/09/89	100000	12492
LP-13-T5	100747-P-S-M	03/09/89	100000	12493
LP-13-T1	100768-P-S-M	03/09/89	100000	12494
LP-13-T2	100770-P-S-M	03/09/89	100000	12495
LP-12-T2	100774-P-S-M	03/09/89	100000	12496
LP-12-T3	100773-P-S-M	03/09/89	100000	12497
LP-13-T3	100769-P-S-M	03/09/89	100000	12498
LP-12-T1	100772-P-S-M	03/09/89	100000	12499
N-30-T1	200097-P-S-MAIN	07/15/88	215878	12194
N-21-T1	200090-P-S-MAIN	07/15/88	345396	12195
U-20-T1	100447-P-S-M	07/23/88	346626	12059
LP-3-T9	100783-P-S-M	08/04/88	361722	12157
W-163-EE-T2	101464-P-S-M	12/15/88	372020	12372
CEP-127-T1	100343-P-S-MAIN	07/15/88	378542	12045
LP-4-T5	100778-P-S-M	03/09/89	382624	12501
LP-14-T7	100742-P-S-M	07/28/88	387272	12128
LP-4-T4	100777-P-S-M	03/09/89	389742	12500
LP-14-T4	100741-P-S-M	07/27/88	392430	12126
W-6-T3	200256-P-S-M	07/23/88	413490	12071
LP-2-T3	100789-P-S-M	08/13/88	417265	12323
LP-4-T3	100799-P-S-M	08/13/88	420640	12326
LP-4-T2	100801-P-S-M	08/13/88	424813	12324
NH-95-T5	200345-P-S-M	07/22/88	428816	12107
LP-2-T1	100787-P-S-M	08/13/88	432443	12321
CI-82-T2	200555-P-S-M	07/28/88	439202	12133
V-9-T1	101095-P-S-M	08/06/88	440109	12160
L-28-T1	200071-P-S-M	07/15/88	443170	12032
U-112-T1	100446-P-S-M	07/23/88	445180	12062
LP-3-T5	100784-P-S-M	08/13/88	446328	12319
CEP-126-T1	200593-P-S-M	08/03/88	448252	12379
LF-18-T4	100608-P-S-M	07/25/88	450878	12088
U-132-T5	100449-P-S-M	07/23/88	456598	12061
V-4-T1	200284-P-S-M	07/15/88	457373	12198
V-52-T2	200249-P-S-M	07/23/88	467341	12067
CI-82-T1	200557-P-S-M	07/29/88	473466	12134
LP-4-T6	100779-P-S-M	08/13/88	485178	12330
NH-95-T2	200344-P-S-M	07/22/88	491472	12104
NH-223-T1	100395-P-S-M	07/15/88	493016	12035
W-143-T7	100131-P-S-MAIN	05/02/88	495447	11895
A-128-T1	100220-P-S-MAIN	05/02/88	495751	11927

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-2-T3	200436-P-S-M	08/02/88	499645	12122
LP-3-T2	100796-P-S-M	08/01/88	505359	12150
N-26-T1	200089-P-S-MAIN	07/15/88	508445	12046
W-143-T3	100105-P-S-MAIN	05/02/88	512469	11890
W-PIER 2-T3	100142-P-S-MAIN	05/02/88	515017	11900
LP-14-T2	100737-P-S-M	07/28/88	517781	12130
V-4-T2	200283-P-S-M	07/23/88	520237	12079
W-6-T1	100055-P-S-MAIN	04/27/88	521044	11917
SP-1-T1	200433-P-S-M	08/02/88	521446	12124
LP-14-T1	100736-P-S-M	07/28/88	522286	12127
V-64-T1	100581-P-S-M	07/25/88	530366	12099
SP-2-T1	200434-P-S-M	08/02/88	531552	12120
LP-14-T3	100738-P-S-M	07/28/88	533117	12129
U-132-T2	100463-P-S-M	07/23/88	533483	12063
U-132-T1	100464-P-S-M	07/23/88	534351	12064
V-52-T3	200248-P-S-M	07/23/88	536992	12070
U-111-T1	200894-P-S-M	09/19/88	537167	12210
LP-1-T12	200870-P-S-M	09/16/88	537237	12206
SP-1-T3	200431-P-S-M	08/02/88	540332	12121
SP-256-T2	100676-P-S-M	07/22/88	543929	12109
W-143-T9	100128-P-S-MAIN	05/02/88	544487	11892
SP-1-T2	200432-P-S-M	08/02/88	546274	12123
CEP-86-T1	100333-P-S-M	06/29/88	546438	12009
X-136-T2	100159-P-S-MAIN	05/02/88	546526	11908
SP-31-T4	200442-P-S-M	08/02/88	549117	12119
U-132-T4	100462-P-S-M	07/23/88	550081	12065
LP-2-T5	100792-P-S-M	08/01/88	551485	12151
CI-BLD-135-T2	200507-P-S-M	08/04/88	554860	12158
SC-1-T1	200768-P-S-M	08/06/88	556147	12159
SP-63-T1	100657-P-S-M	07/26/88	557773	12111
SP-31-T5	200443-P-S-M	08/02/88	558987	12118
LF-18-T5	100614-P-S-M	07/25/88	562496	12197
CI-453-T1	100925-P-S-M	08/02/88	564251	12144
I-AA-T1	200046-P-S-M	06/30/88	564517	12014
V-43-T1	200274-P-S-M	07/23/88	566580	12072
N-25A-T1	200080-P-S-M	07/15/88	568680	12029
LF-18-T1	100610-P-S-M	07/25/88	573503	12090
U-132-T3	100448-P-S-M	07/23/88	576620	12060
CA-486-T1	200634-P-S-M	08/02/88	576699	12380
V-28-T1	200271-P-S-M	07/23/88	577203	12075

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
W-143-T4	100122-P-S-MAIN	05/02/88	579202	11896
CEP-187-T1	100297-P-S-M	06/27/88	581643	12007
NH-95-T4	200347-P-S-M	07/22/88	582364	12102
SP-312-T2	101409-P-S-M	09/12/88	585519	12205
LF-18-T2	100609-P-S-M	07/25/88	586988	12091
NH-11-T1	100376-P-S-M	07/15/88	587461	12036
V-52-T1	200250-P-S-M	07/23/88	588302	12069
W-PIER 2-T1	100140-P-S-MAIN	05/02/88	588479	11902
LP-2-T6	100793-P-S-M	08/13/88	591318	12327
LP-3-T1	100795-P-S-M	08/01/88	595378	12152
W-143-T1	100114-P-S-MAIN	05/02/88	598402	11897
LF-18-T8	100611-P-S-M	07/25/88	598512	12092
X-336-T1	100183-P-S-MAIN	05/02/88	599155	11913
O-22-T1	200079-P-S-M	07/15/88	603488	12031
SP-1-T4	200410-P-S-M	07/26/88	607490	12112
LP-4-T1	100800-P-S-M	08/13/88	610124	12329
NH-18-T1	100367-P-S-M	07/15/88	610312	12040
U-16-T1	100417-P-S-M	07/15/88	618000	12052
LP-2-T2	100788-P-S-M	08/13/88	618760	12322
SP-254-T2	100674-P-S-M	07/22/88	620466	12108
X-136-T3	100160-P-S-MAIN	05/02/88	621189	11907
C-11-T1	200033-P-S-MAIN	05/02/88	621207	11942
SP-2-T2	200435-P-S-M	07/27/88	621425	12117
SP-17B-T1	200472-P-S-M	08/04/88	622300	12156
W-143-T8	100117-P-S-MAIN	05/02/88	622745	11894
Z-133-T1	100255-P-S-MAIN	04/29/88	628158	11922
SP-29-T1	200402-P-S-M	07/26/88	636467	12135
LP-3-T3	100797-P-S-M	08/13/88	642057	11931
W-PIER 4-T7	200005-P-S-MAIN	06/01/88	642109	11954
W-143-T2	100125-P-S-MAIN	05/02/88	644139	11891
W-143-T11	100120-P-S-MAIN	05/02/88	645627	11893
W-143-T10	100108-P-S-MAIN	05/02/88	645660	11889
D-29-T1	200035-P-S-MAIN	05/02/88	645685	11925
V-28-T2	200273-P-S-M	07/23/88	650885	12074
NH-95-T3	200346-P-S-MAIN	07/22/88	654038	12105
CEP-113-T1	100345-P-S-M	07/15/88	654430	12196
W-62-T1	100073-P-S-MAIN	05/02/88	656004	11886
W-143-T6	100102-P-S-MAIN	05/02/88	658882	11888
A-125-T1	100221-P-S-MAIN	05/02/88	660803	11926
W-PIER 4-T6	200004-P-S-MAIN	06/01/88	661946	11952

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Q-81-T1	100017-P-S-MAIN	04/28/88	663867	11919
I-43-T1	200056-P-S-M	06/30/88	664035	12013
X-134-T1	100161-P-S-MAIN	05/02/88	665142	11909
W-PIER 2-T2	100141-P-S-MAIN	05/02/88	665218	11903
X-132-T1	100153-P-S-MAIN	05/02/88	665334	11901
W-313-T1	100052-P-S-MAIN	05/02/88	667119	11911
SP-31-T1	200413-P-S-M	07/26/88	668426	12113
W-PIER 3-T1	100137-P-S-MAIN	05/02/88	669078	11899
CI-T1A-T1	200606-P-S-M	08/02/88	671815	12145
LP-2-T4	100791-P-S-M	08/13/88	674509	12328
MCA-600-T1	100875-P-S-M	07/28/88	676499	12131
X-136-T1	100158-P-S-MAIN	05/02/88	676671	11904
V-28-T3	200261-P-S-M	07/23/88	680419	12077
LF-34-T1	100605-P-S-M	07/25/88	684393	12096
W-PIER 4-T2	200009-P-S-MAIN	06/01/88	684683	11949
W-385-T1	100080-P-S-MAIN	04/28/88	689737	11918
LF-18-T7	100615-P-S-M	07/25/88	695550	12087
SP-17A-T1	200471-P-S-M	08/03/88	697497	12148
LP-3-T6	100785-P-S-M	08/13/88	699625	12320
MCA-602-T1	100876-P-S-M	07/28/88	701584	12132
X-360-T1	100180-P-S-MAIN	05/02/88	704481	11910
V-28-T4	200260-P-S-M	07/23/88	707878	12078
SP-48-T1	200469-P-S-M	08/01/88	714950	12149
SP-31-T6	200441-P-S-M	07/27/88	719508	12116
X-132-T2	100155-P-S-MAIN	05/02/88	719630	11906
Z-140-T1	100261-P-S-MAIN	04/29/88	726414	11920
X-70-T1	100181-P-S-MAIN	05/02/88	747983	11912
SP-31-T3	200415-P-S-M	07/26/88	785779	12114
A-48-T1	100222-P-S-MAIN	05/02/88	786040	11928
T-26-T1	200119-P-S-MAIN	07/15/88	796695	12048
SP-65-T1	100478-P-S-M	07/23/88	798184	12066
NH-95-T1	200343-P-S-M	07/22/88	810518	12103
MB-28-T1	200118-P-S-MAIN	07/15/88	815391	12047
SP-362-T1	100677-P-S-M	07/22/88	828888	12110
P-1-T2	100620-P-S-M	07/25/88	833461	12080
P-1-T3	100621-P-S-M	07/25/88	837338	12095
Z-309-T5	100229-P-S-MAIN	05/02/88	842553	11923
W-PIER 4-T3	200008-P-S-MAIN	06/01/88	844370	11950
S-29-T1	200117-P-S-MAIN	07/15/88	850026	12049
P-1-T4	100622-P-S-M	07/25/88	850451	12086

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - PCB DEVICES PPP > 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-167-T1	200501-P-S-M	08/02/88	852303	12153
SP-31-T2	200414-P-S-M	07/26/88	852845	12115
CD-1-T1	200113-P-S-M	07/15/88	862743	12037
P-1-T1	100619-P-S-M	07/23/88	863723	12081
LP-167-T2	200500-P-S-M	08/02/88	871368	12154
C-9-T1	200032-P-S-MAIN	05/02/88	877920	11924
NH-21-T1	100366-P-S-M	07/15/88	905004	12039
LF-53-T1	100607-P-S-M	07/25/88	955866	12094
CA-483-T1	200636-P-S-M	08/03/88	961256	12146
NH-87-T1	100368-P-S-M	07/15/88	966564	12043
CA-482-T1	200635-P-S-M	08/03/88	967801	12147
V-51-T1	200237-P-S-M	07/15/88	977980	12054
NH-15-T1	100370-P-S-M	07/15/88	986313	12041
*** Total ***				
			102515107	

APPENDIX F
PCB-CONTAMINATED DEVICES

Page No. 1
06/20/89

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SDA-232-T1	200666-P-S-M	08/04/88	52	47820
SP-346-T3	100866-P-S-M	07/28/88	53	47766
NH-159-T1	200626-P-S-TB-3	12/14/88	53	48306
W-PIER 5-T1	200708-P-S-M	08/09/88	54	47805
V-67-T1	100590-P-S-M	07/25/88	55	47743
P-1-CB15	100637-P-S-CB-M	07/25/88	56	47734
MCE-53-T1	101273-P-S-M	09/08/88	56	47910
NM-19-T1	101313-P-S-M	09/16/88	57	47913
A-104-T1	100210-P-S-MAIN	06/01/88	58	47424
NH-159-T1	200626-P-S-TB-1	12/15/88	58	48304
SP-346-T1	100858-P-S-M	07/28/88	59	47762
BEN-155-T3	100532-P-S-M	07/15/88	60	47649
N-29-T4	200093-P-S-MAIN	07/15/88	60	47673
NH-159-T1	200626-P-S-TB-2	12/15/88	60	48305
SDA-334-T2	101270-P-S-M	08/09/88	62	47840
Z-107-T1	200458-P-S-M	03/09/89	62	48833
LAG-105-T2	101476-P-S-M	12/15/88	63	48194
V-58-T2	100587-P-S-M	07/25/88	63	47742
M-110-S3	200101-P-S-SW	07/15/88	64	47670
V-52-CB1	200843-P-S-M	09/13/88	65	47929
HEW-45-T1	101076-P-S-M	08/06/88	66	47821
SDA-334-T4	101272-P-S-M	08/09/88	66	47838
SP-113-T3	101406-P-S-M	09/16/88	66	47936
Z-309-T3	100226-P-S-MAIN	05/02/88	66	47341
A-104-T2	100209-P-S-NL-TC	06/01/88	67	47425
Z-107-T3	200460-P-S-M	03/09/89	67	48832
NH-148-T1	100386-P-S-M	07/15/88	68	47665
SP-86-T4	200448-P-S-M	07/26/88	68	47761
P-1-CB8	100630-P-S-CB-M	07/25/88	71	47735
V-88-S2	200296-P-S-SW	07/25/88	72	47747
K-BB1-S4	200106-P-S-SW-C	07/15/88	73	47663
SP-118-T3	101403-P-S-M	09/16/88	74	47935
P-1-CB17	100639-P-S-CB-M	07/25/88	75	47733
V-47-T2	200253-P-S-M	07/23/88	75	47725
V-51-CB3	200240-P-S-CB-M	07/23/88	76	47726
V-47-T1	200252-P-S-M	07/23/88	77	47729
CEP-PIER 22-T6	200748-P-S-M	08/05/88	79	47808
X-358-T1	100194-P-S-MAIN	06/01/88	80	48078
CEP-176-T1	100316-P-S-M	06/29/88	82	47553
SDA-78-T1	100941-P-S-M	07/19/88	83	47655

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-11-T4	101417-P-S-M	09/13/88	84	47932
CEP-170-T1	101073-P-S-M	08/05/88	86	47819
NH-5-T1	101117-P-S-M	08/06/88	86	47824
NH-159-T2	101524-P-S-M	12/12/88	86	48188
V-47-T3	200254-P-S-M	07/23/88	87	47730
R-43-T2	200671-P-S-M	08/04/88	88	47799
A-104-T7	101503-P-S-M	12/13/88	90	48187
CA-7955-T1	100706-P-S-M	07/15/88	92	47688
R-46-T1	200115-P-S-M	07/15/88	94	47661
V-91-S16	200311-P-S-SW-M	07/25/88	95	47746
T-37-T2	101469-P-S-M	12/16/88	96	48302
C-9-S1	200034-P-S-SW	05/02/88	98	47343
V-111-T2	101183-P-S-M	08/06/88	98	47822
Z-309-T8	100233-P-S-MAIN	05/02/88	99	47346
A-80-S1	100200-P-S-SW-RIGHT	06/01/88	101	47427
V-111-T1	101182-P-S-M	08/09/88	103	47834
W-163-EE-T1	100099-P-S-MAIN	05/02/88	108	47323
V-51-CB9	200246-P-S-M	07/23/88	108	47731
V-64-CB2	101437-P-S-M	09/16/88	109	47937
LP-4-T7	100780-P-S-M	08/01/88	110	47789
P-1-CB18	100640-P-S-CB-M	07/25/88	110	47738
NH-5-T3	101119-P-S-M	08/06/88	112	47825
CEP-89-T1	101030-P-S-M	08/05/88	113	47807
LP-112-T14	100825-P-S-M	08/01/88	114	47788
SP-11-T2	101415-P-S-M	09/13/88	114	47931
SEW-PT-T5	101522-P-S-M	12/14/88	115	48308
X-26-T1	100186-P-S-MAIN	05/02/88	115	47327
CEP-193-CB3	100282-P-S-OCB-M	06/27/88	118	47549
V-66-T4	200862-P-S-M	09/13/88	120	47928
X-13-T1	100172-P-S-MAIN	05/02/88	121	47324
CD-3-S3	200111-P-S-SW-M	07/15/88	122	47662
SP-11-T1	101414-P-S-M	09/13/88	122	47930
V-111-T3	101184-P-S-M	08/09/88	123	47833
R-43-T3	200672-P-S-M	08/04/88	124	47798
LAG-2-T3	100992-P-S-M	08/04/88	125	47803
SP-11-T3	101416-P-S-M	09/13/88	125	47934
W-127-S1	100070-P-S-SW-MAIN	05/02/88	126	47329
SC-407-T2	101292-P-S-M	09/08/88	128	47911
W-176-T3	100076-P-S-MAIN	05/02/88	129	47320
V-64-CB1	100582-P-S-CB	07/25/58	133	47741

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
U-51-S1	200796-P-S-M	09/16/88	134	47922
CEP-64-T1	100320-P-S-M	06/29/88	137	47551
W-337-T5	101492-P-S-M	12/16/88	137	48301
CA-80-T2	101537-P-S-M	12/15/88	139	48190
Q-84-T4	100045-P-S-MAIN	04/04/88	139	47333
CA-1145-T1	100702-P-S-M	07/15/88	141	47540
P-1-CB3	100625-P-S-CB-M	07/25/88	143	47736
SP-256-T1	100675-P-S-M	07/22/88	144	47752
Q-6-S2	100020-P-S-CENTER	04/28/88	148	47334
E-25-T1	200039-P-S-MAIN	05/02/88	151	47345
SEW-PT-T4	101521-P-S-M	12/14/88	151	48310
SEW-PT-T6	101523-P-S-M	12/14/88	153	48309
CI-82-S1	200558-P-S-SW-L	07/28/88	154	47769
CI-82-S1	200558-P-S-SW-R	07/29/88	154	47772
LP-112-T2	100813-P-S-M	08/03/88	158	47785
V-66-T6	200863-P-S-M	09/13/88	161	47927
P-4-T1	200231-P-S-M	07/15/88	167	47681
LP-18-T6	200335-P-S-M	07/22/88	172	47749
LP-18-T4	200333-P-S-M	07/22/88	173	47750
A-81-T1	100203-P-S-M	06/03/88	173	47426
FRP-6-T1	101109-P-S-M	08/09/88	174	47832
NM-59-A-T1	101298-P-S-M	09/09/88	174	47919
W-181-T1	200422-P-S-M	07/27/88	174	47758
NH-5-T2	101118-P-S-M	08/06/88	177	47823
K-M1-T1	200060-P-S-M	06/30/88	179	47567
CEP-6-T2	100326-P-S-TC	06/29/88	180	47550
Z-194-T1	100265-P-S-MAIN	04/29/88	180	47336
LP-18-T5	200334-P-S-M	07/22/88	182	47751
W-337-T6	101493-P-S-M	12/16/88	183	48303
R-43-T1	200104-P-S-M	07/15/88	184	47664
CEP-S-H-35-T1	100305-P-S-M	06/27/88	185	47545
V-51-T4	101540-P-S-M	12/15/88	185	48191
NH-23-T3	200724-P-S-M	08/05/88	186	47811
NH-23-T1	200722-P-S-M	08/05/88	188	47813
SP-72-T1	101542-P-S-M	12/15/88	189	48193
W-337-T7	101494-P-S-M	12/16/88	190	48197
SDA-204-T2	101241-P-S-M	08/09/88	192	47839
Y-100-A-T3	200021-P-S-M	05/03/88	195	47351
CI-88-T1	200550-P-S-M	07/28/88	196	47771
A-104-T13	101509-P-S-M	12/14/88	196	48307

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
N-25-T2	200082-P-S-M	07/15/88	198	47659
A-68-T3	100887-P-S-M	07/28/88	200	47765
U-51-S2	200795-P-S-M	09/16/88	200	47921
W-193-T1	100071-P-S-MAIN	05/02/88	201	47321
A-68-T1	100886-P-S-M	07/15/88	203	47650
V-51-CB2	200239-P-S-CB-MAIN	07/23/88	205	47728
CA-7905-T1	100713-P-S-M	07/15/88	208	47544
CI-138-T1	200513-P-S-M	08/02/88	208	47790
W-181-T2	200423-P-S-M	07/27/88	208	47760
P-1-CB12	100634-P-S-CB-M	07/25/88	209	47737
CA-7851-T1	100715-P-S-M	07/15/88	213	47683
NM-ABAN-T2	101309-P-S-M	09/09/88	213	47917
W-181-T3	200424-P-S-M	07/27/88	213	47759
A-68-T2	100279-P-S-M	06/27/88	217	47546
CA-7850-T1	100719-P-S-M	07/15/88	217	47685
V-66-T5	200857-P-S-M	09/16/88	217	47938
H-6H-T1	100403-P-S-M	07/15/88	220	47666
Y-100-A-T1	200019-P-S-MAIN	05/02/88	222	47347
CI-82-S1	200558-P-S-SW-C	07/28/88	227	47768
NH-23-T2	200723-P-S-M	08/05/88	228	47814
CA-7929-T1	100711-P-S-M	07/15/88	229	47543
V-44-S1	200399-P-S-SW-R	07/22/88	229	47755
N-29-T1	200673-P-S-M	08/04/88	230	47801
NM-59-A-S1	101297-P-S-SW-R	09/09/88	230	47912
SC-405-T1	200378-P-S-M	07/26/88	231	47757
U-48-T4	101156-P-S-M	08/09/88	232	47835
CA-80-T1	100869-P-S-LTC	07/28/88	234	47764
SP-156-T1	101343-P-S-M	09/12/88	234	47924
CEP-222-T1	101031-P-S-M	08/09/88	235	47804
N-29-T2	200674-P-S-M	08/04/88	236	47800
CA-80-T1	100869-P-S-M	07/28/88	238	47763
SP-62-T3	101408-P-S-M	09/13/88	238	47933
N-25-T1	200081-P-S-M	07/15/88	241	47660
CA-7952-T1	100828-P-S-M	07/15/88	242	47686
CEP-PIER 22-T8	200750-P-S-M	08/05/88	242	47816
NH-159-PT3	200633-P-S-M	08/03/88	245	47783
V-44-S1	200399-P-S-SW-C	07/22/88	246	47754
SDA-78-T2	100942-P-S-M	07/19/88	247	47656
CA-1111-T1	100717-P-S-M	07/15/88	248	47684
SP-15-T3	200467-P-S-M	08/01/88	249	47787

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
N-19A-S1	200096-P-S-SW-C	07/15/88	250	47674
CEP-PIER 22-T5	200747-P-S-M	08/05/88	253	47817
FRP-37-T1	101092-P-S-M	08/05/88	256	47818
SP-72-T8	100472-P-S-M	07/23/88	257	47724
SEW-PT-T7	101517-P-S-M	12/12/88	257	48189
CI-132-T1	200522-P-S-M	08/04/88	258	47794
CI-142-T1	200551-P-S-M	07/28/88	260	47770
NH-159-PT1	200631-P-S-M	08/03/88	260	47784
G-29-C-T1	100347-P-S-M	07/15/88	262	47668
N-29-T3	200675-P-S-M	08/04/88	262	47797
NH-25-T2	101058-P-S-M	08/05/88	262	47810
NH-200-T2	100362-P-S-M	07/15/88	263	47667
Q-84-T6	100047-P-S-MAIN	05/02/88	266	47326
SDA-84-T3	100948-P-S-M	07/19/88	268	47658
CA-8015-T1	100705-P-S-M	07/15/88	274	47541
SC-14-T2	100907-P-S-M	07/15/88	275	47652
SC-14-T3	100908-P-S-M	07/15/88	276	47653
A-104-T1	100210-P-S-TC-LOWER	05/16/88	277	47360
NH-159-PT2	200632-P-S-M	08/02/88	277	47779
NH-25-T1	101057-P-S-M	08/05/88	279	47815
SC-14-T1	100906-P-S-M	07/15/88	280	47651
P-1-T9	200900-P-S-M	09/16/88	281	47939
NM-ABAN-T1	101308-P-S-M	09/09/88	285	47916
SDA-78-T3	100943-P-S-M	07/19/88	294	47657
CI-144-T1	200607-P-S-M	08/02/88	295	47778
V-51-T3	101539-P-S-M	12/15/88	297	48192
SDA-204-T3	101242-P-S-M	08/09/88	299	47842
P-1-CB20	101555-P-S-M	12/13/88	301	48186
Z-105-T1	100249-P-S-MAIN	04/29/88	307	47338
X-13-T3	100174-P-S-MAIN	05/02/88	308	47325
CA-BBC-T1	100652-P-S-M	07/15/88	317	47538
V-44-S1	200399-P-S-SW-L	07/26/88	317	47756
CA-136-T1	101232-P-S-M	08/09/88	318	47837
U-48-T5	101157-P-S-M	08/09/88	319	47836
P-87-T1	100927-P-S-MAIN	07/15/88	324	47677
CA-TC-T1	100653-P-S-M	07/15/88	328	47539
V-51-T1	200237-P-S-LTC	07/23/88	333	47727
SC-8-T1	100842-P-S-M	08/04/88	334	47792
T-45-T6	100596-P-S-M	07/25/88	335	47739
SDA-204-T1	101240-P-S-M	08/09/88	336	47841

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Z-133-S2	100252-P-S-SW-MAIN	04/29/88	339	47337
CEP-222-T3	101033-P-S-M	08/05/88	340	47806
SP-313-T1	200893-P-S-M	09/19/88	342	47957
CEP-222-T2	101032-P-S-M	08/05/88	343	47809
NH-25-T3	101059-P-S-M	08/05/88	345	47812
CI-141-T1	200520-P-S-M	08/04/88	348	47796
NM-ABAN-T3	101310-P-S-M	09/09/88	348	47915
CI-129-T1	200509-P-S-M	08/02/88	349	47791
Z-103-T3	100244-P-S-MAIN	05/02/88	351	47340
SP-156-T2	101344-P-S-M	09/12/88	352	47925
CI-133-T1	200524-P-S-M	08/04/88	356	47795
LAG-16-T1	100993-P-S-M	08/04/88	356	47802
P-1-CB5	100627-P-S-CB-M	07/25/88	359	47732
CI-98-T1	200545-P-S-M	07/28/88	360	47767
CI-336-T1	200602-P-S-M	08/02/88	363	47781
CA-TENN-T1	101197-P-S-M	08/11/88	363	47844
Q-55-T1	100016-P-S-MAIN	05/02/88	365	47328
NM-59-A-S1	101297-P-S-SW-C	09/09/88	367	47920
SP-156-T3	101345-P-S-M	09/12/88	369	47923
CEP-8-T2	100302-P-S-M	06/27/88	370	47548
Z-103-T2	100242-P-S-MAIN	05/02/88	370	47342
NM-59-A-S1	101297-P-S-SW-L	09/09/88	375	47918
K-M1-T3	200062-P-S-M	06/30/88	382	47568
CEP-6-T2	100326-P-S-M	06/29/88	388	47554
P-1-T10	200901-P-S-M	09/16/88	390	47940
NM-107-T3	101317-P-S-M	09/16/88	392	47914
CI-145-S1	200527-P-S-SW-R	08/04/88	398	47793
Z-103-T1	100243-P-S-MAIN	04/29/88	399	47339
CEP-5-T1	100331-P-S-M	06/29/88	403	47552
T-45-T11	101497-P-S-M	12/15/88	409	48196
Q-6-T5	100018-P-S-MAIN	04/28/88	418	47335
A-104-T15	101511-P-S-M	12/14/88	431	48314
T-45-T9	101495-P-S-M	12/16/88	453	48300
Z-103-T5	100240-P-S-MAIN	05/02/88	456	47344
CI-136-T1	200511-P-S-M	08/01/88	459	47786
A-104-T14	101510-P-S-M	12/14/88	468	48313
CI-137-T1	200518-P-S-M	08/09/88	476	47830
CEP-6-T5	101481-P-S-M	12/15/88	478	48195
CEP-8-T1	100298-P-S-M	06/27/88	483	47547
T-45-T10	101496-P-S-M	12/16/88	484	48198

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - CONTAMINATED > 49 AND < 500

