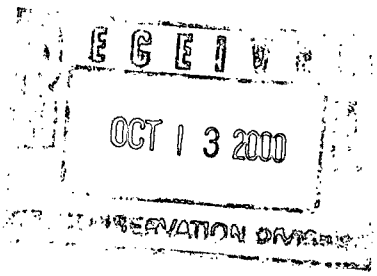
3R - 261

GENERAL CORRESPONDENCE

YEAR(S): 2000 - 1997



October 11, 2000

Mr. William C. Olson
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505
505-827-7131

Re: Well Closure Report
Farmington, New Mexico

Dear Mr. Olson:

Halliburton HSE has completed the closure of the four monitor wells at this former Wellex facility on September 23, 2000. The wells were plugged and abandoned by filling the wellbores with a bentonite cement grout. A backhoe then cut the wells approximately 2 feet below ground surface. This hole was filled with concrete to ground surface.

If you should have any questions concerning the closure of these well or require any further information please contact me at 972-580-1323 at your earliest convenience.

Sincerely,

Marty Cox

Marty Cox

cc: Denny Foust, OCD Aztec District Office
Joe Larkin, Halliburton HSE

WELL CLOSURE REPORT

ENTACT, Inc. completed four quarters of groundwater sampling, as requested by the Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD), at the former Wellex facility located at 2600 Bloomfield Highway in Farmington, New Mexico. Four monitor wells were installed to assess the vertical extent and potential impacts to the upper groundwater aquifer following a removal of impacted soil. The results of the quarterly sampling indicate that concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) have been below New Mexico WQCC regulatory limits during each sampling event. Groundwater samples were also required to be analyzed for WQCC metals, major cations and anions, and TDS during one quarterly sampling event. These analytes were below New Mexico WQCC regulatory limits. The quarterly groundwater sampling results were presented to the OCD in the Annual Groundwater Report dated June 7, 2000. Halliburton fulfilled the regulatory requirements set forth by the OCD and requested closure of the site on June 9, 2000.

The OCD approved the Halliburton request for site closure on August 14, 2000 with the following conditions:

- The wells shall be plugged and abandoned by either pulling the casing or cutting the casing off below ground surface and filling the hole with a cement grout; and
- Halliburton shall submit a final abandonment report to the OCD Santa Fe and Aztec offices.

North of building prior to excavation

Monitor Well Installation

Monitor wells were installed to a maximum depth of 45 feet and completed with 15 to 20 feet of 2-inch diameter monitor well screen and 25 to 30 feet of 2-inch diameter PVC casing. A sand pack filter was placed between the borehole wall and monitor well screen to approximately 2 feet above the monitor well screen and PVC casing interface. A bentonite seal was placed from the top of the sand pack to approximately 10 feet below ground surface. Bentonite cement grout was then placed above the bentonite seal to ground surface. The wells were completed flush to ground surface with an 8-inch diameter bolt down steel cover set in a 3 foot diameter concrete pad.

Monitor Well Closure

Due to the site lithology that consisted of cobbles overlain by sandy clay and clayey sand, monitor well borings were advanced using the ODEX drilling method which simultaneously installs casing as the well is advanced. The lithology made abandonment by pulling casing prohibitive.

On September 22, 2000, monitor wells MW-1 through MW-4 were closed and abandoned by filling the wellbore with a bentonite cement grout. Prior to closure, each monitor well was gauged with a water level meter to determine the depth to water. Bentonite chips were then added above the top of the water bearing zone in each well. A 93% Portland cement and 7% bentonite gel mix was then placed on top of the bentonite chips. A backhoe was finally utilized to cut each well to approximately 2 feet below ground surface. The excavated well bore was then filled with concrete flush to grade at ground surface. The areas surrounding the former wells were cleaned, and demobilization activities were completed on September 23, 2000.

Conclusions

The abandonment and closure activities at the site were completed on September 23, 2000. These activities were conducted on monitor wells that were installed on the property during June and July 1998.