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CI-336-T2	200603-P-S-M	08/09/88	485	47829
SP-100-T1	101143-P-S-M	08/11/88	494	47843
W-337-T1	100094-P-S-MAIN	05/02/88	497	47322
*** Total ***				
			51222	

APPENDIX G
NON-PCB DEVICES

Page No. 1
06/20/89

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-96-T7	100272-P-S-MAIN	04/28/88	2	10561
CEP-96-T9	100274-P-S-MAIN	04/28/88	2	10572
CEP-96-T8	100275-P-S-MAIN	04/28/88	2	10573
CEP-96-T10	100273-P-S-MAIN	04/28/88	2	10574
B-26-S1	200030-P-S-SW	05/02/88	2	10630
CEP-96-CB5	100270-P-S-OCB-B-6	04/28/88	2	10552
CEP-96-CB1	100271-P-S-OCB-MAIN	04/28/88	2	10555
CEP-96-CB5	100270-P-S-OCB-B-2	04/28/88	2	10556
CEP-96-CB5	100270-P-S-OCB-MAIN	04/28/88	2	10558
CEP-96-T6	100276-P-S-LTC-LOWER	04/28/88	2	10559
CEP-96-CB5	100270-P-S-OCB-B-5	04/28/88	2	10562
CEP-96-CB5	100270-P-S-OCB-B-4	04/28/88	2	10564
CEP-96-CB4	100269-P-S-CB-B-2	04/28/88	2	10565
CEP-96-CB4	100269-P-S-CB-B-1	04/28/88	2	10566
CEP-96-CB5	100270-P-S-OCB-B-3	04/28/88	2	10567
CEP-96-CB4	100269-P-S-OCB-MAIN	04/28/88	2	10568
CEP-96-CB3	100268-P-S-CB-B-1	04/28/88	2	10570
CEP-96-CB3	100268-P-S-CB-B-3	04/28/88	2	10571
CEP-96-CB3	100268-P-S-CB-MAIN	04/28/88	2	10576
CEP-96-CB3	100268-P-S-CB-B-6	04/28/88	2	10577
CEP-96-CB5	100270-P-S-OCB-B-1	04/28/88	2	10578
CEP-96-CB3	100268-P-S-CB-B-2	04/28/88	2	10579
CEP-96-CB2	100267-P-S-OCB-MAIN	04/28/88	2	10580
CEP-96-CB4	100269-P-S-CB-B-6	04/28/88	2	10581
CEP-96-CB2	100267-P-S-OCB-B-5	04/28/88	2	10582
CEP-96-CB2	100267-P-S-OCB-B-3	04/28/88	2	10583
CEP-96-CB2	100267-P-S-OCB-B-1	02/28/88	2	10584
CEP-96-CB2	100267-P-S-OCB-B-2	04/28/88	2	10585
CEP-96-CB2	100267-P-S-OCB-B-4	04/28/88	2	10586
CEP-96-CB4	100269-P-S-CB-B-4	04/28/88	2	10554
CEP-96-CB4	100269-P-S-CB-B-5	04/28/88	2	10557
CEP-96-CB4	100269-P-S-CB-B-3	04/28/88	2	10563
A-104-T1	100210-P-S-TC-UPPER	06/01/88	2	10999
A-104-T1	100210-P-S-HV-TC	06/01/88	2	11001
A-104-T1	100210-P-S-NL-TC	06/01/88	2	11002
A-104-T2	100209-P-S-TC-UPPER	06/01/88	2	10997
A-104-T2	100209-P-S-TC-LOWER	06/01/88	2	10998
A-57-S1	100208-P-S-SW-CENTER	06/01/88	2	11033
A-57-S1	100208-P-S-SW-LEFT	06/01/88	2	11034
A-57-T3	100206-P-S-MAIN	06/01/88	2	11027

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
A-80-S1	100200-P-S-SW-CENTER	06/01/88	2	11021
A-80-T1	100196-P-S-MAIN	06/01/88	2	11024
A-80-T2	100197-P-S-MAIN	06/01/88	2	11016
A-81-T5	100202-P-S-MAIN	06/01/88	2	11029
CEP-193-CB5	100284-P-S-OCB-M	06/27/88	2	11556
CEP-186-T1	100293-P-S-M	06/27/88	2	11557
CEP-193-CB7	100286-P-S-OCB-M	06/27/88	2	11559
CEP-209-S1	100304-P-S-SW-M	06/27/88	2	11560
CEP-203-S1	100291-P-S-SW-M	06/27/88	2	11561
CEP-192-S1	100295-P-S-SW-M	06/27/88	2	11565
CEP-193-CB6	100285-P-S-OCB-M	06/27/88	2	11566
CEP-96-S1	100278-P-S-SW-M	06/27/88	2	11567
CEP-186-S1	100292-P-S-SW-M	06/27/88	2	11568
CEP-207-S1	100296-P-S-SW-M	06/27/88	2	11569
CEP-193-T5	100288-P-S-M	06/27/88	2	11570
CEP-126-S1	100322-P-S-SW-C	06/27/88	2	11575
CEP-200-T2	100313-P-S-M	06/27/88	2	11576
CEP-203-T1	100290-P-S-TH	06/27/88	2	11577
CEP-203-T1	100290-P-S-M	06/27/88	2	11578
CEP-202-T1	100319-P-S-M	06/29/88	2	11583
CEP-7-T1	100289-P-S-M	06/29/88	2	11586
CEP-S-H-35-S2	100307-P-S-SW-M	06/29/88	2	11589
CEP-8-T3	100303-P-S-M	06/29/88	2	11590
CEP-6-S2	100328-P-S-SW-M	06/29/88	2	11592
CEP-193-S1	100287-P-S-SW-M	06/29/88	2	11594
CEP-200-S2	100311-P-S-SW-M	06/29/88	2	11597
A-81-S2	100324-P-S-SW-C	06/29/88	2	11598
CEP-192-T1	100294-P-S-M	06/29/88	2	11601
CEP-188-T1	100318-P-S-M	06/29/88	2	11605
A-81-S2	100324-P-S-SW-R	06/29/88	2	11606
CEP-86-T2	100334-P-S-M	06/29/88	2	11609
CEP-126-S1	100322-P-S-SW-L	06/29/88	2	11610
CEP-200-T1	100312-P-S-M	06/29/88	2	11611
CEP-162-S1	100330-P-S-SW-M	06/29/88	2	11614
CEP-156-S2	100309-P-S-SW-M	06/29/88	2	11616
CEP-126-S1	100322-P-S-SW-R	06/29/88	2	11617
A-80-S2	100323-P-S-SW-L	06/29/88	2	11619
CEP-193-CB4	100283-P-S-OCB-M	06/29/88	2	11620
A-80-S2	100323-P-S-SW-R	06/29/88	2	11621
CEP-200-T2	100313-P-S-TH	06/29/88	2	11624

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-200-S1	100310-P-S-SW-M	06/27/88	2	11571
CEP-41-T2	100335-P-S-M	06/29/88	2	11626
A-81-S2	100324-P-S-SW-L	06/29/88	2	11628
A-80-S2	100323-P-S-SW-C	06/29/88	2	11629
I-H&D-T1	200044-P-S-M	06/30/88	2	11670
I-AA1-T5	200051-P-S-M	06/30/88	2	11671
J-50-T1	200057-P-S-M	06/30/88	2	11672
I-G-T1	200043-P-S-M	06/30/88	2	11673
L-28-S1	200072-P-S-SW-R	06/30/88	2	11674
I-128-S1	200045-P-S-SW	06/30/88	2	11676
I-AA1-T6	200052-P-S-M	06/30/88	2	11679
I-AA1-T4	200050-P-S-M	06/30/88	2	11681
CEP-200-T1	100312-P-S-TH	06/29/88	2	11625
BEN-24-T1	100451-P-S-M	07/15/88	2	11886
BEN-22-T1	100452-P-S-M	07/15/88	2	11887
BEN-2-T1	100453-P-S-M	07/15/88	2	11888
BEN-4-T1	100454-P-S-M	07/15/88	2	11889
BEN-6-T1	100455-P-S-M	07/15/88	2	11890
BEN-10-T1	100457-P-S-M	07/15/88	2	11892
BEN-12-T1	100458-P-S-M	07/15/88	2	11893
BEN-14-T1	100459-P-S-M	07/15/88	2	11894
BEN-16-T1	100460-P-S-M	07/15/88	2	11895
BEN-18-T1	100465-P-S-M	07/15/88	2	11896
BEN-20-T1	100466-P-S-M	07/15/88	2	11897
BEN-55-T1	100468-P-S-M	07/15/88	2	11898
BEN-53-T1	100469-P-S-M	07/15/88	2	11899
BEN-51-T1	100470-P-S-M	07/15/88	2	11900
BEN-49-T1	100471-P-S-M	07/15/88	2	11901
BEN-47-T1	100479-P-S-M	07/15/88	2	11902
BEN-45-T1	100480-P-S-M	07/15/88	2	11903
BEN-43-T1	100481-P-S-M	07/15/88	2	11904
BEN-42-T1	100482-P-S-M	07/15/88	2	11905
BEN-41-T1	100483-P-S-M	07/15/88	2	11906
BEN-40-T1	100484-P-S-M	07/15/88	2	11907
BEN-40-T2	100485-P-S-M	07/15/88	2	11908
BEN-40-T3	100486-P-S-M	07/15/88	2	11909
BEN-37-T1	100487-P-S-M	07/15/88	2	11910
BEN-35-T1	100488-P-S-M	07/15/88	2	11911
BEN-33-T1	100489-P-S-M	07/15/88	2	11912
BEN-31-T1	100490-P-S-M	07/15/88	2	11913

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
BEN-82-T1	100491-P-S-M	07/15/88	2	11914
BEN-80-T1	100492-P-S-M	07/15/88	2	11915
BEN-78-T1	100493-P-S-M	07/15/88	2	11916
BEN-76-T1	100495-P-S-M	07/15/88	2	11917
BEN-71-T1	100496-P-S-M	07/15/88	2	11918
BEN-68-T1	100497-P-S-M	07/15/88	2	11919
BEN-68-T2	100498-P-S-M	07/15/88	2	11920
BEN-68-T3	100499-P-S-M	07/15/88	2	11921
BEN-66-T1	100500-P-S-M	07/15/88	2	11922
BEN-64-T1	100501-P-S-M	07/15/88	2	11923
BEN-62-T1	100502-P-S-M	07/15/88	2	11924
BEN-60-T1	100503-P-S-M	07/15/88	2	11925
BEN-116-T1	100504-P-S-M	07/15/88	2	11926
BEN-114-T1	100505-P-S-M	07/15/88	2	11927
BEN-113-T1	100506-P-S-M	07/15/88	2	11928
BEN-112-T1	100507-P-S-M	07/15/88	2	11929
BEN-110-T1	100508-P-S-M	07/15/88	2	11930
BEN-108-T1	100509-P-S-M	07/15/88	2	11931
BEN-106-T1	100510-P-S-M	07/15/88	2	11932
BEN-104-T1	100511-P-S-M	07/15/88	2	11933
BEN-102-T1	100512-P-S-M	07/15/88	2	11934
BEN-100-T1	100513-P-S-M	07/15/88	2	11935
BEN-99-T1	100514-P-S-M	07/15/88	2	11936
BEN-95-T1	100516-P-S-M	07/15/88	2	11938
BEN-93-T1	100517-P-S-M	07/15/88	2	11939
BEN-91-T1	100518-P-S-M	07/15/88	2	11940
BEN-91-T2	100519-P-S-M	07/15/88	2	11941
BEN-139-T1	100520-P-S-M	07/15/88	2	11942
BEN-137-T1	100521-P-S-M	07/15/88	2	11943
BEN-135-T1	100522-P-S-M	07/15/88	2	11944
BEN-132-T1	100523-P-S-M	07/15/88	2	11945
BEN-131-T1	100524-P-S-M	07/15/88	2	11946
BEN-129-T1	100525-P-S-M	07/15/88	2	11947
BEN-127-T1	100526-P-S-M	07/15/88	2	11948
BEN-125-T1	100527-P-S-M	07/15/88	2	11949
BEN-123-T1	100528-P-S-M	07/15/88	2	11950
BEN-121-T1	100529-P-S-M	07/15/88	2	11951
BEN-155-T1	100530-P-S-M	07/15/88	2	11952
BEN-155-T2	100531-P-S-M	07/15/88	2	11953
CA-6531-Q-T1	100547-P-S-M	07/15/88	2	11968

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
BEN-172-T1	100533-P-S-M	07/15/88	2	11954
BEN-167-T1	100538-P-S-M	07/15/88	2	11959
BEN-166-T1	100539-P-S-M	07/15/88	2	11960
BEN-163-T1	100540-P-S-M	07/15/88	2	11961
BEN-158-T1	100541-P-S-M	07/15/88	2	11962
BEN-157-T1	100542-P-S-M	07/15/88	2	11963
BEN-154-T1	100543-P-S-M	07/15/88	2	11964
BEN-152-T1	100544-P-S-M	07/15/88	2	11965
BEN-147-T1	100545-P-S-M	07/15/88	2	11966
CA-6531-T-T1	100546-P-S-M	07/15/88	2	11967
CA-6531-P-T1	100548-P-S-M	07/15/88	2	11969
CA-6531-N-T1	100549-P-S-M	07/15/88	2	11970
CA-6531-K-T1	100550-P-S-M	07/15/88	2	11971
CA-6534-B-T1	100551-P-S-M	07/15/88	2	11521
CA-6534-C-T1	100552-P-S-M	07/15/88	2	11522
CA-179-T1	100553-P-S-M	07/15/88	2	11523
CA-179-T3	100555-P-S-M	07/15/88	2	11525
CA-9-T1	100556-P-S-M	07/15/88	2	11526
CA-6534-H-T1	100557-P-S-M	07/15/88	2	11527
CA-6531-F-T1	100647-P-S-M	07/15/88	2	11529
CA-6531-D-T1	100648-P-S-M	07/15/88	2	11530
CA-6532-C-T1	100649-P-S-M	07/15/88	2	11531
CA-6532-D-T1	100650-P-S-M	07/15/88	2	11532
CA-6532-E-T1	100651-P-S-M	07/15/88	2	11533
CA-6530-F-T1	100654-P-S-M	07/15/88	2	11534
CA-6530-E-T1	100682-P-S-M	07/15/88	2	11535
CA-6530-C-T1	100683-P-S-M	07/15/88	2	11536
CA-6530-B-T1	100684-P-S-M	07/15/88	2	11537
CA-6529-F-T1	100685-P-S-M	07/15/88	2	11538
CA-6529-C-T1	100686-P-S-M	07/15/88	2	11539
CA-6527-A-T1	100687-P-S-M	07/15/88	2	11540
CA-6538-D-T1	100688-P-S-M	07/15/88	2	11541
CA-6528-B-T1	100689-P-S-M	07/15/88	2	11542
CA-6528-C-T1	100690-P-S-M	07/15/88	2	11543
CA-6528-E-T1	100691-P-S-M	07/15/88	2	11544
CA-6526-A-T1	100692-P-S-M	07/15/88	2	11545
CA-CE-58-T1	100693-P-S-M	07/15/88	2	11546
CA-CE-60-T1	100694-P-S-M	07/15/88	2	11547
CA-1152-T1	100695-P-S-M	07/15/88	2	11548
CA-CE-67-T1	100696-P-S-M	07/15/88	2	11549

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CA-1120-T1	100697-P-S-M	07/15/88	2	11550
CA-CE-81-T1	100699-P-S-M	07/15/88	2	11551
CA-CE-80-T1	100700-P-S-M	07/15/88	2	11552
CA-CE-73-T1	100701-P-S-M	07/15/88	2	11553
CA-CE-77-T1	100703-P-S-M	07/15/88	2	11554
CA-CE-76-T1	100704-P-S-M	07/15/88	2	12352
CA-7962-T1	100707-P-S-M	07/15/88	2	12353
CA-64314-T1	100708-P-S-M	07/15/88	2	12354
CA-7915-T1	100712-P-S-M	07/15/88	2	12355
CA-7861-T1	100714-P-S-M	07/15/88	2	12356
CA-1101-T1	100716-P-S-M	07/15/88	2	12357
CA-1111-T2	100718-P-S-M	07/15/88	2	12358
CA-7960-T1	100720-P-S-M	07/15/88	2	12359
CA-7910-T1	100721-P-S-M	07/15/88	2	12360
CA-7926-T1	100722-P-S-M	07/15/88	2	12361
CA-7936-T1	100723-P-S-M	07/15/88	2	12362
CA-438-T1	100829-P-S-M	07/15/88	2	12367
CA-438-T2	100830-P-S-M	07/15/88	2	12368
CA-438-T3	100831-P-S-M	07/15/88	2	11972
A-2-T1	100883-P-S-M	07/15/88	2	11993
A-2-T2	100884-P-S-M	07/15/88	2	11994
A-2-T3	100885-P-S-M	07/15/88	2	11995
CD-C-S2	100442-P-S-SW-M	07/23/88	2	12565
I-42-S1	200042-P-S-SW	07/15/88	2	12041
CEP-210-T1	100359-P-S-M	07/15/88	2	12043
K-J1-T1	200070-P-S-M	07/15/88	2	12045
L-30A-S1	200073-P-S-SW-L	07/15/88	2	12046
K-BB1-T2	200064-P-S-M	07/15/88	2	12048
L-28-S1	200072-P-S-SW-C	07/15/88	2	12051
K-BB1-S1	200066-P-S-SW-C	07/15/88	2	12052
L-28-S1	200072-P-S-SW-L	07/15/88	2	12058
L-30A-S1	200073-P-S-SW-R	07/15/88	2	12059
L-30A-S1	200073-P-S-SW-C	07/15/88	2	12060
K-BB1-T1	200063-P-S-M	07/15/88	2	12063
K-BB1-T3	200065-P-S-M	07/15/88	2	12067
CD-3-T1	200112-P-S-M	07/15/88	2	12073
CD-3-S2	200110-P-S-SW-M	07/15/88	2	12075
H-6H-S1	100402-P-S-SW-C	07/15/88	2	12077
H-9-S1	100404-P-S-SW-L	07/15/88	2	12080
CD-3-S1	200109-P-S-SW-M	07/15/88	2	12082

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
H-6H-S1	100402-P-S-SW-L	07/15/88	2	12087
CD-9-T1	200114-P-S-M	07/15/88	2	12092
CD-2-T1	200107-P-S-M	07/15/88	2	12100
CD-2-S1	200108-P-S-SW-M	07/15/88	2	12101
G-29-C-S3	100355-P-S-SW-C	07/15/88	2	12146
G-29-C-S3	100355-P-S-SW-L	07/15/88	2	12156
G-29-C-S2	100354-P-S-SW-R	07/15/88	2	12158
CEP-195-T1	100338-P-S-M	07/15/88	2	12159
CEP-201-T1	100341-P-S-M	07/15/88	2	12165
CEP-183-T1	100339-P-S-TH	07/15/88	2	12167
G-29-C-T4	100350-P-S-M	07/15/88	2	12168
G-29-C-S4	100356-P-S-SW-R	07/15/88	2	12169
CEP-183-S1	100340-P-S-SW	07/15/88	2	12177
CEP-58-T1	100344-P-S-MAIN	07/15/88	2	12175
G-29-C-S1	100353-P-S-SW-R	07/15/88	2	12176
CEP-12-CB2	100412-P-S-OCB	07/15/88	2	12210
CEP-6-T3	100407-P-S-MAIN	07/15/88	2	12212
CEP-12-S2	100411-P-S-SW-R	07/15/88	2	12215
CEP-12-S2	100411-P-S-SW-C	07/15/88	2	12216
CD-C-S1	100415-P-S-SW-M	07/15/88	2	12223
CD-C-T1	100414-P-S-THROAT	07/15/88	2	12234
CD-C-T1	100414-P-S-M	07/15/88	2	12235
FRP-84A-T1	200161-P-S-M	07/15/88	2	12251
CEP-237-T1	200193-P-S-M	07/15/88	2	12277
CD-CP-T1	200192-P-S-M	07/15/88	2	12279
CA-7968-T1	200191-P-S-M	07/15/88	2	12286
H-2H-S1	100401-P-S-SW-L	07/15/88	2	12081
H-2H-S1	100401-P-S-SW-C	07/15/88	2	12096
LF-59-S1	100617-P-S-SW-M	07/25/88	2	12657
LF-62-S1	100601-P-S-SW-L	07/25/88	2	12659
LF-62-S1	100601-P-S-SW-R	07/25/88	2	12662
LF-62-S1	100601-P-S-SW-C	07/25/88	2	12672
LF-SW-230	100606-P-S-SW-M	07/25/88	2	12674
BEN-26-T1	100467-P-S-M	07/23/88	2	12590
LP-23-T3	200324-P-S-M	07/21/88	2	12798
LP-23-T3	200324-P-S-TH	07/21/88	2	12799
LP-23-T2	200322-P-S-M	07/22/88	2	12812
LP-121-S1	200339-P-S-SW-L	07/22/88	2	12815
LP-46-S1	200336-P-S-SW-C	07/22/88	2	12816
LP-36-S1	200340-P-S-SW-M	07/22/88	2	12817

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-36-T1	200341-P-S-M	07/22/88	2	12818
A-50-T1	100655-P-S-M	07/22/88	2	12820
LP-36-S2	200342-P-S-SW-M	07/22/88	2	12821
LP-172-T1	200326-P-S-LTC	07/22/88	2	12825
LP-46-S1	200336-P-S-SW-L	07/22/88	2	12826
LP-172-T1	200326-P-S-M	07/22/88	2	12827
LP-96-T1	200327-P-S-M	07/22/88	2	12829
LP-18-T1	200330-P-S-M	07/22/88	2	12830
LP-46-S1	200336-P-S-SW-R	07/22/88	2	12831
LP-178-T1	200328-P-S-M	07/22/88	2	12836
LP-121-S1	200339-P-S-SW-C	07/22/88	2	12837
LP-178-T2	200329-P-S-M	07/22/88	2	12838
LP-18-T3	200332-P-S-M	07/22/88	2	12839
LP-18-T2	200331-P-S-M	07/22/88	2	12840
CEP-PIER 25-T3	200380-P-S-T	07/26/88	2	12895
CEP-PIER 24-S6	200394-P-S-M	07/26/88	2	12918
CEP-PIER 24-T3	200392-P-S-T	07/26/88	2	12919
CEP-PIER 24-T5	200386-P-S-M	07/26/88	2	12920
CEP-PIER 24-T5	200386-P-S-T	07/26/88	2	12924
CEP-PIER 24-T1	200395-P-S-M	07/26/88	2	12928
CEP-PIER 24-S1	200396-P-S-M	07/26/88	2	12931
CEP-PIER 24-S4	100766-P-S-SW-M	07/26/88	2	12944
CA-CENT-SUB-T2	100726-P-S-M	07/27/88	2	12950
CA-CENT-SUB-CB2	100728-P-S-M	07/27/88	2	12951
CA-CENT-SUB-T2	100726-P-S-LTC	07/27/88	2	12952
CA-CENT-SUB-CB1	100727-P-S-M	07/27/88	2	12953
CEP-PIER 25-V1-S1	200456-P-S-SW-M	07/27/88	2	12954
CA-CENT-SUB-CB3	100729-P-S-M	07/27/88	2	12956
CA-CENT-SUB-CB4	100730-P-S-M	07/27/88	2	12957
CEP-PIER 25-S3	200370-P-S-SW-MAIN	07/26/88	2	12896
CEP-PIER 25-S2	200373-P-S-M	07/26/88	2	12904
CEP-PIER 25-S5	200381-P-S-M	07/26/88	2	12905
CEP-PIER 25-S1	200372-P-S-M	07/26/88	2	12906
CEP-PIER 25-T2	200368-P-S-T	07/26/88	2	12907
CEP-PIER 25-S6	200382-P-S-M	07/26/88	2	12908
CEP-PIER 25-V2-S4	100763-P-S-SW-M	07/26/88	2	12971
LP-13-CB1	100749-P-S-M	08/02/88	2	12977
LP-14-S1	100739-P-S-SW-L	07/27/88	2	12979
LP-14-T5	100735-P-S-M	07/27/88	2	12981
CEP-PIER 25-V2-T2	100761-P-S-T	07/27/88	2	12983

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-12-CB1	100753-P-S-M	07/27/88	2	12984
LP-14-S2	100745-P-S-SW-R	07/27/88	2	12985
LP-14-S1	100739-P-S-SW-C	07/27/88	2	12986
LP-14-S2	100745-P-S-SW-L	07/27/88	2	12987
LP-14-S1	100739-P-S-SW-R	07/28/88	2	12988
CEP-PIER 25-V1-S2	200457-P-S-SW-M	07/28/88	2	12990
CEP-PIER 24-S3	100765-P-S-SW-M	07/28/88	2	12991
CEP-PIER 25-V2-T2	100761-P-S-M	07/28/88	2	12994
CEP-PIER 25-V2-S3	100762-P-S-SW-M	07/28/88	2	12996
LP-14-S2	100745-P-S-SW-C	07/28/88	2	12998
CEP-PIER 24-T2	100764-P-S-M	07/28/88	2	13001
CEP-PIER 25-V1-T1	200455-P-S-M	07/28/88	2	13002
CEP-PIER 24-T2	100764-P-S-TH	07/28/88	2	13003
J-50-T2	200577-P-S-M	07/28/88	2	13009
A-3-T3	100882-P-S-M	07/28/88	2	13026
LP-SW-221-S1	100861-P-S-M	07/28/88	2	13029
LP-170-T1	100862-P-S-M	07/28/88	2	13030
LP-170-S1	100863-P-S-M	07/28/88	2	13033
CA-80-CB2	100871-P-S-M	07/28/88	2	13045
CI-82-T3	200559-P-S-M	07/28/88	2	13055
CI-004-T1	200549-P-S-M	07/28/88	2	13059
E-25-T2	200568-P-S-M	07/28/88	2	13066
E-25-T4	200570-P-S-M	07/28/88	2	13067
E-25-CB1	200571-P-S-M	07/28/88	2	13069
CI-82-T4	200560-P-S-M	07/28/88	2	13070
E-25-T3	200569-P-S-M	07/29/88	2	13074
E-4-T2	200566-P-S-M	07/29/88	2	13076
E-4-T1	200565-P-S-M	07/29/88	2	13077
E-4-T3	200567-P-S-M	07/29/88	2	13078
H-4-T1	200584-P-S-M	08/04/88	2	13081
CI-251-T1	200597-P-S-M	08/04/88	2	13082
CI-229-S1	200610-P-S-SW-R	08/02/88	2	13134
CI-229-S1	200610-P-S-SW-C	08/02/88	2	13140
H-3-T1	200585-P-S-M	08/02/88	2	13141
CI-336-CB3	200604-P-S-M	08/02/88	2	13145
CI-229-T2	200611-P-S-M	08/02/88	2	13146
H-1-T1	200586-P-S-M	08/02/88	2	13148
CI-229-T1	200609-P-S-M	08/02/88	2	13154
CI-MF-T1	200605-P-S-M	08/02/88	2	13155
CA-7-S1	200639-P-S-SW-C	08/02/88	2	13156

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
H-6-T1	200588-P-S-M	08/02/88	2	13158
CI-65-T2	200600-P-S-M	08/02/88	2	13159
H-8-T1	200591-P-S-M	08/02/88	2	13160
H-7-T1	200590-P-S-M	08/02/88	2	13161
CI-229-S1	200610-P-S-SW-L	08/03/88	2	13165
CA-234-CB1	200640-P-S-M	08/03/88	2	13167
H-2-T1	200587-P-S-M	08/03/88	2	13169
CA-234-T1	200642-P-S-M	08/03/88	2	13176
CA-7-S1	200639-P-S-SW-L	08/03/88	2	13178
CA-234-CB2	200641-P-S-M	08/03/88	2	13179
CA-234-T2	200643-P-S-M	08/03/88	2	13180
CA-7-S1	200639-P-S-SW-R	08/03/88	2	13185
CEP-189-T1	100804-P-S-M	08/03/88	2	13188
CEP-58-F-T1	100803-P-S-M	08/03/88	2	13190
LP-112-T4	100815-P-S-M	08/03/88	2	13207
LP-112-T6	100817-P-S-M	08/03/88	2	13208
CI-PPS-S1	200517-P-S-SW-R	08/03/88	2	13210
LP-112-T10	100821-P-S-M	08/01/88	2	13222
LP-112-T13	100824-P-S-M	08/01/88	2	13223
CI-PPS-S1	200517-P-S-SW-L	08/01/88	2	13224
LP-3-CB1	100786-P-S-M	08/01/88	2	13231
LP-4-CB1	100782-P-S-M	08/01/88	2	13232
LP-4-CB2	100802-P-S-M	08/01/88	2	13236
LP-112-T17	200494-P-S-M	08/02/88	2	13253
LP-112-S5	200491-P-S-SW-R	08/02/88	2	13255
LP-112-S6	200492-P-S-SW-L	08/02/88	2	13257
LP-112-S7	200493-P-S-SW-L	08/02/88	2	13258
CI-PPS-T2	200516-P-S-M	08/04/88	2	13277
A-48-T3	200506-P-S-M	08/04/88	2	13283
A-43-T3	200505-P-S-M	08/04/88	2	13286
CI-002-T1	200528-P-S-M	08/04/88	2	13292
L-30A-T2	200621-P-S-M	08/04/88	2	13317
K-BB1-T6	200624-P-S-M	08/04/88	2	13322
HEW-768-1-T1	101007-P-S-M	08/04/88	2	13326
HEW-768-7-T1	101010-P-S-M	08/04/88	2	13327
HEW-768-4-T1	101009-P-S-M	08/04/88	2	13330
HEW-768-2-T1	101008-P-S-M	08/04/88	2	13335
HEW-10-T1	101001-P-S-M	08/04/88	2	13356
HEW-7-T1	101002-P-S-M	08/04/88	2	13359
HEW-2-T1	101006-P-S-M	08/04/88	2	13368