- Four monitor wells were installed to assess the vertical extent and potential impacts to the upper groundwater aquifer following a removal of impacted soil.

- Groundwater was collected from the wells and monitored for four quarters for concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbon (TPH), and during one quarterly sampling event for WQCC metals, major cations, anions, and TDS.

- The results of the quarterly sampling indicated that concentrations of BTEX, TPH, WQCC metals, major cations, and anions have been below New Mexico WQCC regulatory limits during each event.

- The OCD approved the Halliburton request for site closure on August 14, 2000, and requested that the monitor wells be properly closed and abandoned.

- The wells were closed by filling each well above the saturated interval with bentonite chips and to two feet below ground surface with a Portland cement and bentonite gel mix.

- Each well was then cut two feet below ground surface and filled with concrete flush to grade.

Based upon the following site observations and assessment findings, no further action is anticipated at this former Wellex site.

Olson, William
From: mcox@entact.com [SMTP:mcox@entact.com]
Sent: Thursday, September 14, 2000 9:32 AM
To: Olson, William
Cc: Foust, Denny
Subject: Well closure - former Wellexfacility Farmington, NM

Bill, as discussed, there have been unanticipated delays in the closure of the four monitor wells at the facility located at 2600 Bloomfield Highway in Farmington, NM. The contractor should complete the well closures, as described in your letter dated August 14, 2000, within the next three weeks. A closure report will be delivered to your office by October 31, 2000 describing the details of the well abandonment.

Thank you for your patience. If you should have any questions please call me at 800-255-2771 at your earliest convience.

Marty Cox

June 9, 2000

Mr. William C. Olson
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505
505-827-7131

Re: Request for closure of Former Wellex Facility
Farmington, New Mexico

Dear Mr. Olson:

Halliburton HSE has completed four quarterly groundwater sampling events at the former Wellex Facility as requested by the Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD). The results of the quarterly sampling indicate that concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) have been below New Mexico WQCC regulatory limits during each event. A previous groundwater sampling event indicated that WQCC metals, major cations and anions, and TDS were also below New Mexico WQCC regulatory limits. Halliburton has fulfilled the regulatory requirements set forth by the OCD and request closure of this site located at 2600 Bloomfield Highway in Farmington, NM.

If you should have any questions concerning this request or require any further information please contact me at 972-580-1323 at your earliest convenience.

Sincerely,

Marty Cox

Marty Cox

cc: Denny Foust, OCD Aztec District Office
Joe Larkin, Halliburton HSE

ENTACT®
4040 W. ROYAL LANE
SUITE 136
IRVING, TEXAS 75063
www.entact.com

Bill, Denny read the final report and saw that TABLE 2-4 was missing. Please replace P. 6 with the Table I have included