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
HEW-8-T1	101000-P-S-M	08/04/88	2	13371
H-9-T3	100989-P-S-M	08/04/88	2	13379
LAG-2-T2	100991-P-S-M	08/04/88	2	13381
LAG-13-T1	100995-P-S-M	08/04/88	2	13382
LAG-8-T1	100996-P-S-M	08/04/88	2	13383
LAG-5-T1	100997-P-S-M	08/04/88	2	13384
LAG-2-T1	100990-P-S-M	08/04/88	2	13385
H-9-T1	100987-P-S-M	08/04/88	2	13881
H-9-T2	100988-P-S-M	08/04/88	2	13391
HEW-6-T1	101003-P-S-M	08/04/88	2	13394
HEW-15-T1	100999-P-S-M	08/04/88	2	13404
HEW-17-T1	100998-P-S-M	08/04/88	2	13406
HEW-16-T1	101025-P-S-M	08/04/88	2	13430
HEW-26-T1	101019-P-S-M	08/04/88	2	13431
HEW-59-T1	101021-P-S-M	08/04/88	2	13433
HEW-21-T1	101022-P-S-M	08/04/88	2	13434
HEW-35-T1	101013-P-S-M	08/04/88	2	13436
HEW-58-T1	101024-P-S-M	08/04/88	2	13437
HEW-24-T1	101020-P-S-M	08/04/88	2	13438
HEW-36-T1	101012-P-S-M	08/04/88	2	13439
HEW-34-T1	101014-P-S-M	08/04/88	2	13441
HEW-48-T1	101029-P-S-M	08/04/88	2	13442
HEW-25-T1	101018-P-S-M	08/04/88	2	13443
HEW-20-T1	101023-P-S-M	08/04/88	2	13444
HEW-30-T1	101017-P-S-M	08/04/88	2	13445
HEW-31-T1	101016-P-S-M	08/04/88	2	13446
HEW-33-T1	101015-P-S-M	08/04/88	2	13447
CEP-PIER 23-T2	200714-P-S-M	08/04/88	2	13448
CEP-PIER 23-T1	200713-P-S-M	07/31/48	2	13449
CEP-PIER 23-T2	200714-P-S-M	08/04/88	2	13450
CEP-PIER 23-S2	200718-P-S-M	08/04/88	2	13451
CEP-PIER 23-T3	200716-P-S-M	08/04/88	2	13452
CEP-PIER 23-T3	200716-P-S-M	08/04/88	2	13453
CEP-PIER 23-T4	200717-P-S-M	08/04/88	2	13454
CEP-84-T1	101034-P-S-M	08/05/88	2	13455
CEP-155-T3	101052-P-S-M	08/05/88	2	13456
CEP-PIER 23-T4	200717-P-S-M	08/05/88	2	13457
CEP-388-T3	101048-P-S-M	08/05/88	2	13459
CEP-PIER 23-S1	200715-P-S-M	08/05/88	2	13460
CEP-388-T2	101047-P-S-M	08/09/88	2	13461

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-107-T1	101037-P-S-M	08/09/88	2	13462
CEP-84-T2	101035-P-S-M	08/09/88	2	13463
CEP-405-T1	101045-P-S-M	08/09/88	2	13464
CEP-84-T3	101036-P-S-M	08/05/88	2	13465
CEP-185-T1	101053-P-S-M	08/05/88	2	13466
CEP-155-T4	101049-P-S-M	08/05/88	2	13467
CEP-155-T2	101051-P-S-M	08/05/88	2	13468
CEP-60-T1	101041-P-S-M	08/05/88	2	13469
CEP-107-T3	101039-P-S-M	08/05/88	2	13470
CEP-406-T1	101044-P-S-M	08/05/88	2	13472
CEP-155-T1	101050-P-S-M	08/05/88	2	13473
CEP-PIER 23-T1	200713-P-S-M	08/05/88	2	13474
CEP-60-T3	101043-P-S-M	08/05/88	2	13475
CEP-60-T2	101042-P-S-M	08/05/88	2	13476
CEP-388-T1	101046-P-S-M	08/05/88	2	13482
CEP-107-T2	101038-P-S-M	08/05/88	2	13483
CEP-PIER 21-T1	200729-P-S-M	08/05/88	2	13490
CEP-PIER 21-S2	200731-P-S-M	08/05/88	2	13492
CEP-PIER 21-S5	200736-P-S-M	08/05/88	2	13496
CEP-TF-T1	200727-P-S-M	08/05/88	2	13497
CEP-PIER 21-S3	200733-P-S-M	08/05/88	2	13498
HEW-12-T1	101005-P-S-M	08/04/88	2	13332
CEP-PIER 21-T4	200740-P-S-M	08/05/88	2	13499
CEP-PIER 21-S4	200734-P-S-M	08/05/88	2	13500
CEP-PIER 21-T2	200732-P-S-M	08/05/88	2	13501
CEP-PIER 21-S8	200742-P-S-M	08/05/88	2	13502
CEP-PIER 21-S1	200730-P-S-M	08/05/88	2	13506
CEP-166-T1	200728-P-S-M	08/05/88	2	13507
CEP-PIER 21-T3	200735-P-S-M	08/05/88	2	13508
CEP-PIER 21-T1	200729-P-S-M	08/05/88	2	13509
CEP-PIER 21-S7	200741-P-S-M	08/05/88	2	13510
CEP-PIER 21-T3	200735-P-S-M	08/05/88	2	13512
CEP-PIER 21-S6	200737-P-S-M	08/05/88	2	13513
FRP-46-T1	101093-P-S-M	08/05/88	2	13514
CEP-PIER 21-T2	200732-P-S-M	08/05/88	2	13515
CEP-PIER 21-T4	200740-P-S-M	08/05/88	2	13516
HEW-52-T1	101079-P-S-M	08/05/88	2	13521
CEP-RT-T1	101090-P-S-M	08/05/88	2	13523
FRP-46-CB1	101094-P-S-M	08/05/88	2	13526
CEP-397-T1	101074-P-S-M	08/05/88	2	13532

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-8-T6	101083-P-S-M	08/05/88	2	13534
CEP-161-T4	101072-P-S-M	08/05/88	2	13536
CEP-161-T1	101087-P-S-M	08/05/88	2	13538
CEP-168-T3	101086-P-S-M	08/05/88	2	13539
HEW-49-T1	101077-P-S-M	08/05/88	2	13540
CEP-161-T2	101088-P-S-M	08/05/88	2	13542
CEP-168-T2	101085-P-S-M	08/05/88	2	13543
CEP-168-T1	101084-P-S-M	08/05/88	2	13544
CEP-161-T3	101089-P-S-M	08/05/88	2	13555
HEW-53-T1	101080-P-S-M	08/06/88	2	13562
CI-279-CB1	200778-P-S-M	08/06/88	2	13586
CI-280-CB1	200779-P-S-M	08/06/88	2	13602
FRP-64-T3	101105-P-S-M	08/09/88	2	13623
FRP-41-T1	101102-P-S-M	08/09/88	2	13624
FRP-64-T1	101103-P-S-M	08/09/88	2	13627
FRP-64-T2	101104-P-S-M	08/09/88	2	13824
FRP-14-T1	101101-P-S-M	08/09/88	2	13825
FRP-84-T1	101110-P-S-M	08/09/88	2	13826
FRP-42-CB1	101099-P-S-M	08/09/88	2	13827
HEW-39-T1	101011-P-S-M	08/09/88	2	13838
CA-99-T2	101195-P-S-M	08/09/88	2	13846
CA-226-T1	101190-P-S-M	08/09/88	2	13656
CA-11-T3	101200-P-S-M	08/09/88	2	13659
CA-12-T3	101203-P-S-M	08/09/88	2	13661
FRP-12A-T1	101177-P-S-M	08/09/88	2	13662
FRP-12A-T2	101178-P-S-M	08/09/88	2	13664
CA-232-T1	101193-P-S-M	08/09/88	2	13669
CA-14-T2	101208-P-S-M	08/09/88	2	13676
CA-226-T2	101191-P-S-M	08/09/88	2	13678
CA-12-T1	101201-P-S-M	08/09/88	2	13679
CA-13-T1	101211-P-S-M	08/09/88	2	13680
CA-11-T2	101199-P-S-M	08/09/88	2	13681
CA-12-T2	101202-P-S-M	08/09/88	2	13686
CA-14-T3	101209-P-S-M	08/09/88	2	13687
CA-99-T3	101196-P-S-M	08/09/88	2	13688
CA-495-T3	101206-P-S-M	08/09/88	2	13689
CA-11-T1	101198-P-S-M	08/09/88	2	13690
CA-99-T1	101194-P-S-M	08/09/99	2	13691
CA-14-T1	101207-P-S-M	08/09/88	2	13697
CA-118-T1	101226-P-S-M	08/09/88	2	13698

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CA-495-T2	101205-P-S-M	08/09/88	2	13699
CA-136-T3	101234-P-S-M	08/09/88	2	13700
CA-13-T2	101212-P-S-M	08/09/88	2	13701
CA-128-T1	101229-P-S-M	08/09/88	2	13702
CA-128-T3	101231-P-S-M	08/09/88	2	13704
CA-65-T1	101221-P-S-M	08/09/88	2	13705
CA-136-T2	101233-P-S-M	08/09/88	2	13706
CA-243-T1	101220-P-S-M	08/09/88	2	13707
CA-118-T2	101227-P-S-M	08/09/88	2	13708
CA-65-T2	101222-P-S-M	08/09/88	2	13709
CA-13-T3	101213-P-S-M	08/09/88	2	13713
CA-M70-T1	101225-P-S-M	08/09/88	2	13714
CA-495-T1	101204-P-S-M	08/09/88	2	13717
CA-118-T3	101228-P-S-M	08/09/88	2	13718
CA-128-T2	101230-P-S-M	08/09/88	2	13719
CA-HELO-PAD-T1	100928-P-S-M	08/09/88	2	13721
CA-65-T3	101223-P-S-M	08/09/88	2	13723
CEP-PIER 23-S5	200785-P-S-M	08/09/88	2	13750
CA-7-T1	200788-P-S-M	08/09/88	2	13752
A-81-S1	100204-P-S-C	06/01/88	2	11025
A-81-S1	100204-P-S-L	06/01/88	2	11026
A-81-S1	100204-P-S-R	05/16/88	2	11028
A-104-T2	100209-P-S-HVTC	05/16/88	2	10714
A-104-T3	100211-P-S-M	05/16/88	2	10712
A-104-T4	100212-P-S-M	05/16/88	2	10711
A-104-T5	100213-P-S-M	05/16/88	2	10710
A-104-CB1	100214-P-S-OCB	05/16/88	2	10713
A-104-CB3	100216-P-S-OCB	01/24/89	2	14616
A-104-CB4	100217-P-S-OCB	05/16/88	2	10708
CEP-96-CB3	100268-P-S-CB-B-4	05/05/88	2	10569
CEP-96-CB3	100268-P-S-CB-B-5	05/05/88	2	10575
CEP-96-CB2	100267-P-S-CB-B-6	05/05/88	2	10553
CEP-333-T1	100929-P-S-M	09/16/88	2	14141
CEP-333-T2	101421-P-S-M	09/16/88	2	14142
CEP-333-T3	101422-P-S-M	09/16/88	2	14139
CEP-204-T1	101423-P-S-M	09/16/88	2	14130
CEP-204-T2	101424-P-S-M	09/16/88	2	14140
CEP-204-T3	101425-P-S-M	09/16/88	2	14138
LP-9-T1	101426-P-S-M	09/16/88	2	14164
LP-9-T2	101427-P-S-M	09/13/88	2	14642

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-9-T3	101428-P-S-M	09/19/88	2	14170
LP-10-T2	101430-P-S-M	09/13/88	2	14647
LP-10-T3	101431-P-S-M	09/16/88	2	14151
LP-204-T1	101432-P-S-M	09/13/88	2	14640
LP-203-T1	101433-P-S-M	09/13/88	2	14656
LP-203-T2	101434-P-S-M	09/19/88	2	14172
LP-203-T3	101435-P-S-M	09/19/88	2	14173
F-13-T1	101439-P-S-M	09/16/88	2	14155
F-13-T2	101440-P-S-M	09/19/88	2	14175
F-13-T3	101441-P-S-M	09/16/88	2	14152
F-6-T1	101442-P-S-M	09/19/88	2	14167
F-6-T2	101443-P-S-M	09/16/88	2	14150
F-6-T3	101444-P-S-M	09/19/88	2	14171
F-17-T1	101445-P-S-M	09/13/88	2	14645
LP-20-T2	200318-P-S-TH	09/19/88	2	14177
LP-23-S3	200325-P-S-M	07/22/88	2	12806
LP-121-S1	200339-P-S-SW-R	09/19/88	2	14194
CEP-PIER 24-S2	200397-P-S-M	07/26/88	2	12917
CEP-PIER 25-V1-T1	200455-P-S-TH	09/16/88	2	14213
CEP-PIER 23-T5	200784-P-S-TH	08/06/88	2	13576
CEP-PIER 23-T6	200786-P-S-M	08/06/88	2	13597
CEP-PIER 23-T6	200786-P-S-TH	08/06/88	2	13585
A-81-CB1	200787-P-S-M	08/06/88	2	13571
CA-7-T3	200790-P-S-M	08/06/88	2	13604
LP-205-T1	200791-P-S-M	09/16/88	2	14525
CEP-PIER 21-SS	200804-P-S-M	09/12/88	2	14584
CEP-PIER 21-TS	200806-P-S-M	09/12/88	2	14559
CEP-PIER 21-TN	200807-P-S-M	09/12/88	2	14583
LP-18-CB1	200815-P-S-M	09/12/88	2	14591
LP-209-SA1	200816-P-S-M	09/12/88	2	14585
LP-209-SB1	200817-P-S-M	09/12/88	2	14588
LP-209-MC1	200818-P-S-M	09/12/88	2	14590
LP-209-S1	200823-P-S-SW-C	09/13/88	2	14649
LP-209-S1	200823-P-S-SW-L	09/13/88	2	14666
LP-209-S1	200823-P-S-SW-R	09/13/88	2	14650
LP-209-S2	200824-P-S-SW-M	09/13/88	2	14673
LP-209-T1	200825-P-S-M	09/13/88	2	14658
LP-209-T2	200826-P-S-M	09/13/88	2	14670
LP-209-S3	200827-P-S-M	09/13/88	2	14661
LP-209-T3	200828-P-S-M	09/13/88	2	14669

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-209-S4	200829-P-S-M	09/13/88	2	14672
LP-209-T4	200830-P-S-M	09/13/88	2	14665
LP-209-S5	200831-P-S-M	09/13/88	2	14676
LP-209-S6	200832-P-S-M	09/13/88	2	14677
LP-209-T5	200833-P-S-M	09/13/88	2	14679
LP-209-S7	200835-P-S-M	09/13/88	2	14660
DEP-1-T1	200846-P-S-M	09/16/88	2	14103
DEP-1-T2	200847-P-S-M	09/16/88	2	14118
CD-PS-T1	200848-P-S-M	09/16/88	2	14112
L-38-T1	200854-P-S-M	09/16/88	2	14132
L-38-T2	200855-P-S-M	09/16/88	2	14124
L-38-T3	200856-P-S-M	09/16/88	2	14123
LP-1-T1	200864-P-S-M	09/16/88	2	14160
LP-1-T10	200865-P-S-M	09/16/88	2	14165
LP-1-T11	200866-P-S-M	09/16/88	2	14163
LP-1-T8	200867-P-S-M	09/16/88	2	14153
LP-1-T9	200868-P-S-M	09/16/88	2	14162
LP-1-T13	200869-P-S-M	09/16/88	2	14156
LP-13-T10	200873-P-S-M	09/13/88	2	14644
LP-22-CB1	200876-P-S-M	09/16/88	2	14148
LP-22-CB2	200877-P-S-M	09/16/88	2	14137
LP-22-CB3	200878-P-S-M	09/16/88	2	14143
LP-22-CB4	200879-P-S-M	09/16/88	2	14136
LP-22-CB5	200880-P-S-M	09/16/88	2	14146
LP-22-CB6	200881-P-S-M	09/16/88	2	14134
LP-22-CB7	200882-P-S-M	09/16/88	2	14147
LP-22-CB8	200883-P-S-M	09/16/88	2	14133
LP-22-CB9	200884-P-S-M	09/16/88	2	14135
LP-1-S2	200885-P-S-M	09/19/88	2	14176
LP-5-T3	200886-P-S-M	09/19/88	2	14185
LP-5-T4	200887-P-S-M	09/19/88	2	14183
LP-5-T5	200888-P-S-M	09/19/88	2	14184
CEP-PIER 23-S6	200895-P-S-M	09/16/88	2	14220
CEP-PIER 23-S4	200896-P-S-M	09/16/88	2	14202
CEP-PIER 23-S3	200897-P-S-M	09/16/88	2	14207
LP-209-T10	200898-P-S-M	09/16/88	2	14218
B-26-T1	200902-P-S-M	09/16/88	2	14200
CI-336-CB2	200905-P-S-M	09/16/88	2	14217
CI-336-CB1	200906-P-S-M	09/16/88	2	14222
CI-22-MC1-A	200907-P-S-M	09/16/88	2	14209

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CI-22-MC1-B	200908-P-S-M	09/16/88	2	14204
CI-22-MC2-A	200909-P-S-M	09/16/88	2	14208
CI-22-MC2-B	200910-P-S-M	09/16/88	2	14214
CI-GA-MC1	200911-P-S-M	09/16/88	2	14205
CI-GA-MC2	200912-P-S-M	09/16/88	2	14216
CI-96-MC1	200913-P-S-M	09/16/88	2	14211
CI-96-MC2	200914-P-S-M	09/16/88	2	14215
CI-GC-MC1	200915-P-S-M	09/16/88	2	14203
CI-GC-MC2	200916-P-S-M	09/16/88	2	14212
CI-125-MC1	200917-P-S-M	09/16/88	2	14206
CI-124-MC1	200918-P-S-M	09/16/88	2	14225
CI-126-MC1	200919-P-S-M	09/16/88	2	14201
CI-123-MC1	200920-P-S-M	09/16/88	2	14219
CI-128-MC1	200921-P-S-M	09/16/88	2	14223
CI-127-MC1	200922-P-S-M	09/16/88	2	14210
LP-1-S1	100805-P-S-SW-L	08/02/88	2	15139
LP-5-T1	100809-P-S-M	08/02/88	2	15140
CA-1151-T1	100698-P-S-M	07/26/88	2	14911
CA-64313-T1	100709-P-S-M	07/26/88	2	14912
CA-226-T3	101192-P-S-M	08/09/88	2	14916
HEW-4-T1	101004-P-S-M	08/04/88	2	13408
FRP-12A-T3	101179-P-S-M	08/09/88	2	13665
CI-PPS-T1	200515-P-S-MAIN	/ /	2	13278
LP-209-S8	200926-P-S-MAIN	09/13/88	2	14228
A-104-CB1	100214-P-S-CBB-1	12/13/88	2	16001
A-104-CB1	100214-P-S-CBB-2	12/13/88	2	15967
A-104-CB1	100214-P-S-CBB-3	12/13/88	2	15975
A-104-CB1	100214-P-S-CBB-4	12/14/88	2	16138
A-104-CB1	100214-P-S-CBB-5	12/13/88	2	15971
A-104-CB1	100214-P-S-CBB-6	12/13/88	2	15982
A-104-CB2	100215-P-S-CBB-1	12/13/88	2	16004
A-104-CB2	100215-P-S-CBB-2	12/13/88	2	15998
A-104-CB2	100215-P-S-CBB-3	12/14/88	2	15910
A-104-CB2	100215-P-S-CBB-4	12/13/88	2	15978
A-104-CB2	100215-P-S-CBB-5	12/13/88	2	15977
A-104-CB2	100215-P-S-CBB-6	12/13/88	2	15968
A-104-CB3	100216-P-S-CBB-1	12/14/88	2	15921
A-104-CB3	100216-P-S-CBB-2	12/14/88	2	15905
A-104-CB3	100216-P-S-CBB-3	12/14/88	2	15906
A-104-CB3	100216-P-S-CBB-4	12/14/88	2	15911

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
A-104-CB3	100216-P-S-CBB-5	12/14/88	2	15913
A-104-CB3	100216-P-S-CBB-6	12/14/88	2	15917
A-104-CB4	100217-P-S-CBB-1	12/13/88	2	15931
A-104-CB4	100217-P-S-CBB-2	12/13/88	2	15923
A-104-CB4	100217-P-S-CBB-3	12/14/88	2	15907
A-104-CB4	100217-P-S-CBB-4	12/14/88	2	15903
A-104-CB4	100217-P-S-CBB-5	12/13/88	2	15935
A-104-CB4	100217-P-S-CBB-6	12/14/88	2	16137
A-104-CB5	100218-P-S-CBB-1	12/14/88	2	15912
A-104-CB5	100218-P-S-CBB-2	12/14/88	2	16133
A-104-CB5	100218-P-S-CBB-3	12/14/88	2	15916
A-104-CB5	100218-P-S-CBB-4	12/14/88	2	15914
A-104-CB5	100218-P-S-CBB-5	12/14/88	2	15922
A-104-CB5	100218-P-S-CBB-6	12/14/88	2	15904
CEP-193-CB1	100280-P-S-CBB-1	12/12/88	2	16007
CEP-193-CB1	100280-P-S-CBB-2	12/12/88	2	16035
CEP-193-CB1	100280-P-S-CBB-3	12/12/88	2	16011
CEP-193-CB1	100280-P-S-CBB-4	12/12/88	2	16006
CEP-193-CB1	100280-P-S-CBB-5	12/12/88	2	16008
CEP-193-CB2	100281-P-S-CBB-1	12/15/88	2	16055
CEP-193-CB2	100281-P-S-CBB-2	12/15/88	2	16076
CEP-193-CB2	100281-P-S-CBB-3	12/15/88	2	16047
CEP-193-CB2	100281-P-S-CBB-4	12/15/88	2	16057
CEP-193-CB2	100281-P-S-CBB-5	12/15/88	2	16059
CEP-193-CB2	100281-P-S-CBB-6	12/15/88	2	16051
CEP-193-CB3	100282-P-S-CBB-1	12/14/88	2	16148
CEP-193-CB3	100282-P-S-CBB-2	12/14/88	2	16144
CEP-193-CB3	100282-P-S-CBB-3	12/14/88	2	16123
CEP-193-CB3	100282-P-S-CBB-4	12/14/88	2	16153
CEP-193-CB3	100282-P-S-CBB-5	12/14/88	2	16147
CEP-193-CB3	100282-P-S-CBB-6	12/14/88	2	16142
CEP-193-CB4	100283-P-S-CBB-1	12/15/88	2	16058
CEP-193-CB4	100283-P-S-CBB-2	12/15/88	2	16046
CEP-193-CB4	100283-P-S-CBB-3	12/15/88	2	16054
CEP-193-CB4	100283-P-S-CBB-4	12/15/88	2	16077
CEP-193-CB4	100283-P-S-CBB-5	12/15/88	2	16080
CEP-193-CB4	100283-P-S-CBB-6	12/15/88	2	16078
CEP-193-CB6	100285-P-S-CBB-1	12/14/88	2	16128
CEP-193-CB6	100285-P-S-CBB-2	12/14/88	2	16130
CEP-193-CB6	100285-P-S-CBB-3	12/14/88	2	16149

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-193-CB6	100285-P-S-CBB-4	12/14/88	2	16150
CEP-193-CB6	100285-P-S-CBB-5	12/14/88	2	16146
CEP-193-CB6	100285-P-S-CBB-6	12/14/88	2	16143
CEP-193-CB7	100286-P-S-CBB-1	12/14/88	2	16124
CEP-193-CB7	100286-P-S-CBB-2	12/14/88	2	16145
CEP-193-CB7	100286-P-S-CBB-3	12/14/88	2	16131
CEP-193-CB7	100286-P-S-CBB-4	12/14/88	2	16127
CEP-193-CB7	100286-P-S-CBB-5	12/14/88	2	16152
CEP-193-CB7	100286-P-S-CBB-6	12/14/88	2	16129
CEP-193-CB1	100280-P-S-CBB-6	12/12/88	2	16045
CA-CENT-SUB-T1	100725-P-S-TB-A	12/13/88	2	15932
CA-CENT-SUB-T1	100725-P-S-TB-B	12/13/88	2	15937
CA-CENT-SUB-T1	100725-P-S-TB-C	12/13/88	2	15930
CA-CENT-SUB-T2	100726-P-S-TB-A	12/12/88	2	15992
CA-CENT-SUB-T2	100726-P-S-TB-B	12/12/88	2	16022
CA-CENT-SUB-T2	100726-P-S-TB-C	12/12/88	2	15990
CA-CENT-SUB-CB1	100727-P-S-CBB-1	12/12/88	2	16017
CA-CENT-SUB-CB1	100727-P-S-CBB-2	12/12/88	2	15988
CA-CENT-SUB-CB1	100727-P-S-CBB-3	12/12/88	2	15996
CA-CENT-SUB-CB1	100727-P-S-CBB-4	12/12/88	2	15991
CA-CENT-SUB-CB1	100727-P-S-CBB-5	12/12/88	2	16026
CA-CENT-SUB-CB1	100727-P-S-CBB-6	12/12/88	2	16019
CA-CENT-SUB-CB2	100728-P-S-CBB-1	12/12/88	2	16021
CA-CENT-SUB-CB2	100728-P-S-CBB-2	12/12/88	2	15994
CA-CENT-SUB-CB2	100728-P-S-CBB-3	12/12/88	2	16012
CA-CENT-SUB-CB2	100728-P-S-CBB-4	12/12/88	2	16020
CA-CENT-SUB-CB2	100728-P-S-CBB-5	12/12/88	2	16015
CA-CENT-SUB-CB2	100728-P-S-CBB-6	12/12/88	2	16023
CA-CENT-SUB-CB3	100729-P-S-CBB-1	12/13/88	2	15936
CA-CENT-SUB-CB3	100729-P-S-CBB-3	12/13/88	2	15938
CA-CENT-SUB-CB3	100729-P-S-CBB-4	12/13/88	2	15939
CA-CENT-SUB-CB3	100729-P-S-CBB-5	12/14/88	2	16140
CA-CENT-SUB-CB3	100729-P-S-CBB-2	12/13/88	2	15942
CA-CENT-SUB-CB3	100729-P-S-CBB-6	12/13/88	2	15940
CA-CENT-SUB-CB4	100730-P-S-CBB-1	12/13/88	2	15928
CA-CENT-SUB-CB4	100730-P-S-CBB-2	12/13/88	2	15934
CA-CENT-SUB-CB4	100730-P-S-CBB-3	12/13/88	2	15944
CA-CENT-SUB-CB4	100730-P-S-CBB-4	12/13/88	2	15941
CA-CENT-SUB-CB4	100730-P-S-CBB-5	12/13/88	2	15929
CA-CENT-SUB-CB4	100730-P-S-CBB-6	12/13/88	2	15943

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-6-CB1	101479-P-S-M	12/16/88	2	16112
CEP-6-CB2	101480-P-S-M	12/16/88	2	16104
A-104-T6	101512-P-S-M	12/14/88	2	15908
CEP-193-T1	101513-P-S-M	12/14/88	2	16151
CEP-193-T2	101514-P-S-M	12/14/88	2	16122
CEP-193-T3	101515-P-S-M	12/14/88	2	16125
CEP-193-T4	101516-P-S-M	12/14/88	2	16126
CA-CENT-SUB-PT-N	101526-P-S-M	12/12/88	2	15987
CA-CENT-SUB-PT-1	101527-P-S-M	12/12/88	2	15985
CA-CENT-SUB-PT-S	101528-P-S-M	12/12/88	2	15993
CA-CENT-SUB-PTB-R	101529-P-S-M	12/12/88	2	15997
CA-CENT-SUB-PTB-C	101530-P-S-M	12/12/88	2	15989
CA-CENT-SUB-PTB-L	101531-P-S-M	12/12/88	2	15986
CA-CENT-SUB-T3	101532-P-S-M	12/12/88	2	16014
CA-CENT-SUB-PT-2	101533-P-S-M	12/15/88	2	16094
DEP-20-CB1	101534-P-S-CB-A	12/14/88	2	16132
DEP-20-CB1	101534-P-S-CB-C	12/14/88	2	16135
LAG-42-T1	101554-P-S-M	12/13/88	2	15926
LP-26A-T1	101576-P-S-M	12/15/88	2	15897
CEP-166X-T1	101577-P-S-M	12/15/88	2	15899
CA-234-CB1	200640-P-S-CBB-1	12/12/88	2	16024
CA-234-CB1	200640-P-S-CBB-2	12/12/88	2	16018
CA-234-CB1	200640-P-S-CBB-3	12/12/88	2	15995
CA-234-CB1	200640-P-S-CBB-4	12/12/88	2	16013
CA-234-CB1	200640-P-S-CBB-5	12/12/88	2	16016
CA-234-CB1	200640-P-S-CBB-6	12/12/88	2	16025
CA-234-CB2	200641-P-S-CBB-1	12/12/88	2	16041
CA-234-CB2	200641-P-S-CBB-2	12/12/88	2	16027
CA-234-CB2	200641-P-S-CBB-3	12/12/88	2	16028
CA-234-CB2	200641-P-S-CBB-4	12/12/88	2	16029
CA-234-CB2	200641-P-S-CBB-5	12/12/88	2	16030
CA-234-CB2	200641-P-S-CBB-6	12/12/88	2	16032
Q-6-T3	100024-P-S-MAIN	05/02/88	2	10249
Q-21-T4	100004-P-S-MAIN	05/02/88	2	10386
Q-6-T6	100026-P-S-MAIN	05/02/88	2	10387
Q-75-T1	100038-P-S-MAIN	05/02/88	2	10401
Q-84-T3	100044-P-S-MAIN	05/02/88	2	10354
Q-95-T1	100035-P-S-MAIN	05/02/88	2	10355
Q-14-CB2	100030-P-S-OCB-MAIN	05/02/88	2	10356
Q-14-T2	100027-P-S-MAIN	05/02/88	2	10357

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Q-84-T5	100046-P-S-MAIN	05/02/88	2	10360
Q-21-T2	100002-P-S-MAIN	05/02/88	2	10388
Q-21-T3	100003-P-S-MAIN	05/02/88	2	10398
Q-14-T3	100028-P-S-MAIN	05/02/88	2	10396
Q-14-T1	100034-P-S-MAIN	04/04/88	2	10496
Q-14-S2	100032-P-S-S	04/04/88	2	10497
Q-84-T1	100042-P-S-MAIN	04/04/88	2	10498
Q-21-S4	100005-P-S-SW	04/04/88	2	10499
Q-21-S6	100012-P-S-SW	04/04/88	2	10501
Q-21-S7	100013-P-S-SW	04/04/88	2	10502
Q-21-T1	100001-P-S-MAIN	04/04/88	2	10505
Q-21-T7	100014-P-S-MAIN	04/04/88	2	10506
Q-21-S8	100011-P-S-SW	04/27/88	2	10510
Q-84-T2	100043-P-S-MAIN	04/28/88	2	10528
Q-21-S1	100010-P-S-SW	04/28/88	2	10541
Q-21-S9	100007-P-S-SW	04/28/88	2	10542
Q-6-T4	100025-P-S-MAIN	04/28/88	2	10543
Q-14-S3	100033-P-S-SW	04/28/88	2	10544
Q-6-T2	100023-P-S-MAIN	04/28/88	2	10546
Q-84-S1	100041-P-S-CENTER	04/27/88	2	10509
Q-6-S3	100021-P-S-LEFT	04/27/88	2	10521
Q-14-S1	100031-P-S-SW	04/28/88	2	10530
Q-14-CB1	100029-P-S-OCB	04/28/88	2	10532
Q-6-S3	100021-P-S-CENTER	04/28/88	2	10538
Q-6-S3	100021-P-S-RIGHT	04/28/88	2	10540
N-26-S1	200086-P-S-SW-R	06/30/88	2	11660
N-26-S1	200086-P-S-SW-L	06/30/88	2	11666
N-106-S1	200084-P-S-SW	06/30/88	2	11675
Q-73-T1	100731-P-S-M	07/15/88	2	12363
SC-72.5-T1	100832-P-S-M	07/15/88	2	11973
SC-74.5-T1	100833-P-S-M	07/15/88	2	11974
SC-76-T1	100834-P-S-M	07/15/88	2	11975
SC-7-T1	100835-P-S-M	07/15/88	2	11976
SC-3.5-T1	100836-P-S-M	07/15/88	2	11977
SC-1.5-T1	100837-P-S-M	07/15/88	2	11978
SC-15-T1	100838-P-S-M	07/15/88	2	11979
SC-14-T5	100839-P-S-M	07/15/88	2	11980
SC-13-T1	100840-P-S-M	07/15/88	2	11981
SC-9-T1	100843-P-S-M	07/15/88	2	11982
SC-11-T1	100844-P-S-M	07/15/88	2	11983

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SC-12-T1	100845-P-S-M	07/15/88	2	11984
SC-14-T4	100846-P-S-M	07/15/88	2	11985
SC-17A-T1	100847-P-S-M	07/15/88	2	11986
SC-28-T1	100848-P-S-M	07/15/88	2	11987
SC-21-T1	100849-P-S-M	07/15/88	2	11988
SC-29-T1	100850-P-S-M	07/15/88	2	11989
SC-28-T2	100851-P-S-M	07/15/88	2	11990
SC-27-T1	100852-P-S-M	07/15/88	2	11991
SC-26-T1	100853-P-S-M	07/15/88	2	11992
SC-20-T1	100894-P-S-M	07/15/88	2	11997
SC-23-T2	100895-P-S-M	07/15/88	2	11998
SC-24-T1	100896-P-S-M	07/15/88	2	11996
SC-21-T2	100897-P-S-M	07/15/88	2	11999
SC-23-T1	100898-P-S-M	07/15/88	2	12000
SC-24-T2	100899-P-S-M	07/15/88	2	12001
SC-25-T1	100900-P-S-M	07/15/88	2	12002
SC-BF-CB1	100902-P-S-M	07/15/88	2	12003
SC-BF-CB2	100903-P-S-M	07/15/88	2	12004
SC-BF-T2	100904-P-S-M	07/15/88	2	12005
SDA-218-T1	100930-P-S-M	07/15/88	2	12018
SDA-218-T2	100931-P-S-M	07/15/88	2	12019
SDA-218-T3	100932-P-S-M	07/15/88	2	12020
SDA-309-T1	100933-P-S-M	07/15/88	2	12021
SDA-309-T2	100934-P-S-M	07/19/88	2	12022
SDA-309-T3	100935-P-S-M	07/19/88	2	12023
SDA-213-T2	100937-P-S-M	07/19/88	2	12025
SDA-82-T1	100944-P-S-M	07/19/88	2	12028
SDA-84.5-T1	100949-P-S-M	07/19/88	2	12031
SDA-84.5-T2	100950-P-S-M	07/19/88	2	12032
SDA-84.5-T3	100951-P-S-M	07/19/88	2	12033
NH-34-T1	200581-P-S-M	07/19/88	2	12383
NH-34-T2	200582-P-S-M	07/19/88	2	12384
NH-34-T3	200583-P-S-M	07/19/88	2	12385
NH-10-S2	100441-P-S-SW-R	07/23/88	2	12562
NH-10-S2	100441-P-S-SW-L	07/23/88	2	12566
Q-72-T1	100443-P-S-M	07/23/88	2	12569
NH-10-S2	100441-P-S-SW-C	07/23/88	2	12580
SP-72-CB3	100474-P-S-CB-M	07/23/88	2	12591
SP-72-S7	100477-P-S-SW-M	07/23/88	2	12592
SP-72-CB6	100476-P-S-CB-M	07/23/88	2	12593

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-72-CB2	100473-P-S-M	07/23/88	2	12594
SP-72-CB5	100475-P-S-CB-M	07/23/88	2	12595
P-1-T6	100642-P-S-M	07/25/88	2	12639
P-1-S1	100646-P-S-SW-M	07/25/88	2	12641
P-1-T7	100643-P-S-M	07/25/88	2	12642
P-1-T5	100641-P-S-M	07/25/88	2	12643
NH-200-T6	100365-P-S-M	07/15/88	2	12044
O-218-S1	200078-P-S-SW	07/15/88	2	12047
O-25-T2	200075-P-S-M	07/15/88	2	12049
O-25-T1	200074-P-S-M	07/15/88	2	12050
O-26-T1	200076-P-S-M	07/15/88	2	12055
O-26-S1	200077-P-S-SW	07/15/88	2	12064
M-114-S1	100406-P-S-SW-R	07/15/88	2	12070
R-62-T1	200103-P-S-M	07/15/88	2	12076
M-114-S1	100406-P-S-SW-L	07/15/88	2	12079
R-43-S1	200105-P-S-SW-L	07/15/88	2	12084
P-SPARE-S2	200225-P-S-SW-R	07/15/88	2	12085
P-74-S1	200222-P-S-SW-R	07/15/88	2	12086
NH-152-T1	100397-P-S-M	07/15/88	2	12089
NH-124-T1	100391-P-S-M	07/15/88	2	12090
M-114-S1	100406-P-S-SW-C	07/15/88	2	12091
R-43-S1	200105-P-S-SW-C	07/15/88	2	12093
P-63-T2	200234-P-S-M	07/15/88	2	12094
NH-124-T2	100392-P-S-M	07/15/88	2	12097
M-114-T1	100405-P-S-M	07/15/88	2	12099
NH-154-T1	100396-P-S-M	07/15/88	2	12106
R-61-T1	200102-P-S-M	07/15/88	2	12109
M-110-S2	200099-P-S-SW-R	07/15/88	2	12110
NH-10-T1	100380-P-S-M	07/15/88	2	12111
NH-86-T1	100383-P-S-M	07/15/88	2	12113
NH-11-S2	100378-P-S-SW-R	07/15/88	2	12114
NH-90-S1	100387-P-S-SW-M	07/15/88	2	12119
NH-44-S1	100388-P-S-SW-C	07/15/88	2	12120
NH-44-S1	100388-P-S-SW-R	07/15/88	2	12121
NH-6-S1	100385-P-S-SW-M	07/15/88	2	12123
NH-89-S1	100384-P-S-SW-M	07/15/88	2	12124
NH-11-S3	100379-P-S-SW-C	07/15/88	2	12125
NH-10-S1	100381-P-S-SW-L	07/15/88	2	12126
NH-10-S1	100381-P-S-SW-C	07/15/88	2	12127
NH-11-S2	100378-P-S-SW-C	07/15/88	2	12128

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
NH-23-S1	100389-P-S-SW-L	07/15/88	2	12129
NH-23-S1	100389-P-S-SW-R	07/15/88	2	12130
NH-23-S1	100389-P-S-SW-C	07/15/88	2	12131
NH-11-S3	100379-P-S-SW-L	07/15/88	2	12132
NH-200-T5	100364-P-S-M	07/15/88	2	12133
NH-200-T4	100363-P-S-M	07/15/88	2	12136
NH-11-S3	100379-P-S-SW-R	07/15/88	2	12138
NH-44-S1	100388-P-S-SW-L	07/15/88	2	12142
NH-200-T3	100360-P-S-M	07/15/88	2	12148
NH-91-S1	100369-P-S-SW-M	07/15/88	2	12149
M-110-S2	200099-P-S-SW-L	07/15/88	2	12178
N-19A-S1	200096-P-S-SW-R	07/15/88	2	12179
N-29-S1	200092-P-S-SW-C	07/15/88	2	12183
P-72-T1	200226-P-S-MAIN	07/15/88	2	12184
N-19B-T2	200095-P-S-MAIN	07/15/88	2	12186
M-30-T1	200124-P-S-MAIN	07/15/88	2	12200
SDA-323-T1	200126-P-S-MAIN	07/15/88	2	12202
SDA-334-T1	200127-P-S-MAIN	07/15/88	2	12203
R-60-S1	200130-P-S-SW-L	07/15/88	2	12206
R-60-S1	200130-P-S-SW-R	07/15/88	2	12208
P-SPARE-T37	200167-P-S-M	07/15/88	2	12226
P-SPARE-T39	200169-P-S-M	07/15/88	2	12227
NM-37-T2	200166-P-S-M	07/15/88	2	12228
P-SPARE-T44	200174-P-S-M	07/15/88	2	12229
P-SPARE-T41	200171-P-S-M	07/15/88	2	12231
P-SPARE-T42	200172-P-S-M	07/15/88	2	12232
P-SPARE-T43	200173-P-S-M	07/15/88	2	12233
P-SPARE-T25	200155-P-S-M	07/15/88	2	12236
P-SPARE-T22	200152-P-S-M	07/15/88	2	12237
P-SPARE-T27	200157-P-S-M	07/15/88	2	12238
P-SPARE-T34	200164-P-S-M	07/15/88	2	12239
P-SPARE-T28	200158-P-S-M	07/15/88	2	12240
NM-37-T3	200165-P-S-M	07/15/88	2	12241
P-SPARE-T29	200159-P-S-M	07/15/88	2	12242
P-SPARE-T38	200168-P-S-M	07/15/88	2	12244
P-SPARE-T33	200163-P-S-M	07/15/88	2	12245
P-SPARE-T45	200175-P-S-M	07/15/88	2	12246
P-SPARE-T47	200177-P-S-M	07/15/88	2	12247
P-SPARE-T26	200156-P-S-M	07/15/88	2	12248
P-SPARE-T30	200160-P-S-M	07/15/88	2	12249

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
P-SPARE-T21	200151-P-S-M	07/15/88	2	12250
P-SPARE-T24	200154-P-S-M	07/15/88	2	12252
P-SPARE-T20	200150-P-S-M	07/15/88	2	12253
P-SPARE-S2	200225-P-S-SW-L	07/15/88	2	12254
P-SPARE-T23	200153-P-S-M	07/15/88	2	12255
P-SPARE-T1	200131-P-S-M	07/15/88	2	12256
P-SPARE-T15	200145-P-S-M	07/15/88	2	12257
P-SPARE-T46	200176-P-S-M	07/15/88	2	12258
P-SPARE-T14	200144-P-S-M	07/15/88	2	12259
P-SPARE-T11	200141-P-S-M	07/15/88	2	12260
P-SPARE-T48	200178-P-S-M	07/15/88	2	12261
P-SPARE-T16	200146-P-S-M	07/15/88	2	12262
P-SPARE-T50	200180-P-S-M	07/15/88	2	12263
P-SPARE-T17	200147-P-S-M	07/15/88	2	12264
P-SPARE-T18	200148-P-S-M	07/15/88	2	12265
P-SPARE-T2	200132-P-S-M	07/15/88	2	12266
P-SPARE-T13	200143-P-S-M	07/15/88	2	12267
P-SPARE-T8	200138-P-S-M	07/15/88	2	12268
P-SPARE-T49	200179-P-S-M	07/15/88	2	12269
P-SPARE-T6	200136-P-S-M	07/15/88	2	12270
P-SPARE-T12	200142-P-S-M	07/15/88	2	12271
P-SPARE-T10	200140-P-S-M	07/15/88	2	12272
P-SPARE-T9	200139-P-S-M	07/15/88	2	12273
P-SPARE-T3	200133-P-S-M	07/15/88	2	12274
P-SPARE-T7	200137-P-S-M	07/15/88	2	12275
P-SPARE-T58	200188-P-S-M	07/15/88	2	12276
P-SPARE-T59	200189-P-S-M	07/15/88	2	12278
P-SPARE-T56	200186-P-S-M	07/15/88	2	12280
P-SPARE-T54	200184-P-S-M	07/15/88	2	12281
P-SPARE-T52	200182-P-S-M	07/15/88	2	12282
P-SPARE-T5	200135-P-S-M	07/15/88	2	12283
P-SPARE-T19	200149-P-S-M	07/15/88	2	12284
P-SPARE-T51	200181-P-S-M	07/15/88	2	12288
P-SPARE-T57	200187-P-S-M	07/15/88	2	12289
P-SPARE-T55	200185-P-S-M	07/15/88	2	12291
P-SPARE-T53	200183-P-S-M	07/15/88	2	12294
P-SPARE-T78	200208-P-S-M	07/15/88	2	12296
P-SPARE-T89	200219-P-S-M	07/15/88	2	12297
M-6-T1	200194-P-S-M	07/15/88	2	12299
P-SPARE-T82	200212-P-S-M	07/15/88	2	12300

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
P-SPARE-T60	200190-P-S-M	07/15/88	2	12301
P-SPARE-T80	200210-P-S-M	07/15/88	2	12303
P-SPARE-T87	200217-P-S-M	07/15/88	2	12304
P-SPARE-T66	200196-P-S-M	07/15/88	2	12305
P-SPARE-T65	200195-P-S-M	07/15/88	2	12306
P-SPARE-T83	200213-P-S-M	07/15/88	2	12308
P-SPARE-T76	200206-P-S-M	07/15/88	2	12309
P-SPARE-T71	200201-P-S-M	07/15/88	2	12310
P-SPARE-T67	200197-P-S-M	07/15/88	2	12311
P-SPARE-T79	200209-P-S-M	02/09/58	2	12312
P-SPARE-T68	200198-P-S-M	07/15/88	2	12313
P-SPARE-T73	200203-P-S-M	02/09/58	2	12314
P-SPARE-T72	200202-P-S-M	07/15/88	2	12316
P-SPARE-T70	200200-P-S-M	07/15/88	2	12317
P-SPARE-T81	200211-P-S-M	07/15/88	2	12318
P-SPARE-T69	200199-P-S-M	07/15/88	2	12319
P-63-S1	200236-P-S-SW-C	07/15/88	2	12321
P-63-S1	200236-P-S-SW-L	07/15/88	2	12322
P-63-S1	200236-P-S-SW-R	07/15/88	2	12323
P-74-S1	200222-P-S-SW-L	07/15/88	2	12324
P-63-T1	200233-P-S-M	07/15/88	2	12325
P-4-S1	200232-P-S-SW-R	07/15/88	2	12328
P-SPARE-S2	200225-P-S-SW-C	07/15/88	2	12330
P-SPARE-S1	200224-P-S-SW-L	07/15/88	2	12331
P-SPARE-S1	200224-P-S-SW-R	07/15/88	2	12333
P-63-T3	200235-P-S-M	07/15/88	2	12334
P-1-CB6	100628-P-S-CB-M	07/25/88	2	12647
Q-14-CB2	100030-P-S-CBB-1	07/25/88	2	12703
Q-14-CB2	100030-P-S-CBB-5	07/25/88	2	12708
Q-14-T2	100027-P-S-TB-2	07/25/88	2	12709
Q-14-T2	100027-P-S-TB-1	07/25/88	2	12710
Q-14-T2	100027-P-S-TB-3	07/25/88	2	12712
Q-14-CB2	100030-P-S-CBB-3	07/25/88	2	12714
Q-14-CB1	100029-P-S-CBB-4	07/25/88	2	12719
Q-14-CB2	100030-P-S-CBB-4	07/25/88	2	12725
Q-14-CB2	100030-P-S-CBB-6	07/25/88	2	12726
Q-14-CB1	100029-P-S-CBB-6	07/25/88	2	12727
Q-14-CB1	100029-P-S-CBB-2	07/25/88	2	12730
Q-14-CB1	100029-P-S-CBB-3	07/25/88	2	12731
Q-14-CB1	100029-P-S-CBB-5	07/25/88	2	12732

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Q-14-T3	100028-P-S-TB-1	07/25/88	2	12733
Q-55-T2	100568-P-S-M	07/25/88	2	12734
Q-14-CB1	100029-P-S-CBB-1	07/25/88	2	12735
Q-14-T3	100028-P-S-TB-3	07/25/88	2	12736
Q-14-T3	100028-P-S-TB-2	07/25/88	2	12737
SEW-01-CB1	100559-P-S-CB-R	07/25/88	2	14077
SEW-04-CB1	100566-P-S-C	07/25/88	2	12765
SEW-03-CB1	100565-P-S-C	07/25/88	2	12766
SEW-03-CB1	100565-P-S-CB-R	07/25/88	2	12767
SEW-07-CB1	100563-P-S-M	07/25/88	2	12768
SEW-08-CB1	100564-P-S-M	07/25/88	2	12771
SEW-05-CB1	100561-P-S-M	07/25/88	2	12772
SEW-04-CB1	100566-P-S-CB-L	07/25/88	2	12773
SEW-04-CB1	100566-P-S-CB-R	07/25/88	2	12774
SP-236-T3	200407-P-S-M	07/21/88	2	12800
SP-236-S1	200408-P-S-SW-L	07/22/88	2	12828
SP-MCD-T1	200403-P-S-M	07/22/88	2	12841
SP-236-T2	200406-P-S-M	07/22/88	2	12844
NH-95-T6	200348-P-S-M	07/22/88	2	12845
SP-312-T1	200401-P-S-M	07/22/88	2	12846
SP-85-A-CB1	200356-P-S-CB-M	07/22/88	2	12851
SP-125-S1	200349-P-S-SW-C	07/22/88	2	12853
SP-125-S1	200349-P-S-SW-L	07/22/88	2	12854
SP-90-CB1	200352-P-S-M	07/22/88	2	12855
SP-125-S1	200349-P-S-SW-R	07/22/88	2	12857
SP-237-T1	200362-P-S-M	07/22/88	2	12860
SP-237-S1	200363-P-S-SW-R	07/22/88	2	12861
SP-280-T1	200364-P-S-M	07/22/88	2	12862
SP-237-S1	200363-P-S-SW-L	07/22/88	2	12863
SP-91-T1	200360-P-S-M	07/22/88	2	12865
SP-91-S1	200361-P-S-M	07/22/88	2	12866
SP-280-T2	200365-P-S-M	07/22/88	2	12867
SP-381-T1	100681-P-S-M	07/22/88	2	12871
SP-381-T3	100680-P-S-M	07/22/88	2	12872
SP-368-T1	100667-P-S-M	07/22/88	2	12874
SP-254-T1	100673-P-S-M	07/22/88	2	12876
SP-366-T1	100678-P-S-M	07/22/88	2	12877
SP-129-S1	100666-P-S-M	07/22/88	2	14076
SP-71-T4	200404-P-S-M	07/26/88	2	12933
SP-29-S2	200419-P-S-SW-M	07/26/88	2	12934

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-1-S1	200409-P-S-M	07/26/88	2	12935
SP-240-S1	200420-P-S-SW-M	07/26/88	2	12936
SP-31-S1	200412-P-S-SW-M	07/26/88	2	12937
SP-240-S2	200421-P-S-SW-M	07/26/88	2	12938
SP-112-S1	200418-P-S-SW-M	07/26/88	2	12940
Q-1-T2	100724-P-S-M	07/27/88	2	12955
SP-88-S1	200451-P-S-SW-C	08/02/88	2	12972
SP-86-S1	200449-P-S-SW-R	08/02/88	2	12973
SP-86-S1	200449-P-S-SW-C	08/02/88	2	12976
SP-346-S1	100867-P-S-SW-R	07/28/88	2	13031
SP-346-S1	100867-P-S-SW-L	07/28/88	2	13035
Q-76-T2	100878-P-S-M	07/28/88	2	13041
Q-76-T1	100877-P-S-M	07/28/88	2	13042
SC-BF-T1	100901-P-S-M	07/28/88	2	13047
N-23-T1	200578-P-S-M	08/04/88	2	13080
P-61-T3	200616-P-S-M	08/02/88	2	13083
SDA-332-T1	200594-P-S-M	08/02/88	2	13157
M-1-T1	200644-P-S-M	08/03/88	2	13168
MCA-88-T1	200637-P-S-M	08/03/88	2	13175
MCA-9-T1	200638-P-S-M	08/03/88	2	13177
NH-159-T1	200626-P-S-LTC	08/03/88	2	13182
NH-159-CB1	200627-P-S-CB-C	08/03/88	2	13184
NH-159-CB4	200630-P-S-CB-M	08/03/88	2	13186
SP-362-T2	200486-P-S-M	08/03/88	2	13187
SP-00-T1	200482-P-S-M	08/03/88	2	13193
SP-311-T1	200484-P-S-M	08/03/88	2	13195
SP-15-CB1	200468-P-S-M	08/03/88	2	13198
SP-93-S1	200476-P-S-SW-R	08/03/88	2	13199
SP-93-T3	200475-P-S-M	08/03/88	2	13200
SP-17-S1	200470-P-S-SW-M	08/03/88	2	13201
SP-93-S1	200476-P-S-SW-C	08/03/88	2	13202
SP-00-S1	200483-P-S-M	08/03/88	2	13205
SP-15-T1	200465-P-S-M	08/03/88	2	13212
SP-93-T1	200473-P-S-M	08/04/88	2	13274
SP-93-T2	200474-P-S-M	08/01/88	2	13216
SP-356-T1	200496-P-S-M	08/02/88	2	13261
P-61-S4	200618-P-S-SW-M	08/04/88	2	13308
P-61-S2	200619-P-S-SW-M	08/04/88	2	13309
P-61-T2	200615-P-S-M	08/04/88	2	13312
NH-159-CB1	200627-P-S-CB-R	08/04/88	2	13314

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
P-61-T1	200614-P-S-M	08/04/88	2	13319
NH-159-T1	200626-P-S-M	08/04/88	2	13320
N-19A-T1	200677-P-S-M	08/04/88	2	13364
R-46-S1	200670-P-S-SW-C	08/04/88	2	13366
SDA-232-T2	200667-P-S-M	08/04/88	2	13369
MCE-1-T1	200669-P-S-M	08/04/88	2	13373
R-46-S1	200670-P-S-SW-L	08/04/88	2	13375
R-46-S1	200670-P-S-SW-R	08/04/88	2	13376
N-19B-T3	200676-P-S-M	08/04/88	2	13378
M-110-T3	100977-P-S-M	08/04/88	2	13380
M-110-T5	100979-P-S-M	08/04/88	2	13392
NM-37-T4	100986-P-S-M	08/04/88	2	13393
P-SPARE-T63	101040-P-S-M	08/05/88	2	13471
SC-411-S1	200726-P-S-SW-R	08/05/88	2	13477
NH-A1-T1	101060-P-S-M	08/05/88	2	13478
SC-411-S1	200726-P-S-SW-L	08/05/88	2	13481
SC-411-S1	200726-P-S-SW-C	08/05/88	2	13487
NH-31-T1	101064-P-S-M	08/05/88	2	13488
NH-200-CB1	200738-P-S-M	08/05/88	2	13491
NH-29-T1	101062-P-S-M	08/05/88	2	13494
NH-207A-CB1	200739-P-S-M	08/05/88	2	13511
NH-201-T3	101070-P-S-M	08/05/88	2	13527
NH-28-T2	101063-P-S-M	08/05/88	2	13528
NH-201-T1	101068-P-S-M	08/05/88	2	13531
NH-201-T2	101069-P-S-M	08/05/88	2	13541
Q-84-S2	200770-P-S-SW-R	08/06/88	2	13575
Q-21-T6	200769-P-S-M	08/06/88	2	13594
Q-84-S2	200770-P-S-SW-C	08/06/88	2	13598
Q-84-S2	200770-P-S-SW-L	08/06/88	2	13600
SC-409-T1	101181-P-S-M	08/06/88	2	13616
SC-BF-T3	101180-P-S-M	08/09/88	2	13626
P-26-CB2	101188-P-S-M	08/09/88	2	13832
NH-229-T1	101061-P-S-M	08/09/88	2	13657
Q-18-T1	101176-P-S-M	08/09/88	2	13663
Q-18-A-T1	101175-P-S-M	08/09/88	2	13668
SP-122-T3	101148-P-S-M	08/09/88	2	13673
SP-71-T3	101142-P-S-M	08/09/88	2	13682
SP-122-T1	101146-P-S-M	08/09/88	2	13683
SP-196-T1	101150-P-S-M	08/09/88	2	13684
SP-122-T2	101147-P-S-M	08/09/88	2	13693

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-71-T1	101140-P-S-M	08/09/88	2	13695
MCA-9-T2	101210-P-S-M	08/09/88	2	13696
MCE-34-T2	101215-P-S-M	08/09/88	2	13703
MCE-29-T2	101218-P-S-M	08/09/88	2	13710
MCE-29-T3	101219-P-S-M	08/09/88	2	13712
SDA-123-T1	101266-P-S-M	08/09/88	2	13715
SDA-123-T2	101267-P-S-M	08/09/88	2	13716
MCE-34-T1	101214-P-S-M	08/09/88	2	13720
MCE-34-T3	101216-P-S-M	08/09/88	2	13722
MCE-29-T1	101217-P-S-M	08/09/88	2	13724
SDA-123-T3	101268-P-S-M	08/09/88	2	13725
SDA-86-T2	101258-P-S-M	08/09/88	2	13727
SDA-92-T1	101263-P-S-M	08/09/88	2	13728
SDA-89-T1	101260-P-S-M	08/09/88	2	13729
SDA-92-T2	101264-P-S-M	08/09/88	2	13730
SDA-86-T1	101257-P-S-M	08/09/88	2	13731
SDA-89-T2	101261-P-S-M	08/09/88	2	13732
SDA-205-T1	101243-P-S-M	08/09/88	2	13733
SDA-210-T1	101249-P-S-M	08/09/88	2	13734
SDA-211-T1	101252-P-S-M	08/09/88	2	13735
SDA-94-T1	101255-P-S-M	08/09/88	2	13736
SDA-86-T3	101259-P-S-M	08/09/88	2	13738
SDA-92-T3	101265-P-S-M	08/09/88	2	13739
SDA-100-T2	101237-P-S-M	08/09/88	2	13741
SDA-211-T2	101253-P-S-M	08/09/88	2	13742
SDA-205-T4	101246-P-S-M	08/09/88	2	13743
SDA-74-T1	101256-P-S-M	08/09/88	2	13744
SDA-211-T3	101254-P-S-M	08/09/88	2	13745
SDA-210-T3	101251-P-S-M	08/09/88	2	13746
SDA-205-T5	101247-P-S-M	08/09/88	2	13747
SDA-205-T3	101245-P-S-M	08/09/88	2	13748
SDA-100-T3	101238-P-S-M	08/09/88	2	13754
SDA-205-T6	101248-P-S-M	08/09/88	2	13756
SDA-210-T2	101250-P-S-M	08/09/88	2	13758
MCE-18-T1	101276-P-S-M	09/08/88	2	14083
MCE-18-T2	101277-P-S-M	09/08/88	2	14081
MCE-18-T3	101278-P-S-M	09/08/88	2	14079
MCE-46-T1	101279-P-S-M	09/08/88	2	14082
MCE-46-T2	101280-P-S-M	09/08/88	2	14080
MCE-46-T3	101281-P-S-M	09/08/88	2	14085