Thanks

Marty

TABLE 2-4
CUMULATIVE ANALYTICAL DATA FOR BTEX, mg/l

WELL	SAMPLE DATE	BENZENE	TOLUENE	ETHYLBENZENE	p,m-XYLENE	o-XYLENE	TOTAL XYLENE	TOTAL BTEX
MW-01	MARCH 99	0.0025	0.0042	<0.0002	0.0033	0.004	0.0073	0.014
	JUNE 99	0.0021 (0.0020)	0.0069 (0.0068)	0.0046 (0.0046)	0.0622 (0.0621)	0.026 (0.026)	0.0882 (0.0881)	0.102 (0.102)
	NOVEMBER 99	0.0003 (0.0003)	0.0028 (0.0027)	<0.0002 (<0.0002)	0.0007 (0.0007)	<0.0001 (<0.0001)	0.0007 (0.0007)	0.0038 (0.0037)
	FEBRUARY 00	0.0029	0.0031	0.0076	0.0076	0.0029	0.0105	0.0241
MW-02	MARCH 99	0.0045	0.0004	0.0019	0.0019	0.0007	0.0026	0.0094
	JUNE 99	(<0.0002	0.0035	0.0005	0.0004	0.0016	0.0020	0.0060
	NOVEMBER 99	0.0003	0.0039	(<0.0002	0.0008	<0.0001	0.0008	0.0050
	FEBRUARY 00	0.0036	0.0037	0.0049	0.0081	0.0026	0.0107	0.0229
MW-03	MARCH 99	0.0022	0.0014	0.0015	0.0059	0.0013	0.0072	0.0123
	JUNE 99	0.0018	0.0038	0.0006	0.0046	0.0020	0.0066	0.0128
	NOVEMBER 99	0.0003	0.0013	(<0.0002	0.0006	<0.0001	0.0006	0.0022
	FEBRUARY 00	0.0029 (0.0029)	0.0017 (0.0018)	0.0047 (0.0047)	0.0036 (0.0037)	0.0009 (0.0008)	0.0045 (0.0045)	0.0138 (0.0139)
MW-04	MARCH 99	0.0005	0.0002	0.0005	0.0022	0.0007	0.0029	0.0041
	JUNE 99	<0.0002	0.0014	0.0004	0.0038	0.0017	0.0055	0.0073
	NOVEMBER 99	0.0003	0.0022	<0.0002	<0.0002	0.0002	0.0002	0.0027
	FEBRUARY 00	0.0029	0.0025	0.005	0.0025	0.0006	0.0031	0.0135
REGULATORY LIMIT		**0.01**	**0.75**	**0.75**			**0.62**	

Duplicate samples are shown in ()

Introduction

This Groundwater Sampling Plan presents the procedures for groundwater sampling of monitor wells at the former Wellex facility located at 2600 Bloomfield Highway (the Site) in Farmington, New Mexico. Groundwater monitor well inspections, purging, sampling, sample management, quality assurance/quality control, sample custody control, sample shipment and waste handling are described in this Plan.

The site consists of a 6,000 square foot corrugated sheet metal building situated on approximately one acre of land. This former Wellex facility operated as a support facility for the oil and gas industry in northwest New Mexico and southwest Colorado. During operation the facility consisted of one main building with six work bays and an office, washrack, an oil water separator, and a storage building.

Description of Monitoring Wells

Due to the site lithology, monitor well borings were advanced using the ODEX drilling method which simultaneously installs casing as the well is advanced. Monitor well MW-01 was installed north of the existing building, near the northern limits of the former separator area. Monitor wells MW-02 and MW-03 were installed north of the existing building upgradient and downgradient of the former separator area, respectively. Monitor well MW-04 was installed west of the existing building, just south of the former separator area.

Monitor wells were installed to a maximum depth of 45 feet. The wells were completed with 15 to 20 feet of 2-inch diameter, 0.010-inch slot monitor well screen and 25 to 30 feet of 2-inch diameter PVC casing. A sand pack filter was placed between the borehole wall and monitor well screen to approximately 2 feet above the monitor well screen and PVC casing interface. A bentonite seal was placed from the top of the sand pack to approximately 10 feet below ground surface. Bentonite cement grout was then placed above the bentonite seal to ground surface. The wells were completed flush to ground surface with an 8-inch diameter bolt down steel cover set in a 3 foot diameter concrete pad. A lockable expandable cap was placed on top of the PVC casing.

Sample Schedule

Groundwater samples will be collected from monitor wells MW-01 through MW-04 on a quarterly basis until analytical results are below New Mexico Water Quality Control Commission (WQCC) standards for four consecutive sampling events. Groundwater samples collected from these wells during the first quarterly sampling event will be analyzed for concentrations of WQCC metals; cations and anions; benzene, toluene, ethylbenzene, xylenes (BTEX); total petroleum hydrocarbon (TPH); and total dissolved solids (TDS). If after the first sampling event, concentrations of WQCC metals, cations and anions, and TDS are below regulatory limits, subsequent samples will be analyzed for concentrations of BTEX and TPH.