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SC-124-T1	101282-P-S-M	09/16/88	2	14092
SC-124-T2	101283-P-S-M	09/16/88	2	14093
SC-124-T3	101284-P-S-M	09/16/88	2	14091
SC-404-CB1	101285-P-S-M	09/16/88	2	14090
SC-319-T3	101288-P-S-M	09/08/88	2	14087
SC-405-CB1	101289-P-S-M	09/08/88	2	14098
NM-59-A-T2	101299-P-S-M	09/09/88	2	14505
NM-71-T1	101301-P-S-M	09/09/88	2	14508
NM-94-T1	101303-P-S-M	09/09/88	2	14507
NM-23-T1	101304-P-S-M	09/09/88	2	13052
NM-53-T1	101307-P-S-M	09/09/88	2	14503
NM-14-T2	101312-P-S-M	09/16/88	2	14099
NM-60-T1	101314-P-S-M	09/16/88	2	14500
NM-37-S1	101319-P-S-SW-C	09/16/88	2	14523
NM-P4-T1	101320-P-S-M	09/09/88	2	14532
NM-176-S1	101321-P-S-SW-C	09/09/88	2	14520
NM-176-S1	101321-P-S-SW-L	09/09/88	2	14529
NM-176-S1	101321-P-S-SW-R	09/09/88	2	14530
NM-132-T1	101323-P-S-M	09/09/88	2	14522
NM-142-T1	101324-P-S-M	09/09/88	2	14518
NM-93-S1	101325-P-S-SW-C	09/09/88	2	14517
NM-93-T1	101326-P-S-M	09/09/88	2	14521
NM-148-T1	101327-P-S-M	09/09/88	2	14519
NM-10-T1	101328-P-S-M	09/09/88	2	14514
SP-209-T1	101329-P-S-M	09/12/88	2	14565
SP-203-T1	101332-P-S-M	09/12/88	2	14562
SP-203-T2	101333-P-S-M	09/12/88	2	14564
NM-129-T1	101336-P-S-M*	09/12/88	2	14566
NM-78-T1	101337-P-S-M	09/12/88	2	14555
NM-78-T2	101338-P-S-M	09/12/88	2	14550
NM-78-T3	101339-P-S-M	09/12/88	2	14545
NM-75-T1	101340-P-S-M	09/12/88	2	14557
SP-267-T1	101346-P-S-M	09/12/88	2	14554
SP-267-T2	101347-P-S-M	09/12/88	2	14544
SP-267-T3	101348-P-S-M	09/12/88	2	14542
SP-30-T1	101349-P-S-M	09/12/88	2	14552
SP-234-T1	101350-P-S-M	09/12/88	2	14558
SP-232-T1	101351-P-S-M	09/12/88	2	14551
SP-136-T1	101352-P-S-M	09/12/88	2	14546
SP-30-T2	101355-P-S-M	09/12/88	2	14553

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-30-T3	101356-P-S-M	09/12/88	2	14549
SP-203-T3	101357-P-S-M	09/12/88	2	14547
NM-110-T1	101358-P-S-M	09/12/88	2	14607
NM-110-T2	101359-P-S-M	09/12/88	2	14606
NM-110-T3	101360-P-S-M	09/12/88	2	14609
NM-110-T6	101363-P-S-M	09/12/88	2	14604
NM-95-T1	101364-P-S-M	09/12/88	2	14611
NM-95-T3	101366-P-S-M	09/12/88	2	14605
SP-123-T1	101376-P-S-M	09/13/88	2	14631
SP-37-T1	101377-P-S-M	09/12/88	2	14618
SP-37-T2	101378-P-S-M	09/13/88	2	14634
SP-37-T3	101379-P-S-M	09/12/88	2	14617
SP-32-T1	101380-P-S-M	09/12/88	2	14615
SP-32-T2	101381-P-S-M	09/12/88	2	14619
SP-32-T3	101382-P-S-M	09/12/88	2	14620
SP-55-T1	101383-P-S-M	09/12/88	2	14622
SP-55-T2	101384-P-S-M	09/12/88	2	14621
SP-55-T3	101385-P-S-M	09/16/88	2	14161
SP-54-T2	101387-P-S-M	09/16/88	2	14110
SP-54-T3	101388-P-S-M	09/16/88	2	14101
SP-61-T1	101389-P-S-M	09/16/88	2	14107
SP-61-T2	101390-P-S-M	09/16/88	2	14104
SP-61-T3	101391-P-S-M	09/16/88	2	14699
SP-178-T1	101392-P-S-M	09/16/88	2	14698
SP-178-T3	101394-P-S-M	09/16/88	2	14100
SP-185-T1	101398-P-S-M	09/13/88	2	14690
SP-185-T2	101399-P-S-M	09/16/88	2	14697
SP-G10-T1	101400-P-S-M	09/13/88	2	14691
SP-118-T1	101401-P-S-M	09/16/88	2	14127
SP-118-T2	101402-P-S-M	09/13/88	2	14693
SP-62-T1	101407-P-S-M	09/13/88	2	14694
SP-369-T2	101411-P-S-M	09/13/88	2	14684
SP-369-T3	101412-P-S-M	09/13/88	2	14682
SP-367-T1	101413-P-S-M	09/06/88	2	14131
SP-120-T2	101419-P-S-M	09/16/88	2	14128
SP-120-T3	101420-P-S-M	09/16/88	2	14126
N-26-S1	200086-P-S-SW-C	09/19/88	2	14178
SP-237-S1	200363-P-S-SW-C	09/13/88	2	14685
SP-86-S1	200449-P-S-SW-LEFT	09/13/88	2	14688
SP-88-S1	200451-P-S-SW-L	09/13/88	2	14686

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-88-S1	200451-P-S-SW-R	09/13/88	2	14675
SP-1-CB1	200792-P-S-M	09/16/88	2	14539
SP-2-CB1	200793-P-S-M	09/16/88	2	14536
SP-31-CB2	200794-P-S-M	09/09/88	2	14534
NMC-B-S1	200803-P-S-SW-C	09/16/88	2	14524
NMC-B-S1	200803-P-S-SW-L	09/16/88	2	14528
NMC-B-S1	200803-P-S-SW-R	09/16/88	2	14526
NMC-G-S1	200809-P-S-M	09/12/88	2	14597
NMC-G-S2	200810-P-S-SW-C	09/12/88	2	14600
NMC-G-S2	200810-P-S-SW-L	09/12/88	2	14592
NMC-G-S2	200810-P-S-SW-R	09/12/88	2	14595
NMC-C-T2	200812-P-S-M	09/12/88	2	14598
NMC-C-S1	200814-P-S-SW-C	09/19/88	2	14179
NMC-C-S1	200814-P-S-SW-L	09/12/88	2	14599
NMC-C-S1	200814-P-S-SW-R	09/12/88	2	14589
NH-95-T10	200819-P-S-M	09/12/88	2	14586
NH-95-T8	200821-P-S-M	09/12/88	2	14602
NH-95-T9	200822-P-S-M	09/12/88	2	14594
P-SPARE-T92	200836-P-S-M	09/13/88	2	14652
P-SPARE-T93	200837-P-S-M	09/13/88	2	14648
P-SPARE-T94	200838-P-S-M	09/13/88	2	14674
P-SPARE-T96	200840-P-S-M	09/13/88	2	14668
P-SPARE-T97	200841-P-S-M	09/13/88	2	14678
P-SPARE-T98	200842-P-S-M	09/13/88	2	14663
SP-87-S1	200850-P-S-SW-C	09/13/88	2	14687
SP-87-S1	200850-P-S-SW-L	09/13/88	2	14689
SP-87-S1	200850-P-S-SW-R	09/13/88	2	14680
SP-89-S1	200851-P-S-SW-C	09/16/88	2	14120
SP-89-S1	200851-P-S-SW-L	09/16/88	2	14113
SP-89-S1	200851-P-S-SW-R	09/16/88	2	14114
SP-89-T2	200852-P-S-M	09/16/88	2	14105
Q-HAZ-T1	200899-P-S-M	09/16/88	2	14224
NM-95-T2	101365-P-S-M	09/12/88	2	14612
MCE-2-T1	200668-P-S-M	08/04/88	2	13372
NH-95-T7	200820-P-S-M	08/11/88	2	14587
Q-75-S1	100037-P-S-SW-M	04/25/88	2	10359
SDA-229-T1	101269-P-S-M	08/09/88	2	14913
SP-178-T2	101393-P-S-MAIN	09/16/88	2	14629
SDA-229-CB1	200925-P-S-MAIN	09/13/88	2	14236
SDA-229-CB2	200904-P-S-CB-LEFT	09/13/88	2	14235

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SDA-229-CB2	200904-P-S-CB-RIGHT	09/13/88	2	14226
SDA-229-CB3	200923-P-S-CB-CENTER	09/13/88	2	14229
SDA-229-CB3	200923-P-S-CB-LEFT	09/13/88	2	14237
SDA-229-CB3	200923-P-S-CB-RIGHT	09/13/88	2	14230
SDA-229-CB4	200924-P-S-CB-CENTER	09/13/88	2	14231
SDA-229-CB4	200924-P-S-CB-LEFT	09/13/88	2	14227
SDA-229-CB4	200924-P-S-CB-RIGHT	09/13/88	2	14233
P-SPARE-T88	200218-P-S-MAIN	/ /	2	12315
SEW-08-CB1	100564-P-S-CBB-1	12/12/88	2	16037
SEW-08-CB1	100564-P-S-CBB-2	12/12/88	2	16040
SEW-08-CB1	100564-P-S-CBB-3	12/12/88	2	16009
SEW-08-CB1	100564-P-S-CBB-4	12/12/88	2	16044
SEW-08-CB1	100564-P-S-CBB-5	12/12/88	2	16038
SEW-08-CB1	100564-P-S-CBB-6	12/12/88	2	16010
P-26-CB5	101450-P-S-M	12/15/88	2	16084
P-26-CB6	101451-P-S-CB-M	12/15/88	2	16086
P-26-CB4	101452-P-S-CB-M	12/16/88	2	16111
P-26-CB3	101453-P-S-CB-M	12/15/88	2	16091
P-26-CB1	101454-P-S-CB-M	12/15/88	2	16085
SP-72-CB4	101475-P-S-M	12/16/88	2	16114
SDA-232-CB4	101486-P-S-M	12/16/88	2	16099
SP-35-T2	101553-P-S-M	12/13/88	2	15947
P-72-SPARE-T4	101557-P-S-M-RESAMP	12/13/88	2	15962
P-72-SPARE-T1	101558-P-S-M-RESAMP	12/13/88	2	15958
P-72-SPARE-T2	101559-P-S-M-RESAMP	12/13/88	2	15952
P-72-SPARE-T5	101560-P-S-M	12/13/88	2	15960
P-72-SPARE-T6	101561-P-S-M	12/13/88	2	15927
P-72-SPARE-T7	101562-P-S-M	12/13/88	2	15956
P-72-SPARE-T8	101563-P-S-M	12/13/88	2	15953
P-72-SPARE-T3	101556-P-S-M-RESAMP	12/13/88	2	15963
SP-54-T1	101572-P-S-M-RESAMP	12/15/88	2	16069
SP-BA-T1	101573-P-S-M	12/15/88	2	16066
SP-BA-T2	101574-P-S-M	12/15/88	2	16049
SP-BA-T3	101575-P-S-M	12/15/88	2	15900
NH-200A-T1	101578-P-S-M	12/15/88	2	16072
SDA-232-CB1	101580-P-S-M	12/13/88	2	15924
SDA-232-CB2	101581-P-S-M	12/13/88	2	15984
SDA-232-CB0	101582-P-S-M	12/13/88	2	15964
P-72-SPARE-T9	101583-P-S-M	12/13/88	2	15949
NH-159-CB3	200629-P-S-CBB-2	12/15/88	2	15902

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
NH-159-CB3	200629-P-S-CBB-3	12/15/88	2	16063
NH-159-CB3	200629-P-S-CBB-1	12/15/88	2	15901
NH-159-CB3	200629-P-S-CBB-4	12/15/88	2	16070
NH-159-CB3	200629-P-S-CBB-5	12/15/88	2	16071
NH-159-CB3	200629-P-S-CBB-6	12/15/88	2	16048
NH-159-CB4	200630-P-S-CBB-1	12/12/88	2	16036
NH-159-CB4	200630-P-S-CBB-2	12/12/88	2	16042
NH-159-CB4	200630-P-S-CBB-3	12/12/88	2	16031
NH-159-CB4	200630-P-S-CBB-4	12/12/88	2	16033
NH-159-CB4	200630-P-S-CBB-5	12/12/88	2	16034
NH-159-CB4	200630-P-S-CBB-6	12/12/88	2	16039
W-176-T1	100074-P-S-MAIN	05/02/88	2	10217
W-337-CB5	100088-P-S-CB-MAIN	05/02/88	2	10220
W-183-S1	100086-P-S-SW-LEFT	05/02/88	2	10222
W-146-T1	100083-P-S-MAIN	05/02/88	2	10224
W-337-CB7	100093-P-S-CB-MAIN	05/02/88	2	10227
W-337-CB2	100089-P-S-CB-MAIN	05/02/88	2	10228
W-337-CB6	100092-P-S-CB-MAIN	05/02/88	2	10229
W-337-CB4	100091-P-S-CB-MAIN	05/02/88	2	10230
W-183-S1	100086-P-S-SW-CENTER	05/02/88	2	10231
W-183-T1	100084-P-S-MAIN	06/28/98	2	10232
W-183-T3	100085-P-S-MAIN	05/02/88	2	10235
W-163-E-CB7	100097-P-S-OCB-MAIN	05/02/88	2	10242
W-143-S1	100101-P-S-SW-MAIN	05/02/88	2	10245
W-337-CB1	100087-P-S-CB-MAIN	05/02/88	2	10250
W-143-S7	100110-P-S-SW-MAIN	05/02/88	2	10252
W-143-S4	100106-P-S-SW-LEFT	05/02/88	2	10253
W-143-S4	100106-P-S-SW-CENTER	05/02/88	2	10254
W-143-S5	100107-P-S-SW-MAIN	05/02/88	2	10255
W-143-S4	100106-P-S-SW-RIGHT	05/02/88	2	10256
W-177-S1	100112-P-S-SW-CENTER	05/02/88	2	10257
W-177-S1	100112-P-S-SW-RIGHT	05/02/88	2	10259
W-177-S1	100112-P-S-SW-LEFT	05/02/88	2	10260
W-143-S3	100104-P-S-SW-MAIN	05/02/88	2	10261
W-143-S2	100103-P-S-SW-LEFT	05/02/88	2	10262
W-143-S2	100103-P-S-SW-CENTER	05/02/88	2	10263
W-143-S6	100109-P-S-SW-CENTER	05/02/88	2	10264
W-177-T1	100111-P-S-MAIN	05/02/88	2	10265
W-143-S18	100129-P-S-SW-LEFT	05/02/88	2	10271
W-143-S9	100116-P-S-SW-MAIN	05/02/88	2	10281

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
W-143-S15	100124-P-S-SW-MAIN	05/02/88	2	10282
W-143-S8	100115-P-S-SW-RIGHT	05/02/88	2	10283
W-143-S11	100119-P-S-SW-MAIN	05/02/88	2	10284
W-143-S8	100115-P-S-SW-CENTER	05/02/88	2	10285
W-143-S14	100123-P-S-SW-CENTER	05/02/88	2	10286
W-337-CB3	100090-P-S-CB-MAIN	05/02/88	2	10287
W-143-T13	100134-P-S-MAIN	05/02/88	2	10288
W-220-SPARE-T1	100139-P-S-MAIN	05/02/88	2	10293
W-PIER 2-S2	100146-P-S-SW-CENTER	05/02/88	2	10297
W-PIER 10-T1	100147-P-S-MAIN	05/02/88	2	10298
W-PIER 2-S2	100146-P-S-SW-RIGHT	05/02/88	2	10299
X-137-T2	100164-P-S-MAIN	05/02/88	2	10304
W-PIER 2-S1	100144-P-S-SW-MAIN	05/02/88	2	10309
X-361-S1	100184-P-S-SW-MAIN	05/02/88	2	10310
X-137-T3	100165-P-S-MAIN	05/02/88	2	10312
X-137-S1	100166-P-S-SW-CENTER	05/02/88	2	10313
X-137-T1	100163-P-S-MAIN	05/02/88	2	10314
X-137-S1	100166-P-S-SW-LEFT	05/02/88	2	10316
X-132-S1	100154-P-S-SW-LEFT	05/02/88	2	10321
X-132-S2	100157-P-S-SW-LEFT	05/02/88	2	10322
X-132-S2	100157-P-S-SW-CENTER	05/02/88	2	10324
X-134-S1	100162-P-S-SW-RIGHT	05/02/88	2	10325
X-134-S1	100162-P-S-SW-CENTER	05/02/88	2	10326
X-11-T3	100170-P-S-MAIN	05/02/88	2	10327
X-132-S1	100154-P-S-SW-RIGHT	05/02/88	2	10328
X-132-S1	100154-P-S-SW-CENTER	05/02/88	2	10330
X-132-S2	100157-P-S-SW-RIGHT	05/02/88	2	10331
X-371-T1	100176-P-S-MAIN	05/02/88	2	10332
X-28-S1	100167-P-S-SW-MAIN	05/02/88	2	10337
X-360-T2	100179-P-S-MAIN	05/02/88	2	10338
X-11-S1	100171-P-S-SW-RIGHT	05/02/88	2	10339
X-353-T1	100177-P-S-MAIN	05/02/88	2	10340
X-26-S1	100187-P-S-SW-RIGHT	05/02/88	2	10343
X-373-S1	100191-P-S-SW-LEFT	05/02/88	2	10344
X-368-S1	100190-P-S-SW-CENTER	05/02/88	2	10345
X-72-T1	100182-P-S-MAIN	05/02/88	2	10347
X-373-S1	100191-P-S-SW-RIGHT	05/02/88	2	10348
X-373-S1	100191-P-S-SW-CENTER	05/02/88	2	10349
X-368-S1	100190-P-S-SW-RIGHT	05/02/88	2	10376
X-359-S1	100188-P-S-SW	05/02/88	2	10377

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
X-368-S1	100190-P-S-SW-LEFT	05/02/88	2	10378
X-26-S1	100187-P-S-SW-LEFT	05/02/88	2	10381
W-184-T2	100068-P-S-MAIN	05/02/88	2	10383
W-184-S1	100066-P-S-SW-RIGHT	05/02/88	2	10384
W-180-S1	100062-P-S-SW-LEFT	05/02/88	2	10389
W-180-T2	100064-P-S-MAIN	05/02/88	2	10391
W-184-T1	100067-P-S-MAIN	05/02/88	2	10394
W-7-T1	100059-P-S-MAIN	05/02/88	2	10395
W-7-T2	100061-P-S-MAIN	05/02/88	2	10397
W-315-S2	100049-P-S-SW-RIGHT	05/02/88	2	10399
W-184-T3	100069-P-S-MAIN	05/02/88	2	10400
W-231-S1	100057-P-S-SW-LEFT	05/02/88	2	10351
W-129-A-T1	100051-P-S-MAIN	05/02/88	2	10361
W-143-S19	100130-P-S-SW-MAIN	05/02/88	2	10270
W-180-S1	100062-P-S-SW-CENTER	04/04/88	2	10494
W-180-T1	100063-P-S-MAIN	04/27/88	2	10511
W-383-T1	100050-P-S-MAIN	04/27/88	2	10514
W-180-S1	100062-P-S-SW-RIGHT	04/27/88	2	10516
W-231-S1	100057-P-S-SW-RIGHT	04/27/88	2	10518
W-180-T3	100065-P-S-MAIN	04/27/88	2	10519
W-231-S1	100057-P-S-SW-CENTER	04/27/88	2	10523
W-184-S1	100066-P-S-SW-LEFT	04/27/88	2	10526
W-184-S1	100066-P-S-SW-CENTER	04/28/88	2	10535
Z-86-T1	100237-P-S-MAIN	05/02/88	2	10612
Z-86-T2	100236-P-S-MAIN	05/02/88	2	10620
Z-309-T2	100227-P-S-MAIN	05/02/88	2	10621
Z-309-T1	100228-P-S-MAIN	05/02/88	2	10624
Z-103-T4	100241-P-S-MAIN	05/02/88	2	10625
Z-309-T10	100235-P-S-MAIN	05/02/88	2	10641
Z-309-T7	100232-P-S-MAIN	05/02/88	2	10642
Y-100-A-S2	200024-P-S-SW-LEFT	05/02/88	2	10647
Z-186-S2	100257-P-S-SW-MAIN	04/29/88	2	10606
Z-133-S3	100253-P-S-SW-RIGHT	04/29/88	2	10608
Z-133-S2	100252-P-S-SW-CENTER	04/29/88	2	10610
Z-140-S1	100263-P-S-SW-MAIN	04/28/88	2	10592
Z-93-S2	100260-P-S-SW-RIGHT	04/29/88	2	10596
Z-133-S2	100252-P-S-SW-LEFT	04/29/88	2	10597
Z-93-S2	100260-P-S-SW-LEFT	04/29/88	2	10603
W-PIER 4-S2	200011-P-S-SW-LEFT	06/01/88	2	11004
W-PIER 4-S3	200012-P-S-SW-CENTER	06/01/88	2	11005

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
W-PIER 4-T8	200013-P-S-MAIN	06/01/88	2	11006
W-PIER 4-T9	200014-P-S-MAIN	06/01/88	2	11007
W-PIER 4-S2	200011-P-S-SW-CENTER	06/01/88	2	11008
W-PIER 4-S5	200007-P-S-SW-RIGHT	06/01/88	2	11030
W-PIER 4-S5	200007-P-S-SW-CENTER	06/01/88	2	11031
X-11-T1	100168-P-S-M	05/02/88	2	10342
WB-9-5-T1	100909-P-S-M	07/15/88	2	12006
WB-10-2-T1	100911-P-S-M	07/15/88	2	12008
WB-10-1-T1	100912-P-S-M	07/15/88	2	12009
WB-13R-1-T1	100913-P-S-M	07/15/88	2	12010
WB-14L-T1	100914-P-S-M	07/15/88	2	12011
WB-14L-2-5-T1	100919-P-S-M	07/15/88	2	12012
WB-14L-2-6-T1	100920-P-S-M	07/15/88	2	12013
WB-14L-2-8-T1	100921-P-S-M	07/15/88	2	12014
WB-14L-8-T1	100922-P-S-M	07/15/88	2	12015
WB-14L-4-1-T1	100923-P-S-M	07/15/88	2	12016
WB-14L-2-T1	100957-P-S-M	07/19/88	2	12037
WB-14L-3-2-T1	100958-P-S-M	07/19/88	2	12369
WB-19R-T1	100959-P-S-M	07/19/88	2	12370
WB-21R-1-T1	100960-P-S-M	07/19/88	2	12371
WB-22R-T1	100961-P-S-M	07/19/88	2	12372
WB-21R-2-T1	100963-P-S-M	07/19/88	2	12374
WB-21R-4-T1	100964-P-S-M	07/19/88	2	12375
WB-18R-3-T1	100965-P-S-M	07/19/88	2	12376
WB-21L-L-T1	100967-P-S-M	07/19/88	2	12378
WB-21L-C-T1	100968-P-S-M	07/19/88	2	12379
WB-21L-R-T1	100969-P-S-M	07/19/88	2	12380
Z-2-T1	200543-P-S-M	07/19/88	2	12382
U-93-S1	100445-P-S-SW-L	07/23/88	2	12567
U-93-S1	100445-P-S-SW-C	07/23/88	2	12568
U-93-S1	100445-P-S-SW-R	07/23/88	2	12570
U-SW-220-S1	100429-P-S-SW-M	07/23/88	2	12572
U-SW-227-S1	100432-P-S-SW-M	06/28/88	2	12573
U-115-T1	100437-P-S-M	07/23/88	2	12574
U-131-T1	100428-P-S-M	07/23/88	2	12575
U-SW-219-S1	100430-P-S-SW-M	07/23/88	2	12576
U-SW-214-S1	100434-P-S-SW-M	07/23/88	2	12577
U-127-T1	100436-P-S-M	07/23/88	2	12579
U-117-T1	100435-P-S-M	07/23/88	2	12584
U-40-T1	100461-P-S-M	07/23/88	2	12589

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
V-47-S1	200255-P-S-SW-L	07/23/88	2	12598
V-51-CB6	200243-P-S-CB-M	07/23/88	2	12599
V-47-S1	200255-P-S-SW-C	07/23/88	2	12600
V-17-S1	200251-P-S-SW-L	07/23/88	2	12602
V-51-CB10	200247-P-S-CB-M	07/23/88	2	12605
V-47-S1	200255-P-S-SW-R	07/23/88	2	12606
V-51-CB5	200242-P-S-CB-M	07/23/88	2	12607
W-PIER 3-V-A-S1	200257-P-S-SW-M	07/23/88	2	12609
V-43-T4	200278-P-S-M	07/23/88	2	12610
V-43-T2	200276-P-S-M	07/23/88	2	12612
V-43-S2	200280-P-S-SW-L	07/23/88	2	12613
V-43-S2	200280-P-S-SW-R	07/23/88	2	12614
V-43-S2	200280-P-S-SW-C	07/23/88	2	12617
V-28-S7	200270-P-S-SW-M	07/23/88	2	12620
V-28-S6	200269-P-S-SW-M	07/23/88	2	12626
V-28-T8	200262-P-S-MAIN	07/23/88	2	12630
V-28-S1	200258-P-S-SW-M	07/23/88	2	12632
X-353-S1	100337-P-S-SW-R	07/15/88	2	12173
T-217-S1	200120-P-S-SW	07/15/88	2	12196
U-80-T1	100420-P-S-M	07/15/88	2	12209
U-6A-S1	100421-P-S-SW-C	07/15/88	2	12217
U-80-S1	100419-P-S-SW-R	07/15/88	2	12218
U-80-S1	100419-P-S-SW-C	07/15/88	2	12219
T-SH-14-S1	100416-P-S-SW-M	07/15/88	2	12220
U-55-S1	100418-P-S-SW-M	07/15/88	2	12221
U-80-S1	100419-P-S-SW-L	07/15/88	2	12225
X-358-CB4	100425-P-S-CB-M	07/15/88	2	12285
X-358-CB3	100424-P-S-CB-M	07/15/88	2	12287
X-358-CB1	100422-P-S-CB-M	07/15/88	2	12292
X-358-CB6	100427-P-S-CB-M	07/15/88	2	12302
V-31-T3	200287-P-S-M	07/15/88	2	12336
V-31-T1	200285-P-S-M	07/15/88	2	12338
V-36-S1	200295-P-S-SW-L	07/15/88	2	12339
V-41-T1	200288-P-S-M	07/15/88	2	12342
V-146-T1	200282-P-S-M	07/15/88	2	12343
V-36-T3	200294-P-S-M	07/15/88	2	12344
V-60-S2	200283-P-S-SW	07/15/88	2	12346
V-31-S1	200286-P-S-SW-R	07/15/88	2	12350
T-45-T5	100597-P-S-HV-TC	07/25/88	2	12663
V-53-S1	100570-P-S-SW-M	07/25/88	2	12666

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
T-45-T5	100597-P-S-NL-TC	07/25/88	2	12673
V-53-S2	100574-P-S-SW	07/25/88	2	12675
V-67-S2	100589-P-S-SW-M	07/25/88	2	12677
V-66-T2	100576-P-S-M	07/25/88	2	12678
V-53-T4	100573-P-S-M	07/25/88	2	12679
V-53-T3	100572-P-S-M	07/25/88	2	12688
T-45-CB3	100595-P-S-CB-M	07/25/88	2	12690
T-45-CB2	100594-P-S-CB-M	07/25/88	2	12691
T-45-CB1	100593-P-S-CB	07/25/88	2	12692
V-67-S1	100588-P-S-SW-R	07/25/88	2	12694
V-67-S1	100588-P-S-SW-L	07/25/88	2	12696
V-67-S1	100588-P-S-SW-C	07/25/88	2	12697
V-58-S1	100586-P-S-SW-L	07/25/88	2	12698
W-337-CB2	100089-P-S-CBB-3	07/25/88	2	12699
W-337-CB2	100089-P-S-CBB-1	07/25/88	2	12700
W-337-CB7	100093-P-S-CBB-1	07/25/88	2	12701
W-337-CB6	100092-P-S-CBB-1	07/25/88	2	12702
W-337-T2	100567-P-S-M	07/25/88	2	12704
W-337-CB2	100089-P-S-CBB-6	07/25/88	2	12705
W-337-CB7	100093-P-S-CBB-5	07/25/88	2	12706
W-337-CB7	100093-P-S-CBB-4	07/25/88	2	12707
W-337-CB7	100093-P-S-CBB-2	07/25/88	2	12711
W-337-CB7	100093-P-S-CBB-3	07/25/88	2	12713
W-337-CB6	100092-P-S-CBB-4	07/25/88	2	12715
W-337-CB2	100089-P-S-CBB-2	07/25/88	2	12716
W-337-CB2	100089-P-S-CBB-4	07/25/88	2	12717
W-337-CB6	100092-P-S-CBB-2	07/25/88	2	12718
W-337-CB6	100092-P-S-CBB-6	07/25/88	2	12720
V-28-S2	200259-P-S-SW-M	07/23/88	2	12633
W-337-CB2	100089-P-S-CBB-5	07/25/88	2	12721
W-337-CB6	100092-P-S-CBB-5	07/25/88	2	12722
W-337-CB6	100092-P-S-CBB-3	07/25/88	2	12723
W-337-CB7	100093-P-S-CBB-6	07/25/88	2	12724
V-88-S7	200304-P-S-SW-M	07/25/88	2	12738
V-88-S6	200303-P-S-SW-R	07/25/88	2	12739
V-88-S9	200307-P-S-SW-R	07/25/88	2	12741
V-88-S8	200305-P-S-SW-L	07/25/88	2	12742
V-88-S9	200307-P-S-SW-L	07/25/88	2	12743
V-88-S4	200299-P-S-SW-R	07/25/88	2	12744
V-88-S9	200307-P-S-SW-C	07/25/88	2	12745

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
V-88-S5	200301-P-S-SW-M	07/25/88	2	12746
V-88-S8	200305-P-S-SW-R	07/25/88	2	12748
V-88-S8	200305-P-S-SW-C	07/25/88	2	12749
V-15-T1	200310-P-S-M	07/25/88	2	12751
V-88-S6	200303-P-S-SW-L	07/25/88	2	12752
V-88-S4	200299-P-S-SW-C	07/25/88	2	12757
V-88-S10	200309-P-S-SW-L	07/25/88	2	12764
W-143-S16	100126-P-S-SW-L	07/21/88	2	12797
V-37-S1	200400-P-S-SW-M	07/22/88	2	12822
W-388-T1	100656-P-S-M	07/22/88	2	12824
W-143-S12	100121-P-S-SW-C	07/22/88	2	12834
W-143-S18	100129-P-S-SW-C	07/22/88	2	12843
Z-107-T5	200462-P-S-M	07/26/88	2	12942
X-26-CB2	200429-P-S-CB-M	07/26/88	2	12945
X-26-CB1	200428-P-S-CB-M	07/26/88	2	12947
W-259-T2	200426-P-S-M	07/26/88	2	12948
W-259-T3	200427-P-S-M	07/27/88	2	12949
X-132-T6	100757-P-S-M	08/02/88	2	12975
Z-107-T6	200463-P-S-M	07/27/88	2	12982
X-132-T3	100756-P-S-M	07/28/88	2	12993
Y-182-T1	100758-P-S-M	07/28/88	2	12995
Z-107-T4	200461-P-S-M	07/28/88	2	12999
Z-107-S1	200464-P-S-SW-C	07/28/88	2	13004
Z-107-S1	200464-P-S-SW-R	07/28/88	2	13006
Z-107-S1	200464-P-S-SW-L	07/28/88	2	13005
Z-357-T1	200533-P-S-M	07/28/88	2	13013
Z-357-T2	200534-P-S-M	07/28/88	2	13014
W-PIER 2-T9	200539-P-S-M	07/28/88	2	13020
Z-133-CB1	200563-P-S-M	07/28/88	2	13049
Z-133-S3	100253-P-S-SW-C	07/28/88	2	13068
Z-133-CB3	200561-P-S-M	07/29/88	2	13071
Z-133-S3	100253-P-S-SW-L	07/29/88	2	13072
Z-133-CB2	200562-P-S-M	07/29/88	2	13073
Z-105-CB1	200564-P-S-M	07/29/88	2	13075
U-130-T1	200592-P-S-M	08/03/88	2	13170
W-PIER 2-CB2	200541-P-S-M	08/04/88	2	13306
Z-357-T3	200535-P-S-M	08/04/88	2	13307
WB-16L-T1	100915-P-S-M	08/04/88	2	13313
WB-26L-R-T1	100975-P-S-M	08/04/88	2	13329
WB-26L-L-T1	100973-P-S-M	08/04/88	2	13331

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
WB-23R-T1	100970-P-S-M	08/04/88	2	13333
WB-23R-3-T1	100971-P-S-M	08/04/88	2	13334
W-PIER 11-T6	200663-P-S-TH	08/04/88	2	13337
W-PIER 11-S13	200662-P-S-M	08/04/88	2	13338
W-PIER 11-T6	200663-P-S-M	08/04/88	2	13340
W-PIER 11-T5	200660-P-S-TH	08/04/88	2	13341
W-PIER 11-S15	200665-P-S-M	08/04/88	2	13342
W-PIER 11-T3	200654-P-S-TH	08/04/88	2	13344
W-PIER 11-S5	200650-P-S-M	08/04/88	2	13345
W-PIER 11-S7	200653-P-S-M	08/04/88	2	13347
W-PIER 11-T3	200654-P-S-M	08/04/88	2	13348
W-PIER 11-T5	200660-P-S-M	08/04/88	2	13349
W-PIER 11-T4	200657-P-S-TH	08/04/88	2	13350
W-PIER 11-S11	200659-P-S-M	08/04/88	2	13351
W-PIER 11-T4	200657-P-S-M	08/04/88	2	13352
W-PIER 11-T2	200651-P-S-TH	08/04/88	2	13353
W-PIER 11-S9	200656-P-S-M	08/04/88	2	13354
W-PIER 11-S1	200645-P-S-M	08/04/88	2	13355
W-PIER 11-T2	200651-P-S-M	08/04/88	2	13357
W-PIER 11-S3	200648-P-S-M	08/04/88	2	13360
W-PIER 11-T1	200646-P-S-M	08/04/88	2	13361
W-PIER 11-S4	200649-P-S-M	08/04/88	2	13362
W-PIER 11-T1	200646-P-S-TH	08/04/88	2	13363
W-PIER 12-T4	200684-P-S-M	08/04/88	2	13395
W-PIER 7-T3	200704-P-S-TH	08/04/88	2	13396
W-PIER 7-S2	200703-P-S-M	08/04/88	2	13397
W-PIER 7-T4	200706-P-S-TH	08/04/88	2	13400
W-PIER 7-S4	200707-P-S-M	08/04/88	2	13401
W-PIER 7-S3	200705-P-S-M	08/04/88	2	13402
W-PIER 7-T2	200702-P-S-TH	08/04/88	2	13403
W-PIER 7-S1	200701-P-S-M	08/04/88	2	13405
W-PIER 10-T4	200697-P-S-M	08/04/88	2	13411
W-PIER 10-S8	200699-P-S-M	08/04/88	2	13412
W-PIER 7-T1	200700-P-S-TH	08/04/88	2	13413
W-PIER 10-S5	200695-P-S-M	08/04/88	2	13414
W-PIER 10-T4	200697-P-S-TH	08/04/88	2	13415
W-PIER 10-T3	200694-P-S-M	08/04/88	2	13416
W-PIER 10-S6	200696-P-S-M	08/04/88	2	13417
W-PIER 10-T2	200691-P-S-M	08/04/88	2	13419
W-PIER 10-S1	200689-P-S-M	08/04/88	2	13420

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
W-PIER 10-S7	200698-P-S-M	08/04/88	2	13421
W-PIER 10-T2	200691-P-S-TH	08/04/88	2	13422
W-PIER 10-T3	200694-P-S-TH	08/04/88	2	13423
W-PIER 10-S4	200693-P-S-M	08/04/88	2	13424
W-PIER 10-T5	200688-P-S-TH	08/04/88	2	13425
W-PIER 10-T5	200688-P-S-M	08/04/88	2	13426
W-PIER 10-S3	200692-P-S-M	08/04/88	2	13427
W-PIER 10-S2	200690-P-S-M	08/04/88	2	13428
W-PIER 5-S1	200710-P-S-M	08/05/88	2	13458
Z-9-T1	101075-P-S-M	08/05/88	2	13524
V-28-S10	200758-P-S-SW-R	08/05/88	2	13553
V-28-T13	200759-P-S-M	08/06/88	2	13558
V-28-T16	200755-P-S-M	08/06/88	2	13559
V-88-T4	101096-P-S-M	08/06/88	2	13560
V-88-S4	200299-P-S-SW-L	08/06/88	2	13566
X-275-T1	200783-P-S-M	08/06/88	2	13567
V-28-T11	200756-P-S-M	08/06/88	2	13573
V-28-T14	200760-P-S-M	08/06/88	2	13580
V-28-T12	200757-P-S-M	08/06/88	2	13581
V-28-T15	200761-P-S-M	08/06/88	2	13582
V-88-S1	101097-P-S-SW-R	08/06/88	2	13589
V-88-S10	200309-P-S-SW-C	08/06/88	2	13592
Z-86-S1	200782-P-S-SW-L	08/06/88	2	13596
V-88-S6	200303-P-S-SW-C	08/06/88	2	13599
Z-86-S2	200781-P-S-SW-R	08/06/88	2	13603
U-97-T3	101131-P-S-M	08/06/88	2	13605
U-99-T5	101125-P-S-M	08/06/88	2	13606
U-121-T3	101135-P-S-M	08/06/88	2	13607
U-99-T3	101126-P-S-M	08/06/88	2	13609
U-121-T1	101133-P-S-M	08/06/88	2	13610
U-99-T1	101124-P-S-M	08/06/88	2	13611
U-97-T4	101132-P-S-M	08/06/88	2	13614
U-99-T2	101127-P-S-M	08/06/88	2	13617
U-99-CB1	101123-P-S-M	08/06/88	2	13620
U-99-T4	101116-P-S-M	08/09/88	2	13622
U-48-T3	101170-P-S-M	08/09/88	2	13625
V-41-T2	101171-P-S-M	08/09/88	2	13831
U-97-CB1	101128-P-S-M	08/09/88	2	13837
U-48-T2	101169-P-S-M	08/09/88	2	13839
U-58-T2	101163-P-S-M	08/09/88	2	13840

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
U-48-T1	101168-P-S-M	08/09/88	2	13841
U-46-T1	101153-P-S-M	08/09/88	2	13842
U-69-T2	101160-P-S-M	08/09/88	2	13843
U-102-T3	101167-P-S-M	08/09/88	2	13845
U-46-T2	101154-P-S-M	08/09/88	2	13847
U-58-T3	101164-P-S-M	08/09/88	2	13848
U-102-T1	101165-P-S-M	08/09/88	2	13849
U-69-T1	101159-P-S-M	08/09/88	2	13655
U-46-T3	101155-P-S-M	08/09/88	2	13658
U-58-T1	101162-P-S-M	08/09/88	2	13660
U-110-T2	101173-P-S-M	08/09/88	2	13667
U-110-T3	101174-P-S-M	08/09/88	2	13677
V-41-T3	101151-P-S-M	08/09/88	2	13692
Z-86-S2	200781-P-S-SW-L	08/09/88	2	13749
V-88-S11	200765-P-S-M	08/09/88	2	13759
Z-86-S2	200781-P-S-SW-C	08/09/88	2	13760
V-88-S1	101097-P-S-SW-C	08/09/88	2	13761
X-132-T4	100755-P-S-M	07/26/88	2	12941
W-143-S2	100103-P-S-SW-R	09/19/88	2	14193
W-143-S6	100109-P-S-SW-L	09/19/88	2	14196
W-143-S6	100109-P-S-SW-R	09/19/88	2	14190
W-143-S14	100123-P-S-SW-L	09/19/88	2	14192
X-26-S1	100187-P-S-SW-C	09/19/88	2	14186
Z-216-T1	100248-P-S-M	05/05/88	2	10607
V-88-S1	101097-P-S-L	08/06/88	2	13565
Z-140-CB1	101235-P-S-M	09/12/88	2	14623
V-57-S1	101438-P-S-SW-C	09/19/88	2	14166
V-57-S1	101438-P-S-SW-L	09/16/88	2	14154
W-62-CB1	101446-P-S-M	09/19/88	2	14189
Y-320-CB1	101447-P-S-M	09/19/88	2	14191
W-PIER 3-T2	101449-P-S-M	09/19/88	2	14199
W-PIER 4-S4	200006-P-S-SW-R	09/16/88	2	14122
W-PIER 4-S5	200007-P-S-SW-L	09/13/88	2	14671
W-PIER 4-S1	200010-P-S-SW-C	09/16/88	2	14125
W-PIER 4-S1	200010-P-S-SW-L	09/16/88	2	14119
W-PIER 4-S2	200011-P-S-SW-R	09/16/88	2	14117
Y-182-S2	200016-P-S-SW	05/16/88	2	10693
Y-100-A-T4	200022-P-S-M	05/16/88	2	10702
Y-100-A-S1	200023-P-S-SW-M	05/16/88	2	10700
Y-100-A-S2	200024-P-S-SW-C	05/15/88	2	10699

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Y-100-A-S3	200025-P-S-SW-C	09/13/88	2	14653
Y-100-A-S3	200025-P-S-SW-L	05/16/88	2	10701
Y-100-A-S4	200026-P-S-SW-L	09/13/88	2	14654
Y-100-A-S4	200026-P-S-SW-R	09/13/88	2	14655
V-17-S1	200251-P-S-SW-R	07/15/88	2	12597
V-43-S1	200279-P-S-SW-C	09/19/88	2	14195
V-43-S1	200279-P-S-SW-R	09/19/88	2	14197
W-PIER 7-T1	200700-P-S-M	08/04/88	2	13410
W-PIER 11-T7	200808-P-S-M	09/12/88	2	14593
V-15A-S1	200844-P-S-M	09/13/88	2	14659
V-15-S1	200845-P-S-M	09/13/88	2	14664
X-70-S1	200853-P-S-SW-L	09/16/88	2	14116
X-70-S1	200853-P-S-SW-R	09/16/88	2	14108
X-221-T2	200858-P-S-M	09/13/88	2	14681
W-129-CB1	200859-P-S-M	09/16/88	2	14121
V-66-S1	200860-P-S-SW-C	09/16/88	2	14159
V-66-S1	200860-P-S-SW-L	09/13/88	2	14657
V-66-S1	200860-P-S-SW-R	09/13/88	2	14646
W-177-CB1	200861-P-S-M	09/13/88	2	14667
V-58-S2	200871-P-S-SW-C	09/16/88	2	14158
V-58-S2	200871-P-S-SW-L	09/19/88	2	14169
V-58-S2	200871-P-S-SW-R	09/16/88	2	14149
V-82-S1	200872-P-S-SW-C	09/19/88	2	14168
V-82-S1	200872-P-S-SW-L	09/16/88	2	14157
V-82-S1	200872-P-S-SW-R	09/13/88	2	14641
V-88-CB1	200874-P-S-M	09/16/88	2	14145
T-44-T1	200903-P-S-M	09/16/88	2	14221
X-70-S1	200853-P-S-SW-C	09/16/88	2	14115
U-110-T1	101172-P-S-M	08/09/88	2	13666
V-31-T2	101152-P-S-M	08/09/88	2	14915
W-183-T2	101584-P-S-M	/ /	2	14628
T-45-CB1	100593-P-S-CBB-1	12/13/88	2	16003
T-45-CB1	100593-P-S-CBB-2	12/13/88	2	15974
T-45-CB1	100593-P-S-CBB-3	12/14/88	2	16141
T-45-CB1	100593-P-S-CBB-4	10/05/93	2	15981
T-45-CB1	100593-P-S-CBB-5	12/13/88	2	15973
T-45-CB1	100593-P-S-CBB-6	12/13/88	2	16002
T-45-CB2	100594-P-S-CBB-1	12/13/88	2	16000
T-45-CB2	100594-P-S-CBB-2	12/13/88	2	15966
T-45-CB2	100594-P-S-CBB-3	12/13/88	2	15972

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
T-45-CB2	100594-P-S-CBB-4	12/16/88	2	16101
T-45-CB2	100594-P-S-CBB-5	12/13/88	2	16005
T-45-CB2	100594-P-S-CBB-6	12/16/88	2	16098
T-45-CB3	100595-P-S-CBB-1	12/13/88	2	15969
T-45-CB3	100595-P-S-CBB-2	12/13/88	2	15980
T-45-CB3	100595-P-S-CBB-3	12/13/88	2	15976
T-45-CB3	100595-P-S-CBB-4	12/13/88	2	15983
T-45-CB3	100595-P-S-CBB-5	12/13/88	2	15965
T-45-CB3	100595-P-S-CBB-6	12/13/88	2	15970
W-163-E-CB2	101457-P-S-CB-M	12/16/88	2	16116
W-163-E-CB3	101458-P-S-CB-M	12/16/88	2	16102
W-163-E-CB4	101459-P-S-CB-M	12/15/88	2	16081
W-163-E-CB1	101460-P-S-CB-M	12/15/88	2	16087
W-163-E-CB5	101461-P-S-CB-M	12/15/88	2	16093
U-51-CB2	101477-P-S-M	12/15/88	2	16095
U-51-CB3	101478-P-S-M	12/16/88	2	16106
U-51-CB1	101484-P-S-M	12/16/88	2	16117
U-51-T2	101485-P-S-M	12/16/88	2	16100
W-337-T4	101491-P-S-M	12/16/88	2	16097
T-45-T2	101498-P-S-M	12/16/88	2	16108
T-45-T3	101499-P-S-M	12/15/88	2	16096
T-45-T4	101500-P-S-M	12/16/88	2	16110
T-45-T1	101501-P-S-M	12/16/88	2	16107
U-51-T3	101544-P-S-M	12/15/88	2	16050
U-51-CB4	101545-P-S-M	12/15/88	2	16053
U-51-CB5	101546-P-S-M	12/15/88	2	16052
U-51-CB6	101547-P-S-M	12/15/88	2	16062
U-51-CB8	101549-P-S-M	12/15/88	2	16060
V-53-T5	101550-P-S-M	12/13/88	2	15945
V-53-T6	101551-P-S-M	12/13/88	2	15946
WB-14L-2-2-T1	101564-P-S-M-RESAMP	12/13/88	2	15925
W-PIER 11-S2	101565-P-S-M-RESAMP	12/13/88	2	15954
W-PIER 11-S6	101566-P-S-M-RESAMP	12/13/88	2	15959
W-PIER 11-V6-T1	101567-P-S-M	12/13/88	2	15961
W-PIER 11-S8	101568-P-S-M-RESAMP	12/13/88	2	15948
W-PIER 11-S10	101569-P-S-M-RESAMP	12/13/88	2	15955
W-PIER 11-S14	101570-P-S-M-RESAMP	12/13/88	2	15951
W-PIER 11-S12	101571-P-S-M-RESAMP	12/13/88	2	15950
Y-352A-T1	101579-P-S-M	12/14/88	2	15919
B-30-S1	200028-P-S-SW	05/02/88	3	10639

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
A-127-T1	100201-P-S-MAIN	06/01/88	3	11018
A-57-T2	100205-P-S-MAIN	06/01/88	3	11000
CEP-8-S3	100301-P-S-SW-L	06/27/88	3	11564
CEP-193-CB1	100280-P-S-OCB-M	06/29/88	3	11588
CEP-156-S1	100308-P-S-M	06/29/88	3	11595
CEP-208-S1	100317-P-S-SW-M	06/29/88	3	11607
CEP-162-T1	100329-P-S-TH	06/29/88	3	11618
CEP-162-T1	100329-P-S-M	06/29/88	3	11623
J-51-S1	200058-P-S-SW	06/30/88	3	11665
I-105-S1	200041-P-S-SW	06/30/88	3	11685
I-AA1-S1	200053-P-S-SW-C	06/30/88	3	11687
BEN-8-T1	100456-P-S-M	07/15/88	3	11891
BEN-97-T1	100515-P-S-M	07/15/88	3	11937
BEN-170-T1	100537-P-S-M	07/15/88	3	11958
G-29-C-S2	100354-P-S-SW-C	07/15/88	3	12157
H-2H-S1	100401-P-S-SW-R	07/15/88	3	12069
LP-23-T1	200320-P-S-M	07/21/88	3	12805
LP-20-S1	200317-P-S-M	07/22/88	3	12810
LP-20-T1	200316-P-S-THROAT	07/22/88	3	12813
LP-20-T2	200318-P-S-M	07/22/88	3	12823
LP-46-T1	200337-P-S-M	07/22/88	3	12832
CEP-PIER 25-T3	200380-P-S-M	07/26/88	3	12894
CEP-PIER 24-S9	200387-P-S-M	07/26/88	3	12929
CA-CENT-SUB-T1	100725-P-S-M	07/27/88	3	12958
CEP-PIER 25-T1	200371-P-S-TH	07/26/88	3	12898
LP-169-S1	100865-P-S-M	07/28/88	3	13024
CI-229-S3	200613-P-S-SW-R	08/02/88	3	13144
LP-112-T8	100819-P-S-M	08/01/88	3	13220
CA-7-T2	200789-P-S-M	03/.*/00	3	13762
A-104-CB5	100218-P-S-OCB	05/16/88	3	10709
A-54-T1	100225-P-S-M	05/16/88	3	10697
LP-84-T1	101436-P-S-M	09/19/88	3	14174
LF-59-T1	200379-P-S-M	07/26/88	3	12912
CEP-PIER 21-SN	200805-P-S-M	09/12/88	3	14560
DEP-20-T2	101536-P-S-M	12/14/88	3	15909
Q-21-S2	100009-P-S-SW-MAIN	05/02/88	3	10390
Q-1-T1	100039-P-S-MAIN	05/02/88	3	10353
Q-21-S5	100006-P-S-SW	04/04/88	3	10507
Q-21-T3	100003-P-S-THROAT	04/28/88	3	10536
Q-6-S4	100022-P-S-RIGHT	04/27/88	3	10503

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Q-6-S4	100022-P-S-CENTER	04/27/88	3	10527
Q-6-S4	100022-P-S-LEFT	04/28/88	3	10537
N-107-S1	200088-P-S-SW	06/30/88	3	11659
NH-124-T3	100393-P-S-M	07/15/88	3	12098
NH-10-S1	100381-P-S-SW-R	07/15/88	3	12116
NH-86-S1	100382-P-S-SW-M	07/15/88	3	12117
N-29-S1	200092-P-S-SW-L	07/15/88	3	12187
P-4-S1	200232-P-S-SW-L	07/15/88	3	12327
SEW-02-CB1	100560-P-S-CB-L	07/25/88	3	12758
SEW-02-CB1	100560-P-S-CB-C	07/25/88	3	12759
SP-236-T1	200405-P-S-M	07/22/88	3	12819
SP-236-S1	200408-P-S-SW-C	07/22/88	3	12835
SP-58-T1	100659-P-S-M	07/26/88	3	12892
SP-280-T3	200366-P-S-M	07/26/88	3	13133
SDA-213-T1	200374-P-S-M	07/26/88	3	12902
SP-356-T1	200496-P-S-TH	08/02/88	3	13263
NH-131-T3	101056-P-S-M	08/05/88	3	13495
SDA-100-T1	101236-P-S-M	08/09/88	3	13753
SDA-97-T1	101239-P-S-M	08/09/88	3	13755
NM-110-T4	101361-P-S-M	09/12/88	3	14610
NM-110-T5	101362-P-S-M	09/12/88	3	14608
SP-369-T1	101410-P-S-M	09/13/88	3	14683
R-46-T2	200128-P-S-M RESAMP	09/21/88	3	14182r
W-183-S1	100086-P-S-SW-RIGHT	05/02/88	3	10221
W-181-S1	100100-P-S-SW-CENTER	05/02/88	3	10239
W-259-S1	100095-P-S-SW-RIGHT	05/02/88	3	10240
X-11-S1	100171-P-S-SW-CENTER	05/02/88	3	10243
W-259-S1	100095-P-S-SW-CENTER	05/02/88	3	10244
W-181-S1	100100-P-S-SW-RIGHT	05/02/88	3	10247
W-259-S1	100095-P-S-SW-LEFT	05/02/88	3	10251
W-143-S10	100118-P-S-SW-LEFT	05/02/88	3	10276
W-143-S8	100115-P-S-SW-LEFT	05/02/88	3	10277
W-PIER 3-S1	100138-P-S-SW-MAIN	05/02/88	3	10292
X-137-S1	100166-P-S-SW-RIGHT	05/02/88	3	10311
X-380-T1	100152-P-S-MAIN	05/02/88	3	10318
X-11-S1	100171-P-S-SW-LEFT	05/02/88	3	10334
X-11-T2	100169-P-S-MAIN	05/02/88	3	10335
W-315-S2	100049-P-S-SW-LEFT	04/28/88	3	10545
WB-11-T1	100910-P-S-M	07/15/88	3	12007
WB-16R-T1	100924-P-S-M	07/15/88	3	12017

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
V-51-CB4	200241-P-S-CB-M	07/23/88	3	12608
V-28-T7	200265-P-S-M	07/23/88	3	12627
V-36-S1	200295-P-S-SW-R	07/23/88	3	12635
U-6A-S1	100421-P-S-SW-R	07/15/88	3	12224
X-358-CB2	100423-P-S-CB-M	07/15/88	3	12290
V-29-T1	200290-P-S-M	07/15/88	3	12337
V-67-T2	100591-P-S-M	07/25/88	3	12684
V-66-T3	100577-P-S-M	07/25/88	3	12685
V-67-T3	100592-P-S-M	07/25/88	3	12693
W-259-T1	200425-P-S-M	07/26/88	3	12946
WB-9-1-T1	100972-P-S-M	08/04/88	3	14603
W-PIER 7-T4	200706-P-S-M	08/04/88	3	13399
W-PIER 12-S1	200687-P-S-M	08/04/88	3	13407
V-28-S10	200758-P-S-SW-C	08/06/88	3	13563
U-108-T2	101114-P-S-M	08/06/88	3	13619
U-97-T1	101129-P-S-M	08/09/88	3	13829
U-93-T2	101113-P-S-M	08/09/88	3	13830
Y-100-A-S2	200024-P-S-SW-R	05/16/88	3	10698
V-28-S12	200763-P-S-C	08/06/88	3	13583
V-28-S12	200763-P-S-L	08/06/88	3	13564
V-28-S11	200762-P-S-L	/ /	3	13561
W-163-E-T2	101462-P-S-M	12/16/88	3	16115
T-37-CB4	101465-P-S-M	12/16/88	3	16113
T-37-CB7	101468-P-S-M	12/16/88	3	16109
A-104-T2	100209-P-S-MAIN	06/01/88	4	11003
A-57-T1	100207-P-S-MAIN	06/01/88	4	11020
CEP-8-S2	100300-P-S-SW-R	06/27/88	4	11572
CEP-8-S2	100300-P-S-SW-L	06/29/88	4	11582
CEP-8-S2	100300-P-S-SW-C	06/29/88	4	11613
K-M1-S1	200059-P-S-SW-L	06/30/88	4	11662
K-M1-S1	200059-P-S-SW-C	06/30/88	4	11669
I-AA1-S1	200053-P-S-SW-R	06/30/88	4	11680
I-AA1-S1	200053-P-S-SW-L	06/30/88	4	11683
CA-179-T2	100554-P-S-M	07/15/88	4	11524
L-34-SW1	100645-P-S-SW-L	07/25/88	4	12640
K-BB1-S3	200069-P-S-SW-R	07/15/88	4	12061
H-9-S1	100404-P-S-SW-C	07/15/88	4	12105
G-29-C-T6	100352-P-S-M	07/15/88	4	12166
CEP-12-S2	100411-P-S-SW-L	07/15/88	4	12211
LP-23-S2	200323-P-S-M	07/21/88	4	12802

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-23-T2	200322-P-S-TH	07/22/88	4	12811
CEP-PIER 24-S7	200390-P-S-M	07/26/88	4	12923
CI-229-S2	200612-P-S-SW-C	08/03/88	4	13163
LP-5-CB1	100811-P-S-M	08/01/88	4	13218
LP-2-CB2	100794-P-S-M	08/04/88	4	13275
LP-3-CB2	100798-P-S-M	08/01/88	4	13235
LP-112-S3	200489-P-S-SW-M	08/02/88	4	13262
LP-1-TCC	200495-P-S-M	08/02/88	4	13264
LP-112-S7	200493-P-S-SW-R	08/02/88	4	13267
CEP-PIER 22-T4	200746-P-S-M	08/05/88	4	13520
LP-10-T1	101429-P-S-M	09/13/88	4	14643
P-SPARE-S1	200224-P-S-SW-C	07/15/88	4	12095
NH-139-T1	100371-P-S-M	07/15/88	4	12140
NH-139-S2	100373-P-S-SW-M	07/15/88	4	12150
N-19A-S1	200096-P-S-SW-L	07/15/88	4	12180
P-74-S1	200222-P-S-SW-C	07/15/88	4	12193
SP-85-B-S1	200359-P-S-SW-CENTER	07/22/88	4	12859
SP-280-S1	200367-P-S-SW-L	07/22/88	4	12868
SP-280-S1	200367-P-S-SW-C	07/22/88	4	12870
SP-89-S2	200454-P-S-SW-C	07/27/88	4	12967
SC-404-T3	200377-P-S-M	07/26/88	4	12901
P-61-S3	200620-P-S-SW-C	08/04/88	4	13324
P-61-S3	200620-P-S-SW-L	08/04/88	4	13325
NH-131-T1	101054-P-S-M	08/05/88	4	13485
NH-131-T2	101055-P-S-M	08/05/88	4	13486
SC-405-T2	101290-P-S-M	09/16/88	4	14097
NM-37-T1	101318-P-S-M	09/09/88	4	14511
W-181-S1	100100-P-S-SW-LEFT	05/02/88	4	10248
W-143-S14	100123-P-S-SW-RIGHT	05/02/88	4	10274
W-143-S21	100133-P-S-SW-MAIN	05/02/88	4	10279
X-221-S2	100150-P-S-SW-RIGHT	05/02/88	4	10302
W-315-S2	100049-P-S-SW-CENTER	04/28/88	4	10529
WB-23R-1-T1	100962-P-S-M	07/19/88	4	12373
WB-25R-T1	100966-P-S-M	07/19/88	4	12377
V-51-CB7	200244-P-S-CB-M	07/23/88	4	12604
V-28-S4	200267-P-S-SW-C	07/23/88	4	12621
V-28-S3	200266-P-S-SW-R	07/23/88	4	12622
X-353-S1	100337-P-S-SW-L	07/15/88	4	12163
U-6A-S1	100421-P-S-SW-L	07/15/88	4	12222
V-31-S1	200286-P-S-SW-L	07/15/88	4	12345

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
V-41-S1	200289-P-S-SW-R	07/15/88	4	12347
T-45-T6	100596-P-S-NL-TC	07/25/88	4	12664
V-58-S1	100586-P-S-SW-C	07/25/88	4	12681
V-88-T7	200308-P-S-M	07/25/88	4	12750
V-28-S9	200754-P-S-SW-R	08/05/88	4	13548
V-17-S1	200251-P-S-SW-C	08/06/88	4	13577
Y-182-S1	200029-P-S-SW-L	05/05/88	4	10704
V-28-S11	200762-P-S-C	08/06/88	4	13568
V-28-S11	200762-P-S-R	08/06/88	4	13572
V-28-S12	200763-P-S-R	08/06/88	4	13557
V-88-CB2	200875-P-S-M	09/16/88	4	14144
CEP-96-T5	100277-P-S-HVTC	04/28/88	5	10549
D-27-S1	200036-P-S-SW	05/02/88	5	10637
B-26-S2	200031-P-S-SW	05/02/88	5	10640
A-80-T3	100198-P-S-MAIN	06/01/88	5	11032
CEP-8-S3	100301-P-S-SW-R	06/27/88	5	11579
CEP-29-T1	100321-P-S-M	06/29/88	5	11612
K-M1-S1	200059-P-S-SW-R	06/30/88	5	11661
L-31-T1	100952-P-S-M	07/19/88	5	12034
H-9-S1	100404-P-S-SW-R	07/15/88	5	12078
CEP-206-S1	100346-P-S-SW	07/15/88	5	12174
CEP-PIER 24-S5	200393-P-S-M	07/26/88	5	12925
CEP-PIER 24-S8	200391-P-S-M	07/26/88	5	12932
LP-14-T9	100744-P-S-M	07/28/88	5	12989
CA-80-CB4	100873-P-S-M	07/28/88	5	13032
CA-80-CB1	100870-P-S-M	07/28/88	5	13043
CI-229-S2	200612-P-S-SW-L	08/02/88	5	13138
H-5-T1	200589-P-S-M	08/02/88	5	13149
CI-229-S3	200613-P-S-SW-C	08/03/88	5	13164
CI-229-S2	200612-P-S-SW-R	08/03/88	5	13173
LP-13-CB2	100771-P-S-M	08/01/88	5	13227
LP-2-CB1	100790-P-S-M	08/01/88	5	13234
LP-112-T3	100814-P-S-M	08/01/88	5	13237
LP-1-S1	100805-P-S-SW-R	08/02/88	5	13242
LP-112-S2	200488-P-S-SW-M	08/02/88	5	13252
CEP-PIER 22-T7	200749-P-S-M	08/05/88	5	13503
CEP-PIER 20-T1	200744-P-S-M	08/05/88	5	13519
CEP-154-T2	101066-P-S-M	08/05/88	5	13522
CEP-154-T1	101065-P-S-M	08/05/88	5	13525
CEP-154-T3	101067-P-S-M	08/05/88	5	13533

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-6-T4	200849-P-S-M	09/16/88	5	14106
CA-80-CB3	100872-P-S-M	07/28/88	5	13044
Q-6-S1	100019-P-S-SW-CENTER	05/02/88	5	10385
NH-88-T1	100398-P-S-M	07/15/88	5	12068
NH-11-S2	100378-P-S-SW-L	07/15/88	5	12112
NH-139-S1	100372-P-S-SW-M	07/15/88	5	12139
R-60-S1	200130-P-S-SW-C	07/15/88	5	12207
P-SPARE-T91	200221-P-S-M	07/15/88	5	12307
SP-280-S1	200367-P-S-SW-R	07/22/88	5	12869
SP-86-T2	200446-P-S-M	07/27/88	5	12965
SP-2-S1	200437-P-S-SW-R	07/27/88	5	12970
SP-15-T2	200466-P-S-M	08/03/88	5	13211
P-61-S1	200617-P-S-SW-L	08/04/88	5	13321
SP-208-T1	101149-P-S-M	08/09/88	5	13670
SDA-89-T3	101262-P-S-M	08/09/88	5	13740
NM-24-T1	101306-P-S-M	09/16/88	5	14501
NM-37-S1	101319-P-S-SW-L	09/09/88	5	14512
NM-37-S1	101319-P-S-SW-R	09/09/88	5	14513
NMC-B-T3	200802-P-S-M	09/16/88	5	14538
W-143-S18	100129-P-S-SW-RIGHT	05/02/88	5	10266
W-143-S17	100127-P-S-SW-MAIN	05/02/88	5	10269
X-221-S2	100150-P-S-SW-LEFT	05/02/88	5	10301
X-134-S1	100162-P-S-SW-LEFT	05/02/88	5	10329
X-79-T1	100178-P-S-MAIN	05/02/88	5	10341
W-280-S2	100058-P-S-SW	04/27/88	5	10517
W-384-T1	100053-P-S-MAIN	04/27/88	5	10525
Z-133-S2	100252-P-S-SW-RIGHT	04/29/88	5	10601
W-PIER 4-S3	200012-P-S-SW-LEFT	06/01/88	5	11009
X-358-S1	100195-P-S-SW	06/01/88	5	11014
X-358-CB5	100426-P-S-CB-M	07/15/88	5	12293
T-45-T6	100596-P-S-HV-TC	07/25/88	5	12653
V-66-T1	100575-P-S-M	07/25/88	5	12676
V-58-T1	100585-P-S-M	07/25/88	5	12695
W-143-S12	100121-P-S-SW-L	07/22/88	5	12842
U-97-T2	101130-P-S-M	08/09/88	5	13628
U-102-T2	101166-P-S-M	08/09/88	5	13844
W-143-S20	100132-P-S-SW-R	09/19/88	5	14188
Y-100-A-T2	200020-P-S-M	05/16/88	5	10706
T-37-CB5	101466-P-S-M	12/15/88	5	16083
CEP-8-S3	100301-P-S-SW-C	06/27/88	6	11558

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-193-CB2	100281-P-S-OCB-M	06/29/88	6	11584
G-29-C-S2	100354-P-S-SW-L	07/15/88	6	12160
G-29-C-S4	100356-P-S-SW-C	07/15/88	6	12162
CEP-183-T1	100339-P-S-M	07/15/88	6	12170
LF-60-T1	100600-P-S-M	07/25/88	6	12667
LF-59-T1	200379-P-S-T	07/26/88	6	12910
CI-229-S3	200613-P-S-SW-L	08/03/88	6	13172
LP-112-T15	100826-P-S-M	08/01/88	6	13215
L-31-T2	100953-P-S-M	08/04/88	6	13310
K-BB1-T7	200625-P-S-M	08/04/88	6	13315
CEP-PIER 20-T4	200752-P-S-M	08/05/88	6	13505
CEP-PIER 22-T1	200743-P-S-M	08/05/88	6	13518
FRP-39-T1	101091-P-S-M	08/05/88	6	13545
CEP-96-T11	101488-P-S-M	12/16/88	6	16120
Q-21-S3	100008-P-S-SW	04/04/88	6	10504
NH-20A-T1	100438-P-S-M	07/23/88	6	12585
P-SPARE-T40	200170-P-S-M	07/15/88	6	12230
Q-14-CB2	100030-P-S-CBB-2	07/25/88	6	12728
SP-236-S1	200408-P-S-SW-R	07/22/88	6	12882
P-61-S3	200620-P-S-SW-R	08/04/88	6	13311
P-61-S1	200617-P-S-SW-R	08/04/88	6	13318
M-10-T1	100983-P-S-M	08/04/88	6	13388
NH-P35-AA-T2	101121-P-S-M	08/06/88	6	13608
NM-59-A-T3	101300-P-S-M	09/09/88	6	14509
NMC-B-T1	200800-P-S-M	09/16/88	6	14527
NMC-C-T1	200811-P-S-M	09/12/88	6	14601
X-221-S2	100150-P-S-SW-CENTER	05/02/88	6	10300
Z-103-S1	100245-P-S-SW-RIGHT	05/02/88	6	10613
Z-93-S2	100260-P-S-SW-CENTER	04/28/88	6	10588
W-PIER 4-S4	200006-P-S-SW-CENTER	06/01/88	6	11023
V-43-T3	200277-P-S-M	07/23/88	6	12611
V-28-S3	200266-P-S-SW-L	07/23/88	6	12618
V-28-S4	200267-P-S-SW-L	07/23/88	6	12623
V-28-S4	200267-P-S-SW-R	07/23/88	6	12631
V-36-T2	200293-P-S-M	07/23/88	6	12636
V-58-S1	100586-P-S-SW-R	07/25/88	6	12686
V-57-S1	100584-P-S-SW-R	07/25/88	6	12687
V-28-S9	200754-P-S-SW-C	08/05/88	6	13547
V-28-S10	200758-P-S-SW-L	08/05/88	6	13549
U-121-T2	101134-P-S-M	08/06/88	6	13615

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
U-6A-T3	101187-P-S-M	08/09/88	6	13834
Y-100-A-S3	200025-P-S-SW-R	05/16/88	6	10703
T-37-T4	101471-P-S-M	12/16/88	6	16118
T-37-CB3	101502-P-S-M	12/16/88	6	16119
CEP-156-T2	100315-P-S-TH	06/29/88	7	11622
G-29-C-T7	100358-P-S-M	07/15/88	7	12141
G-29-C-T5	100351-P-S-M	07/15/88	7	12171
CEP-PIER 24-T4	200389-P-S-M	07/26/88	7	12926
LF-59-S3	200383-P-S-M	07/26/88	7	12909
LF-59-T2	200384-P-S-M	07/26/88	7	12911
LAG-42-S1	200573-P-S-SW-R	07/28/88	7	13048
CI-82-CB1	200556-P-S-CB-M	07/28/88	7	13060
LP-12-CB2	100776-P-S-M	08/01/88	7	13229
LP-112-S6	200492-P-S-SW-R	08/02/88	7	13250
LAG-42-S1	200573-P-S-SW-L	08/09/88	7	13737
A-104-CB2	100215-P-S-OCB	05/16/88	7	10707
LP-209-T6	200834-P-S-M	09/13/88	7	14662
LP-GCA-T1	200889-P-S-M	09/21/88	7	14180
Q-84-S1	100041-P-S-SW-LEFT	05/02/88	7	10352
Q-84-S1	100041-P-S-RIGHT	04/28/88	7	10548
N-26A-S1	200087-P-S-SW	06/30/88	7	11667
NH-11-S1	100377-P-S-SW-L	07/15/88	7	12122
SEW-03-CB1	100565-P-S-CB-L	07/25/88	7	12770
SP-215-S1	100658-P-S-M	07/26/88	7	12888
SP-58-T3	100661-P-S-M	07/26/88	7	12891
SP-356-S1	200497-P-S-SW-M	08/02/88	7	13251
P-61-S1	200617-P-S-SW-C	08/04/88	7	13316
SDA-205-T2	101244-P-S-M	08/09/88	7	13757
SC-319-T1	101286-P-S-M	09/16/88	7	14095
SC-401-T1	101294-P-S-M	09/16/88	7	14096
SC-401-T2	101295-P-S-M	09/16/88	7	14089
NM-93-S1	101325-P-S-SW-R	09/09/88	7	14515
SP-120-T1	101418-P-S-M	09/16/88	7	14129
P-SPARE-T95	200839-P-S-M	09/13/88	7	14651
SDA-232-CB6	101482-P-S-M	12/16/88	7	16157
W-163-E-CB6	100098-P-S-CB-MAIN	05/02/88	7	10238
W-135-T2	100113-P-S-MAIN	05/02/88	7	10258
W-143-S12	100121-P-S-SW-RIGHT	05/02/88	7	10273
W-143-S20	100132-P-S-SW-CENTER	05/02/88	7	10278
W-143-S10	100118-P-S-SW-CENTER	05/02/88	7	10280

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
X-132-T5	100156-P-S-MAIN	05/02/88	7	10315
WB-14L-4-4-T1	100956-P-S-M	07/19/88	7	12036
V-28-S5	200268-P-S-SW-C	07/23/88	7	12625
T-45-T5	100597-P-S-LTC	07/25/88	7	12665
T-45-T5	100597-P-S-M	07/25/88	7	12670
Y-182-T3	100760-P-S-M	07/28/88	7	12992
W-PIER 2-T6	200537-P-S-M	07/28/88	7	13019
X-72-CB1	100841-P-S-M	08/04/88	7	13285
V-28-S8	200753-P-S-SW-R	08/05/88	7	13551
V-146-S1	200764-P-S-SW-C	08/05/88	7	13554
V-146-S1	200764-P-S-SW-R	08/06/88	7	23569
W-315-T2	200772-P-S-M	08/06/88	7	13601
V-117-T1	101552-P-S-M	12/13/88	7	15957
D-27-A-S1	200037-P-S-SW	05/02/88	8	10629
B-31X-T1	200027-P-S-MAIN	05/02/88	8	10631
CEP-96-T6	100276-P-S-HVTC	04/28/88	8	10560
A-80-S1	100200-P-S-SW-LEFT	06/01/88	8	11019
CEP-156-T1	100314-P-S-TH	06/29/88	8	11600
CEP-6-T1	100325-P-S-M	06/29/88	8	11604
I-AA1-S2	200054-P-S-SW-L	06/30/88	8	11677
L-31-T3	100954-P-S-M	07/19/88	8	12035
L-34-SW1	100645-P-S-SW-R	07/25/88	8	12638
K-BB1-S3	200069-P-S-SW-L	07/15/88	8	12066
H-6H-S1	100402-P-S-SW-R	07/15/88	8	12108
LP-59-S1	200313-P-S-M	07/21/88	8	12801
LP-20-T1	200316-P-S-M	07/22/88	8	12808
CEP-PIER 24-T4	200389-P-S-M-TH	07/26/88	8	12921
LP-112-T9	100820-P-S-M	08/01/88	8	13214
LP-14-CB1	100767-P-S-M	08/01/88	8	13226
FRP-42-T1	101098-P-S-M	08/06/88	8	13621
LP-23-T1	200320-P-S-TH	07/22/88	8	12809
SDA-82.5-T1	100945-P-S-M	07/19/88	8	12029
NH-20A-S1	100439-P-S-SW-R	07/23/88	8	12581
NH-28-T1	100394-P-S-M	07/15/88	8	12071
S-33-T1	200116-P-S-MAIN	07/15/88	8	12192
P-SPARE-T32	200162-P-S-M	07/15/88	8	12243
SP-352-A-S1	100663-P-S-SW-C	07/26/88	8	12893
SC-404-T2	200376-P-S-M	07/26/88	8	12915
SP-89-S2	200454-P-S-SW-L	07/27/88	8	12969
Q-76-T3	100879-P-S-M	07/28/88	8	13021

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
NH-P35-AA-T3	101122-P-S-M	08/06/88	8	13612
SC-319-T2	101287-P-S-M	09/16/88	8	14094
NM-4-T1	101305-P-S-M	09/09/88	8	14504
NM-14-T1	101311-P-S-M	09/09/88	8	14506
SP-30-T4	101334-P-S-M	09/12/88	8	14556
SP-199-T1	101335-P-S-M	09/12/88	8	14541
Z-103-S1	100245-P-S-SW-CENTER	05/02/88	8	10614
V-28-S5	200268-P-S-SW-R	07/23/88	8	12624
V-36-S1	200295-P-S-SW-C	07/15/88	8	12340
V-36-T1	200292-P-S-M	07/15/88	8	12341
T-45-T6	100596-P-S-LTC-LOWER	07/25/88	8	12652
T-45-T5	100597-P-S-LTC-UPPER	07/25/88	8	12661
V-88-S3	200298-P-S-SW-C	07/25/88	8	12740
WB-26L-C-T1	100974-P-S-M	08/04/88	8	13328
V-28-S8	200753-P-S-SW-C	08/05/88	8	13537
V-28-S8	200753-P-S-SW-L	08/05/88	8	13552
Y-100-A-S4	200026-P-S-SW-C	05/16/88	8	10705
W-163-E-T3	101463-P-S-M	12/15/88	8	16082
BEN-171-T2	100535-P-S-M	07/15/88	9	11956
LF-59-T2	200384-P-S-T	07/26/88	9	12916
CEP-PIER 24-T3	200392-P-S-M	07/26/88	9	12922
CEP-PIER 25-S4	200369-P-S-M	07/26/88	9	12897
LAG-42-S1	200573-P-S-SW-C	07/28/88	9	13007
A-21-T2	100892-P-S-M	07/28/88	9	13038
HEW-23-T3	101028-P-S-M	08/04/88	9	13429
DEP-20-CB1	101534-P-S-CB-B	12/14/88	9	16136
LP-12-S1	100775-P-S-SW-RIGHT	03/09/89	9	17235
NH-20A-S1	100439-P-S-SW-C	07/23/88	9	12564
NH-19-T1	100375-P-S-M	07/15/88	9	12115
P-SPARE-T90	200220-P-S-M	07/15/88	9	12298
P-4-S1	200232-P-S-SW-C	07/15/88	9	12320
NH-159-CB3	200629-P-S-CB-M	08/09/88	9	13763
SP-85-CB1	101139-P-S-M	08/09/88	9	13675
NMC-D-T2	200798-P-S-M	09/09/88	9	14533
SP-85-T3	101138-P-S-M	08/09/88	9	14914
P-26-T3	101456-P-S-M	12/15/88	9	16088
W-163-EE-T1	100099-P-S-TC	05/02/88	9	10237
W-143-S16	100126-P-S-SW-RIGHT	05/02/88	9	10267
W-PIER 2-S2	100146-P-S-SW-LEFT	05/02/88	9	10296
X-373-S3	100193-P-S-SW-LEFT	05/02/88	9	10346

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Z-309-T9	100234-P-S-MAIN	05/02/88	9	10634
Z-194-S1	100266-P-S-SW-CENTER	04/29/88	9	10595
W-PIER 4-S1	200010-P-S-SW-RIGHT	06/01/88	9	10996
W-PIER 4-T10	200015-P-S-MAIN	06/01/88	9	11010
V-28-T10	200281-P-S-M	07/23/88	9	12616
X-353-S1	100337-P-S-SW-C	07/15/88	9	12153
V-41-S1	200289-P-S-SW-L	07/15/88	9	12348
T-45-T6	100596-P-S-LTC-UPPER	07/25/88	9	12655
V-88-T2	200302-P-S-M	07/25/88	9	12756
W-PIER 7-T3	200704-P-S-M	08/04/88	9	13409
U-6A-T2	101186-P-S-M	08/09/88	9	13836
X-358-T4	101474-P-S-M	12/16/88	9	16121
I-AA1-S3	200055-P-S-SW-R	06/30/88	10	11682
K-BB1-S3	200069-P-S-SW-C	07/15/88	10	12065
CEP-201-S1	100342-P-S-SW	07/15/88	10	12172
CA-CENT-SUB-T1	100725-P-S-LTC	07/27/88	10	12961
LF-38-T1	100860-P-S-M	07/28/88	10	13028
LP-112-T11	100822-P-S-M	08/01/88	10	13221
CEP-PIER 20-T2	200745-P-S-M	08/05/88	10	13504
CEP-96-T12	101489-P-S-M	12/16/88	10	16105
LP-12-S1	100775-P-S-SW-LEFT	03/09/89	10	17236
R-43-S1	200105-P-S-SW-R	07/15/88	10	12102
NH-200-T1	100361-P-S-M	07/15/88	10	12151
N-19B-S1	200094-P-S-SW	07/15/88	10	12182
SDA-318-T1	200125-P-S-MAIN	07/15/88	10	12201
SEW-01-CB1	100559-P-S-CB-C	07/25/88	10	12760
SP-58-T2	100660-P-S-M	07/26/88	10	12890
SP-241-S1	200417-P-S-SW-M	07/26/88	10	12939
SP-2-T4	200411-P-S-M	07/26/88	10	12943
SP-2-S1	200437-P-S-SW-L	07/27/88	10	12968
SP-93-S1	200476-P-S-SW-L	08/01/88	10	13213
SC-411-T1	200725-P-S-M	08/05/88	10	13489
NMC-B-T2	200801-P-S-M	09/16/88	10	14535
W-PIER 2-T8	100143-P-S-MAIN	05/02/88	10	10307
W-7-T3	100060-P-S-MAIN	04/04/88	10	10495
Z-194-S1	100266-P-S-SW-RIGHT	04/29/88	10	10605
Z-103-S1	100245-P-S-SW-LEFT	05/02/88	10	10615
Z-186-S1	100256-P-S-SW-MAIN	04/29/88	10	10600
X-358-T1	100194-P-S-TC	06/01/88	10	11012
V-43-S1	200279-P-S-SW-L	07/23/88	10	12615

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
V-41-S1	200289-P-S-SW-C	07/15/88	10	12351
V-51-T5	101538-P-S-M	12/15/88	10	16061
D-LTG-T1	200038-P-S-MAIN	05/02/88	11	10628
A-123-S1	100219-P-S-SW-MAIN	05/02/88	11	10646
I-AA1-S2	200054-P-S-SW-C	06/30/88	11	11663
I-AA1-S3	200055-P-S-SW-C	06/30/88	11	11684
LP-121-T1	200338-P-S-M	07/22/88	11	12833
A-3-T2	100881-P-S-M	07/28/88	11	13011
LAG-105-T1	200572-P-S-M	08/04/88	11	13270
LP-1-CB1	100806-P-S-M	08/02/88	11	13241
LP-SW-121-S1	100808-P-S-M	08/02/88	11	13244
LP-1-CB2	100807-P-S-M	08/02/88	11	13246
CEP-PIER 20-T3	200751-P-S-M	08/05/88	11	13517
A-104-T10	101506-P-S-M	12/13/88	11	15979
A-104-T11	101507-P-S-M	12/14/88	11	16139
A-104-T12	101508-P-S-M	12/13/88	11	15933
LP-12-S1	100775-P-S-SW-CENTER	03/09/89	11	17237
NH-20A-S1	100439-P-S-SW-L	07/23/88	11	12578
M-110-S2	200099-P-S-SW-C	07/15/88	11	12104
R-60-T1	200129-P-S-MAIN	07/15/88	11	12205
P-1-CB14-A	100636-P-S-CB-M	07/25/88	11	12649
SP-11-S1	100664-P-S-SW-R	07/22/88	11	12880
SP-352-A-S1	100663-P-S-SW-L	07/26/88	11	12889
SP-2-T7	200440-P-S-M	07/27/88	11	12960
SC-401-T3	101296-P-S-M	09/16/88	11	14088
SP-113-T2	101405-P-S-M	09/13/88	11	14695
NMC-C-T3	200813-P-S-M	09/12/88	11	14596
X-13-A-S1	100175-P-S-SW-CENTER	05/02/88	11	10336
W-315-S1	100048-P-S-SW	04/04/88	11	10500
Z-194-S1	100266-P-S-SW-LEFT	04/29/88	11	10602
V-28-S5	200268-P-S-SW-L	07/23/88	11	12629
T-37-CB2	200123-P-S-M	07/01/88	11	12195
V-31-S1	200286-P-S-SW-C	07/15/88	11	12349
V-88-T6	200300-P-S-M	07/25/88	11	12729
V-91-S11	200312-P-S-SW-M	07/25/88	11	12762
Y-182-T2	100759-P-S-M	07/28/88	11	12997
V-28-S9	200754-P-S-SW-L	08/05/88	11	13546
A-80-T4	100199-P-S-MAIN	06/01/88	12	11015
BEN-171-T1	100534-P-S-M	07/15/88	12	11955
K-BB1-S1	200066-P-S-SW-R	07/15/88	12	12053

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
LP-20-S2	200319-P-S-M	07/21/88	12	14637
CA-80-CB5	100874-P-S-M	07/28/88	12	13034
K-BB1-T5	200623-P-S-M	08/03/88	12	13183
LP-1-S1	100805-P-S-SW-C	08/02/88	12	13243
CI-PPS-S1	200517-P-S-SW-C	08/02/88	12	13259
HEW-23-T2	101027-P-S-M	08/04/88	12	13435
CEP-337-T1	101071-P-S-M	08/05/88	12	13530
Q-1-T3	100040-P-S-MAIN	05/02/88	12	10393
Q-6-S1	100019-P-S-SW-LEFT	05/02/88	12	10358
P-1-CB7	100629-P-S-CB-M	07/25/88	12	12645
NH-88-S1	100399-P-S-SW-R	07/15/88	12	12088
SEW-01-CB1	100559-P-S-CB-L	07/25/88	12	12761
SP-35-S1	100668-P-S-M	07/22/88	12	12850
SP-86-T3	200447-P-S-M	07/27/88	12	12963
SP-2-S1	200437-P-S-SW-C	08/02/88	12	12974
SDA-232-CB3	101483-P-S-M	12/16/88	12	16103
X-13-A-S1	100175-P-S-SW-LEFT	05/02/88	12	10333
X-373-S3	100193-P-S-SW-CENTER	05/02/88	12	10379
Z-103-S2	100246-P-S-SW-CENTER	05/02/88	12	10616
Z-93-S1	100259-P-S-SW-CENTER	04/28/88	12	10587
Z-93-S1	100259-P-S-SW-LEFT	04/29/88	12	10593
Z-328-S1	100258-P-S-SW-MAIN	04/29/88	12	10599
W-PIER 4-S3	200012-P-S-SW-RIGHT	06/01/88	12	11011
U-SW-226-S1	100431-P-S-SW-M	07/23/92	12	12586
W-315-T1	200771-P-S-M	08/06/88	12	13591
CEP-41-T1	100336-P-S-M	06/29/88	13	11602
I-AA1-S2	200054-P-S-SW-R	06/30/88	13	11686
BEN-171-T3	100536-P-S-M	07/15/88	13	11957
I-AA1-S3	200055-P-S-SW-L	07/15/88	13	12042
K-BB1-S1	200066-P-S-SW-L	07/15/88	13	12056
LF-62-T3	100604-P-S-M	07/25/88	13	12669
HEW-23-T1	101026-P-S-M	07/31/88	13	13432
NH-88-S1	100399-P-S-SW-L	07/15/88	13	12072
NH-11-S1	100377-P-S-SW-R	07/15/88	13	12118
SP-86-T1	200445-P-S-M	07/27/88	13	12962
NH-P35-AA-T1	101120-P-S-M	08/06/88	13	13613
SP-85-T1	101136-P-S-M	08/09/88	13	13671
NM-93-S1	101325-P-S-SW-L	09/09/88	13	14516
NM-75-T2	101341-P-S-M	09/12/88	13	14561
NM-122-T1	101342-P-S-M	09/12/88	13	14540

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
W-143-S16	100126-P-S-SW-CENTER	05/02/88	13	10268
X-221-S1	100149-P-S-SW-LEFT	05/02/88	13	10289
Z-357-S1	100239-P-S-SW-CENTER	04/29/88	13	10611
W-PIER 4-S4	200006-P-S-SW-LEFT	06/01/88	13	11022
V-28-S3	200266-P-S-SW-C	07/23/88	13	12634
V-88-S10	200309-P-S-SW-R	07/25/88	13	12763
Z-107-T2	200459-P-S-M	07/28/88	13	13000
T-37-T3	101470-P-S-M	12/15/88	13	16089
CEP-6-S1	100327-P-S-SW-L	06/29/88	14	11596
CEP-6-S1	100327-P-S-SW-C	06/29/88	14	11627
LF-62-T1	100602-P-S-M	07/25/88	14	12671
CEP-PIER 24-T1	200395-P-S-T	07/26/88	14	12927
FRP-84-T2	101111-P-S-M	08/04/88	14	13850
CEP-8-T4	101081-P-S-M	08/06/88	14	13556
CA-7-LIFT-T1	101224-P-S-M	08/09/88	14	13711
CEP-PIER 23-T5	200784-P-S-M	08/09/88	14	13751
A-21-T3	100893-P-S-M	07/28/88	14	13040
NH-10-T2	100440-P-S-M	07/23/88	14	12563
NH-88-S1	100399-P-S-SW-C	07/15/88	14	12107
N-21-S1	200091-P-S-SW	07/15/88	14	12181
SP-85-B-S1	200359-P-S-SW-RIGHT	07/22/88	14	12858
SP-373-T1	100672-P-S-M	07/22/88	14	12884
SP-2-T5	200438-P-S-M	07/27/88	14	12964
X-373-S2	100192-P-S-SW-RIGHT	05/02/88	14	10246
X-13-A-S1	100175-P-S-SW-RIGHT	05/02/88	14	10319
X-26-T2	100185-P-S-MAIN	05/02/88	14	10350
Z-103-S2	100246-P-S-SW-LEFT	05/02/88	14	10627
Z-140-S2	100264-P-S-SW-CENTER	04/29/88	14	10594
W-PIER 2-T7	200538-P-S-M	07/28/88	14	13018
U-51-CB7	101548-P-S-M	12/15/88	14	16079
I-AA1-T1	200047-P-S-M	06/30/88	15	11664
I-AA1-T2	200048-P-S-M	06/30/88	15	11678
G-29-C-S1	100353-P-S-SW-L	07/15/88	15	12145
Q-6-S1	100019-P-S-RIGHT	04/28/88	15	10539
SP-58-S1	100662-P-S-SW-C	07/22/88	15	12873
SP-10-T1	100665-P-S-M	07/26/88	15	12886
SP-346-S1	100867-P-S-SW-C	07/28/88	15	13022
NH-44-T2	200720-P-S-M	08/05/88	15	13479
NH-44-T3	200721-P-S-M	08/05/88	15	13480
NH-44-T1	200719-P-S-M	08/05/88	15	13484

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
Z-93-S1	100259-P-S-SW-RIGHT	04/28/88	15	10589
V-146-S1	200764-P-S-SW-L	08/05/88	15	13550
X-358-T3	101473-P-S-M	12/15/88	15	16090
E-25-S1	200040-P-S-SW-LEFT	05/02/88	16	10636
I-AA1-T3	200049-P-S-M	06/30/88	16	11668
LF-54-T1	100616-P-S-M	07/25/88	16	12651
LP-4-S1	100781-P-S-SW-C	08/01/88	16	13228
LP-112-S4	200490-P-S-M	08/02/88	16	13249
NH-124-S1	100390-P-S-SW-R	07/15/88	16	12137
P-26-T1	100357-P-S-LTC	07/15/88	16	12152
SP-85-A-T1	200355-P-S-M	07/22/88	16	12864
SP-352-A-S1	100663-P-S-SW-R	07/22/88	16	12879
SP-58-S1	100662-P-S-SW-L	07/26/88	16	12899
M-3-T1	100980-P-S-M	08/04/88	16	13398
SDA-229-CB2	200904-P-S-CB-CENTER	09/13/88	16	14234
X-373-S2	100192-P-S-SW-CENTER	05/02/88	16	10303
U-SW-213-S1	100433-P-S-SW-M	07/23/88	16	12587
CEP-5-S1	100332-P-S-SW-C	06/29/88	17	11599
LF-59-S2	100618-P-S-SW	07/25/88	17	12656
A-3-T1	100880-P-S-M	07/28/88	17	13012
CEP-PIER 22-T2	200766-P-S-M	08/06/88	17	13578
A-41-T1	200502-P-S-M	08/04/88	17	14917
M-110-T1	200100-P-S-M	07/15/88	17	12103
NH-124-S1	100390-P-S-SW-L	07/15/88	17	12135
NH-11-S1	100377-P-S-SW-C	07/15/88	17	12147
M-110-S1	200098-P-S-SW-R	07/15/88	17	12188
M-110-S1	200098-P-S-SW-L	07/15/88	17	12189
SP-35-T1	100669-P-S-M	07/28/88	17	12881
NM-74-T1	101302-P-S-M	09/09/88	17	14510
SP-120-S1	200485-P-S-SW-R	/ /	17	13189
X-373-S2	100192-P-S-SW-LEFT	05/02/88	17	10382
Z-357-S1	100239-P-S-SW-LEFT	05/02/88	17	10623
Z-86-S1	100238-P-S-SW-CENTER	05/02/88	17	10626
Z-103-S3	100247-P-S-SW-CENTER	05/02/88	17	10619
T-45-T7	100598-P-S-M	07/25/88	17	12654
V-88-S3	200298-P-S-SW-L	07/25/88	17	12747
V-88-T5	200297-P-S-M	07/25/88	17	12754
Z-93-T1	100916-P-S-M	08/02/88	17	13135
W-PIER 7-T2	200702-P-S-M	08/04/88	17	13418
CEP-6-S1	100327-P-S-SW-R	06/29/88	18	11585

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CEP-201-T1	100341-P-S-TH	07/15/88	18	12164
LP-14-T8	100743-P-S-M	07/27/88	18	12980
A-81-T4	100890-P-S-M	07/28/88	18	13023
CI-98-S1	200546-P-S-SW-C	07/28/88	18	13056
CI-98-S1	200546-P-S-SW-R	07/28/88	18	13058
LP-180-T1	200498-P-S-M	08/02/88	18	13256
P-26-T1	100357-P-S-M	07/15/88	18	12161
SP-89-S2	200454-P-S-SW-R	07/27/88	18	12959
SP-58-S1	100662-P-S-SW-R	07/26/88	18	12900
SP-62-S1	200481-P-S-SW-L	08/03/88	18	13194
SP-62-S1	200481-P-S-SW-C	08/03/88	18	13196
N-19A-T3	200679-P-S-M	08/04/88	18	13377
SP-85-T2	101137-P-S-M	08/09/88	18	13685
X-373-S3	100193-P-S-SW-RIGHT	05/02/88	18	10294
X-221-S1	100149-P-S-SW-RIGHT	05/02/88	18	10305
X-221-S1	100149-P-S-SW-CENTER	05/02/88	18	10306
Z-133-T2	100250-P-S-MAIN	04/29/88	18	10598
Z-86-S1	100238-P-S-SW-RIGHT	05/02/88	18	10622
U-51-T1	100450-P-S-M	07/23/88	18	12582
U-51-T1	100450-P-S-LTC	07/23/88	18	12583
V-88-S3	200298-P-S-SW-R	07/25/88	18	12755
Z-93-T3	100918-P-S-M	08/02/88	18	13136
E-25-S1	200040-P-S-SW-RIGHT	05/02/88	19	10638
A-81-T2	100888-P-S-M	07/28/88	19	13010
LAG-42-S2	200574-P-S-SW-L	07/28/88	19	13064
LAG-110-T1	200576-P-S-M	07/29/88	19	13079
LP-4-S1	100781-P-S-SW-L	08/01/88	19	13230
CI-146-S1	200530-P-S-SW-C	08/04/88	19	13293
CI-141-S1	200521-P-S-SW-C	08/04/88	19	13297
CI-145-S1	200527-P-S-SW-L	08/04/88	19	13300
A-48-S1	100224-P-S-L	05/16/88	19	10695
NH-124-S1	100390-P-S-SW-C	07/15/88	19	12134
SP-12-T1	100670-P-S-M	07/22/88	19	12875
SP-381-T2	100679-P-S-M	07/22/88	19	12878
SP-2-T6	200439-P-S-M	07/27/88	19	12966
SP-120-S1	200485-P-S-SW-L	08/03/88	19	13192
N-19A-T2	200678-P-S-M	08/04/88	19	13365
SP-149-T1	101367-P-S-M	09/13/88	19	14638
SP-149-T2	101368-P-S-M	09/13/88	19	14636
W-176-S1	100077-P-S-SW-LEFT	05/02/88	19	10219

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
X-368-T1	100189-P-S-MAIN	05/02/88	19	10380
W-176-S1	100077-P-S-SW-CENTER	05/02/88	19	10216
W-193-S1	100072-P-S-CENTER	04/27/88	19	10522
Z-140-S2	100264-P-S-SW-LEFT	04/28/88	19	10590
Z-140-S2	100264-P-S-SW-RIGHT	04/28/88	19	10591
U-93-T1	100444-P-S-M	07/23/88	19	12571
T-45-T8	100599-P-S-M	07/25/88	19	12660
G-29-C-S1	100353-P-S-SW-C	07/15/88	20	12154
CEP-12-S1	100410-P-S-SW-L	07/15/88	20	12214
CEP-PIER 24-S10	200388-P-S-M	07/26/88	20	12930
LP-169-T1	100864-P-S-M	07/28/88	20	13025
CI-142-S1	200552-P-S-SW-L	07/28/88	20	13063
LAG-42-S3	200575-P-S-SW-R	08/04/88	20	13272
CI-65-S2	200601-P-S-SW-R	08/02/88	20	13143
LAG-42-S2	200574-P-S-SW-CENTER	08/04/88	20	16603
P-1-T8	100644-P-S-M	07/25/88	20	12644
SP-11-S1	100664-P-S-SW-C	07/22/88	20	12885
NH-159-CB1	200627-P-S-CB-L	08/03/88	20	13181
SP-120-S1	200485-P-S-SW-C	08/03/88	20	13191
SP-34-T1	200478-P-S-M	08/03/88	20	13197
M-3-T3	100982-P-S-M	08/04/88	20	13387
W-143-S20	100132-P-S-SW-LEFT	05/02/88	20	10275
W-176-S1	100077-P-S-RIGHT	04/27/88	20	10513
W-193-S1	100072-P-S-LEFT	04/28/88	20	10534
Z-103-S3	100247-P-S-SW-RIGHT	05/02/88	20	10617
Z-103-S3	100247-P-S-SW-LEFT	05/02/88	20	10618
V-51-CB8	200245-P-S-CB-M	07/23/88	20	12603
W-PIER 2-CB1	200542-P-S-M	07/28/88	20	13016
Z-93-T2	100917-P-S-M	08/02/88	20	13137
Y-320-T1	200018-P-S-M	05/10/88	20	10677
A-48-T2	100223-P-S-MAIN	05/02/88	21	10645
CEP-8-S1	100299-P-S-SW-C	06/27/88	21	11563
CEP-156-T2	100315-P-S-M	06/29/88	21	11603
K-BB1-S4	200106-P-S-SW-R	07/15/88	21	12083
CEP-12-S1	100410-P-S-SW-C	07/15/88	21	12213
I-H-T1	200579-P-S-M	07/28/88	21	13050
CI-142-S1	200552-P-S-SW-C	07/28/88	21	13062
LAG-105-T1	200572-P-S-LTC	08/04/88	21	13271
CI-88-CB1	200780-P-S-M	08/04/88	21	13374
Q-21-T4	100004-P-S-THROAT	04/27/88	21	10520

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-72-T8	100472-P-S-LTC	07/23/88	21	12596
SP-34-S1	200479-P-S-SW-C	08/03/88	21	13203
M-3-T2	100981-P-S-M	08/04/88	21	13390
SP-71-T2	101141-P-S-M	08/09/88	21	13674
N-19A-T4	200680-P-S-M	08/04/88	21	13323
W-176-S2	100078-P-S-CENTER	04/27/88	21	10515
W-176-S3	100079-P-S-CENTER	04/27/88	21	10524
V-88-T1	200306-P-S-M	07/25/88	21	12753
X-136-CB1	100857-P-S-M	08/02/88	21	13248
E-25-S1	200040-P-S-SW-CENTER	05/02/88	22	10635
CEP-8-S1	100299-P-S-SW-R	06/27/88	22	11562
CEP-S-H-35-S1	100306-P-S-SW-R	06/29/88	22	11581
CEP-192-T1	100294-P-S-TH	06/29/88	22	11587
CEP-8-S1	100299-P-S-SW-L	06/29/88	22	11591
K-BB1-S2	200068-P-S-SW-R	07/15/88	22	12054
K-BB1-S2	200068-P-S-SW-C	07/15/88	22	12057
CEP-PIER 25-T2	200368-P-S-M	07/26/88	22	12903
CI-142-S1	200552-P-S-SW-R	07/28/88	22	13057
LAG-42-S2	200574-P-S-SW-R	08/04/88	22	13269
CI-144-S1	200608-P-S-SW-C	08/02/88	22	13142
CI-144-S1	200608-P-S-SW-R	08/03/88	22	13174
LP-112-T16	100827-P-S-M	08/01/88	22	13217
CI-146-S1	200530-P-S-SW-L	08/04/88	22	13287
CI-132-S1	200523-P-S-SW-C	08/04/88	22	13301
A-48-S1	100224-P-S-R	05/16/88	22	10696
A-104-T8	101504-P-S-M	12/13/88	22	15999
W-176-S3	100079-P-S-LEFT	05/23/88	22	10512
W-176-S4	100081-P-S-SW-CENTER	05/02/88	22	10236
W-176-S2	100078-P-S-SW-LEFT	05/02/88	22	10362
Z-357-S1	100239-P-S-SW-RIGHT	05/02/88	22	10633
U-51-T1	100450-P-S-LTC-L	07/23/88	22	12588
T-37-T1	200121-P-S-MAIN	07/15/88	22	12197
W-176-S3	100079-P-S-SW-R	04/28/88	22	10215
CEP-5-S1	100332-P-S-SW-L	06/29/88	23	11615
K-BB1-S4	200106-P-S-SW-L	07/15/88	23	12074
G-29-C-S3	100355-P-S-SW-R	07/15/88	23	12144
A-21-T1	100891-P-S-M	07/28/88	23	13039
LAG-42-S3	200575-P-S-SW-L	08/04/88	23	13273
CI-137-S1	200519-P-S-SW-R	08/01/88	23	13225
CI-147-S1	200532-P-S-SW-L	08/04/88	23	13291

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
CI-146-S1	200530-P-S-SW-R	08/04/88	23	13305
HEW-51-T1	101078-P-S-M	08/05/88	23	13529
A-104-T9	101505-P-S-M	12/14/88	23	15915
DEP-20-T1	101535-P-S-M	12/14/88	23	16134
SP-11-S1	100664-P-S-SW-L	07/26/88	23	12887
SP-85-B-S1	200359-P-S-SW-L	07/26/88	23	13132
W-193-S1	100072-P-S-SW-RIGHT	05/02/88	23	10218
W-176-S5	100082-P-S-SW-RIGHT	05/02/88	23	10226
W-176-S5	100082-P-S-SW-CENTER	05/02/88	23	10234
Z-103-S2	100246-P-S-SW-RIGHT	05/02/88	23	10632
CEP-S-H-35-S1	100306-P-S-SW-C	06/27/88	24	11573
CEP-S-H-35-S1	100306-P-S-SW-L	06/27/88	24	11574
CI-65-S2	200601-P-S-SW-C	08/02/88	24	13153
LP-112-T7	100818-P-S-M	08/01/88	24	13239
LP-5-T2	100810-P-S-M	08/02/88	24	13245
CI-132-S1	200523-P-S-SW-L	08/04/88	24	13296
CI-141-S1	200521-P-S-SW-L	08/04/88	24	13299
FRP-39A-T1	101100-P-S-M	08/06/88	24	13618
SP-149-T3	101369-P-S-M	09/16/88	24	14627
W-176-S4	100081-P-S-SW-LEFT	05/02/88	24	10223
W-176-S4	100081-P-S-SW-RIGHT	05/02/88	24	10233
W-315-T3	200773-P-S-M	08/06/88	24	13574
V-17-T3	200776-P-S-M	08/06/88	24	13584
CEP-96-T6	100276-P-S-MAIN	04/28/88	25	10551
A-81-T3	100889-P-S-M	07/28/88	25	13036
CI-144-S1	200608-P-S-SW-L	08/02/88	25	13147
CI-137-S1	200519-P-S-SW-C	08/02/88	25	13260
CI-BLD-135-CB1	200508-P-S-M	08/04/88	25	13279
CI-132-S1	200523-P-S-SW-R	08/04/88	25	13298
P-1-CB13	100635-P-S-CB-M	07/25/88	25	12650
SP-62-S1	200481-P-S-SW-R	08/03/88	25	13204
W-176-S5	100082-P-S-SW-LEFT	05/02/88	25	10225
W-143-S10	100118-P-S-SW-RIGHT	05/02/88	25	10272
W-176-S2	100078-P-S-RIGHT	04/28/88	25	10533
Z-86-CB1	200536-P-S-M	07/28/88	25	13017
LF-62-T2	100603-P-S-M	07/25/88	26	12668
CI-65-S1	200599-P-S-SW-C	08/02/88	26	13150
CI-137-S1	200519-P-S-SW-L	08/02/88	26	13268
CI-147-S1	200532-P-S-SW-R	08/04/88	26	13288
CI-147-S1	200532-P-S-SW-C	08/04/88	26	13289

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
A-48-S1	100224-P-S-C	05/16/88	26	10694
SEW-06-CB1	100562-P-S-M	07/25/88	26	12769
MCE-53-T2	101274-P-S-M	09/08/88	26	14086
V-17-T2	200775-P-S-M	08/06/88	26	13590
CEP-5-S1	100332-P-S-SW-R	06/29/88	27	11593
G-29-C-S4	100356-P-S-SW-L	07/15/88	27	12155
CEP-12-S1	100410-P-S-SW-R	07/15/88	27	12198
CI-70-S1	200554-P-S-SW-C	07/28/88	27	13065
CI-65-S1	200599-P-S-SW-R	08/02/88	27	13139
CI-72-S1	200596-P-S-SW-C	08/03/88	27	13162
CI-65-S1	200599-P-S-SW-L	08/03/88	27	13171
SP-239-S1	100671-P-S-M	07/22/88	27	12883
W-163-E-T1	100096-P-S-TC	05/02/88	27	10392
Z-133-T3	100251-P-S-MAIN	04/29/88	27	10609
T-37-CB1	200122-P-S-M	07/15/88	27	12194
CI-70-S1	200554-P-S-SW-L	07/28/88	28	13054
CI-65-S2	200601-P-S-SW-L	08/02/88	28	13151
LP-112-T12	100823-P-S-M	08/01/88	28	13219
CI-129-S1	200510-P-S-SW-C	08/04/88	28	13282
CI-138-S1	200514-P-S-SW-L	08/04/88	28	13284
CI-133-S1	200525-P-S-SW-C	08/04/88	28	13295
CI-70-S1	200554-P-S-SW-R	07/29/88	28	14767
SP-136-T2	101353-P-S-M	09/12/88	28	14543
T-37-T1	200121-P-S-TC	07/15/88	28	12185
W-143-CB2	200892-P-S-M	09/19/88	28	14187
K-Q-T1	200580-P-S-M	07/28/88	29	13008
CI-138-S1	200514-P-S-SW-C	08/02/88	29	13240
CI-145-S1	200527-P-S-SW-C	08/04/88	29	13294
CI-133-S1	200525-P-S-SW-L	08/04/88	29	13303
CEP-8-T5	101082-P-S-M	08/05/88	29	13535
SP-90-T1	200350-P-S-M	07/22/88	29	12852
W-163-E-T1	100096-P-S-MAIN	05/02/88	29	10241
K-BB1-S2	200068-P-S-SW-L	07/15/88	30	12062
LP-112-S5	200491-P-S-SW-L	08/02/88	30	13254
CI-138-S1	200514-P-S-SW-R	08/04/88	30	13276
CI-129-S1	200510-P-S-SW-R	08/04/88	30	13281
SP-34-S1	200479-P-S-SW-R	08/03/88	30	13206
MCE-53-T3	101275-P-S-M	09/08/88	30	14084
V-28-T6	200264-P-S-M	02/10/88	30	12628
V-82-T1	100578-P-S-M	07/25/88	30	12682

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
W-PIER 2-T10	200540-P-S-M	07/28/88	30	13015
W-143-CB1	200891-P-S-M	09/19/88	30	14198
CEP-96-T6	100276-P-S-LTC-UPPER	04/28/88	31	10550
CI-72-S1	200596-P-S-SW-L	08/03/88	31	13166
CI-133-S1	200525-P-S-SW-R	08/04/88	31	13302
CI-141-S1	200521-P-S-SW-R	08/04/88	31	13304
NH-139-T1	100371-P-S-HV-TC	07/15/88	31	12143
P-26-T2	200927-P-S-MAIN	09/13/88	31	14232
Z-140-T2	100262-P-S-MAIN	04/29/88	31	10604
LP-14-CB2	100754-P-S-M	03/09/89	32	12978
FRP-84-T3	101112-P-S-M	08/09/88	32	13828
SP-346-T4	100868-P-S-M	07/28/88	32	13027
SP-31-CB1	200416-P-S-CB-M	03/09/89	32	17233
V-17-T1	200774-P-S-M	08/06/88	32	13593
CEP-PIER 22-T3	200767-P-S-M	08/06/88	33	13570
V-57-T1	100583-P-S-M	07/25/88	33	12689
LAG-42-S3	200575-P-S-SW-C	07/28/88	34	13046
LP-4-S1	100781-P-S-SW-R	08/01/88	34	13233
Q-6-S2	100020-P-S-RIGHT	04/28/88	34	10547
SP-136-T3	101354-P-S-M	09/12/88	34	14548
V-51-CB1	200238-P-S-CB-M	07/23/88	34	12601
V-43-T5	200275-P-S-M	07/23/88	34	12619
V-82-T3	100580-P-S-M	07/25/88	34	12680
CA-6531-B-T1	100558-P-S-M	07/15/88	35	11528
CI-72-S1	200596-P-S-SW-R	08/02/88	35	13152
M-110-T4	100978-P-S-M	08/04/88	35	13389
W-PIER 2-T4	100145-P-S-MAIN	05/02/88	35	10308
V-82-T2	100579-P-S-M	07/25/88	35	12683
CI-98-S1	200546-P-S-SW-L	07/28/88	36	13051
P-1-CB16	100638-P-S-CB-M	07/25/88	36	12646
NH-159-T3	101525-P-S-M	12/12/88	36	16043
LP-112-T1	100812-P-S-M	08/01/88	37	13238
LP-112-T5	100816-P-S-M	08/02/88	37	13247
CI-129-S1	200510-P-S-SW-L	08/04/88	37	13280
N-29-S1	200092-P-S-SW-R	07/15/88	37	12190
Z-309-T4	100230-P-S-MAIN	05/02/88	37	10643
SDA-84-T2	100947-P-S-M	07/19/88	38	12030
SC-404-T1	200375-P-S-M	07/26/88	38	12913
X-358-T2	101472-P-S-M	12/15/88	38	16092
CEP-156-T1	100314-P-S-M	06/29/88	39	11608

NCEL NORFOLK OIL FILLED DEVICES
PCB ANALYSIS - NON PCB PPM < 50

SAMPLE IDENTIFICATION	SAMPLE IDENTIFICATION	SAMPLE DATE	PARTS PER MILLION	CERT. NUMBER
SP-34-S1	200479-P-S-SW-L	08/03/88	39	13209
NM-134-T1	101322-P-S-M	09/09/88	39	14531
LP-GCA-S1	200890-P-S-SW-M	09/21/88	40	14181
SP-90-T2	200351-P-S-MAIN	07/22/88	40	12856
SDA-334-T3	101271-P-S-M	08/09/88	40	13726
SP-113-T1	101404-P-S-M	09/16/88	40	14696
U-6A-T1	101185-P-S-M	08/09/88	40	13835
A-43-T2	200504-P-S-M	07/19/88	41	12381
Q-60-T1	100015-P-S-MAIN	04/04/88	41	10508
P-26-T4	101455-P-S-M	12/15/88	41	16156
CI-279-T1	200548-P-S-M	07/28/88	42	13061
Q-99-T3	100734-P-S-M	07/15/88	42	12366
NMC-D-T1	200797-P-S-M	09/16/88	42	14537
Z-309-T6	100231-P-S-MAIN	05/02/88	42	10644
Q-99-T1	100732-P-S-M	07/15/88	43	12364
Q-99-T2	100733-P-S-M	07/15/88	43	12365
SDA-232-T1	200666-P-S-LTC	08/04/88	43	13880
SP-214-T1	101330-P-S-M	09/12/88	43	14563
A-57-S1	100208-P-S-SW-RIGHT	06/01/88	45	11017
CI-280-T1	200547-P-S-M	07/28/88	45	13053
LP-166-T1	200499-P-S-M	08/02/88	46	13266
A-43-T1	200503-P-S-M	08/04/88	46	13290
M-110-S1	200098-P-S-SW-C	07/15/88	46	12191
P-1-CB11	100633-P-S-CB-M	07/25/88	46	12648
P-1-CB2	100624-P-S-CB-M	07/25/88	47	12658
SP-346-T2	100859-P-S-M	07/28/88	47	13037
U-69-T3	101161-P-S-M	08/09/88	48	14102
LP-112-S1	200487-P-S-SW-M	08/02/88	49	13265
T-37-CB6	101467-P-S-M	12/16/88	49	16158

APPENDIX H

STATISTICAL ANALYSIS OF DATA
FROM THE NORFOLK PWC PROJECT

INTEROFFICE CORRESPONDENCE

Date: May 15, 1989
To: A. P. Williams
From: W. F. Bauer *WFB*
Subject: STATISTICAL ANALYSIS OF IV&V DATA FROM THE NORFOLK PWC PROJECT -
WFB-07-1989

During the course of the Norfolk PWC project, fluid filled transformers were classified with respect to PCB content as either a clean, PCB contaminated, or PCB device. The concentration limits of PCB's for these classifications were apparently based upon either recommendations or regulations by the EPA. Table I gives an overview of the results of the samples analyzed by ENSR with respect to this classification scheme.

Table I. Number of devices in each class from the ENSR data base PCBANAL.

Device Classification	PCB Concentration (ppm)	Number in Class	Percent in Class
Clean	50 > PCB	2713	84.5
Contaminated	50 ≤ PCB < 500	244	7.6
PCB Device	PCB ≥ 500	254	7.9
Total		3211	100

In addition to the samples sent to ENSR, a number of samples were split with one half of the sample going to ENSR and the other half to ITAS. These samples were intended to be QA samples for use in independent validation and verification (IV&V) analyses. There were 3211 total analyses by ENSR and 243 (7.3%) of these samples were also analyzed by ITAS as IV&V samples.

The IV&V results were statistically evaluated to determine the standard deviation for different PCB concentration range. The results from the two laboratories were grouped into the ranges indicated in Table II. The 105.4 percent IV&V total arose since the ranges often overlapped as one laboratory was in one range and the other in another. Outliers were determined via a Grubb's test in a two step process. First, the results were tested with the relative percent difference (RPD) between the two results as the elimination

A. P. Williams
May 17, 1989
WFB-07-89
Page 2

parameter since this value identifies large errors on the basis of a percentage of the mean value between the two numbers. This value often is skewed toward the lower end of the range since the divisor gets smaller with respect to a possibly constant error. To avoid bias against the lower end of the particular range, the paired results were also tested using the range (absolute difference) between the two results in a pair. The largest ranges are expected at the higher end of the result range of interest. After elimination of the outlying pairs, the standard deviation for each range was calculated using the sum of the squares of differences for each pair. The results of this process are also listed in Table II.

Table II. Results of statistical analysis of ENSR and ITAS IV&V data.

Concentration Range (ppm)	Total Results	Percent Outliers	Percent of IV&V	Standard Deviation (ppm)	Confidence Interval ppm at 95%
Nondetects	148		60.9		
ND - 10	14	14.3	5.8	±2	±4
10 - 100	35	8.6	14.4	±9	±18
100 - 1400	32	6.2	13.2	±140	±280
Over 1400	27	11.1	11.1	±76000	±150000
Total	243		105.4		

These results are not unreasonable considering the nature of the analytical technique and the subjective nature in which the chromatograms are interpreted. When working in the 50 ppm PCB range, the data presented in EPA method 8080 from SW-846 implies a standard deviation of approximately ±20 ppm for PCB's 1242, 1254 and 1260. The data presented in Method 8080 was apparently compiled from inter- and intra- laboratory studies where standards were used as analytes.

Data from ASTM Method D4059-86 gives interlaboratory data, or reproducibility data, at the 95% confidence level as listed in Table III

Table III. Reproducibility (interlaboratory precision)
data as reported in ASTM Method D4059-86.

Range	Concentration
0 to 10 ppm	± 3 ppm
35 to 75 ppm	± 19 ppm
380 to 500 ppm	± 83 ppm

Based upon this data, the error bar of ± 280 at the 95% confidence level for the 100 to 1400 ppm of PCB range is considerably larger than expected. This is possibly due to the difficulty that ENSR has when doing dilutions and when operating at the upper end of their linear range. This is backed by the differences and the data supplied by ENSR in the recent repeated analysis of a replicated sample in the 500 ppm range. This sample was also sent to ITAS for similar repeated analysis. Each laboratory received five blind replicates of this sample.

ENSR supplied results of -430 and -580 ppm at dilution factors of 200 and 1000 respectively while ITAS reported -650 ppm. Results for a similar analysis at the 50 ppm level showed no significant difference between the laboratories. One must keep in mind that real samples were involved in the IV&V part of this of this study while relatively pure standards were used in the study presented in the ASTM method.

It also became apparent that ENSR has a problem when operating in the 500 ppm range after duplicate analyses were performed on those samples in the range of 400 to 600 ppm. These analyses were requested during the site visit to ENSR since existing, routine duplicate data was found to be unavailable. Archived samples in the 40 to 60 ppm and 400 to 600 ppm range were reanalyzed on 11-4-88. The results from these analyses were compared to the original analysis with the results given in Table IV.

Table IV. Results of the reanalysis of selected samples by ENSR.

Concentration Range (ppm)	Percent Outliers	Category Change	Standard Deviation (ppm)	Confidence Interval ppm at 95%
40 - 60	8.3	30.6%	± 5.4	± 11
400-600	0.0	40.7%	± 50	± 100

Further statistical analysis showed that the original results and the rerun results for the 400 to 600 ppm range were not statistically the same at the 95% confidence level and indicated that on the average, the November 4, 1988 (rerun) results were significantly higher than the original. Data from ASTM Method D4059-86 gives intralaboratory data, or repeatability data, at the 95% confidence level as shown in Table V. Also to be noted in Table IV are the significant percentage of cases where the device would require reclassification, either an upgrade or a downgrade.

Table V. Repeatability (intralaboratory precision)
 data as reported in ASTM Method D4059-86.

Range	Concentration
0 to 10 ppm	± 1 ppm
35 to 75 ppm	± 5 ppm
380 to 500 ppm	± 35 ppm

When comparing this data to the duplicate data from ENSR, keep in mind that ENSR used real samples with some of the reruns being months apart.

When considering the above information, it is apparent that there are often significantly different results from the two IV&V laboratories. It is not clear from this data whether the differences arise from an inherent imprecision or bias in the analytical methodology since spike or known reference sample data is largely unavailable. In light of this lack of information, and a lack of information on how the EPA arrived at the action levels shown in Table I, it may be preferable to consider using the

A. P. Williams
May 17, 1989
WFB-07-89
Page 5

standard deviations for each of the concentration ranges in Table II to set new action limits. If such action limits are used the data shown in Table I becomes the data presented in Table VI.

Table VI. Number of devices in each class from the ENSR data base
PCBANAL if consider results of IV&V analysis in Table II.

Device Classification	PCB Concentration ppm	Number in Class	Percent in Class
Clean	$30 > \text{PCB}$	2636	82.1
Contaminated	$30 \leq \text{PCB} < 200$	199	6.2
PCB Device	$\text{PCB} \geq 200$	376	11.7
Total		3211	100

By comparing Tables I and VI, it can be seen that an additional 77 devices may possibly be PCB contaminated devices. Of the original 244 contaminated devices, 122 of them may require reclassification as PCB devices.

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