Groundwater Sampling Equipment and Procedures

Equipment Assembly and Preparation

Activities that will occur during each groundwater sampling event are summarized below:

- Prearrangement of sample analytical requests with analytical testing laboratory;
- Assembly and preparation of sampling equipment and supplies;
- Groundwater sampling;
- Inspection of well,
- Water-level measurements,
- Well purging,

- Field parameter measurements,
- Sampling,
- Waste handling,
- Sample preservation;
- Sample labeling;
- Completion of sample records (field log book);
- Completion of chain-of-custody records; and
- Sample shipment or delivery

Prior to the sampling event, all record-keeping materials will be prepared. Detailed sampling procedures are presented in the following sections.

Equipment Check

This activity includes the verification that all equipment is in proper operating condition. Also, arrangements for repair or replacement of any equipment, which is inoperative, are made.

Equipment Decontamination

All portions of sampling equipment, which could contact the interior well casing, will be thoroughly cleaned before use. This includes water-level probes, tubing, and pumps. It should be noted that most equipment would be dedicated and disposed after use at each well. Thus, the potential for cross-contamination is minimized. The procedure for equipment cleaning is as follows:

- clean with tap water and low phosphate detergent, brush if necessary;
- rinse thoroughly with tap water;
- rinse thoroughly with distilled water;
- equipment cleaned prior to field use will be recleaned after transfer to the sampling site unless carefully wrapped for transport.

Any necessary deviation from these procedures should be documented. Laboratory-supplied sample containers will be cleaned and sealed by the laboratory before shipping.

Groundwater Sampling Procedures

Well Inspection

Each well will be inspected for signs of damage to the well protector, well casing, and well pad. The lock on each well will be checked to make sure it is present and operable. The well numbering on each well will also be checked for legibility. Observations of each well condition will be noted on the Groundwater Sample Record Form.

Prevention of Cross-contamination

Special care will be exercised to prevent contamination of the groundwater and extracted samples during the sampling activities. The primary way in which such contamination can occur is contact with improperly cleaned equipment. To prevent such contamination, all non-dedicated sampling equipment will be thoroughly cleaned before and between uses at different sampling locations. In addition to the use of properly cleaned equipment, a clean pair of new, disposable latex (or similar) gloves will be worn each time during well sampling.

Groundwater Level and Total Depth Measurements

Groundwater levels and the total depths will be measured in each well before well purging. Using a pre-cleaned water level meter, the groundwater surface will be measured from the casing datum to the nearest 1/8 inch (0.01-foot). The probe will then be lowered to measure the well total depth. These measurements will be recorded on the Groundwater Sample Record Form.

Well Purging and Sampling

The monitor wells will be purged using an electric pump or by hand bailing. The purge time or purge volume is independent of well depth or well volumes, using instead water quality indicator parameters to determine purging needs. The field parameter specific conductance will be used to determine when the well has been adequately purged (stabilized). Stabilization will be confirmed when three successive specific conductance readings are within _ 10%. Additional field parameters, pH and temperature will also be collected to characterize water quality conditions. Each field instrument will be calibrated according to manufacturer instructions. The parameter measurements will be recorded on the Purge Record Form. Sample extraction will be accomplished by using a dedicated

disposal bailer.

Container and Labels

The analytical testing laboratory will provide all sampling containers and appropriate container lids. Sample labels will be attached to each sample container with the following information legibly and indelibly written on each label:

- Sample identification,
- Sampling date,
- Sampling time,
- Sample collector's initials,
- Preservatives used,
- Type of sample, and
- Analysis to be performed.

The sample identification system for monitor well samples will be the well number followed by a designator to indicate the number of times this well has been sampled. For example, if this was the fourth sampling event for monitor well MW-02, the sample identification for this well on this occasion would be MW-02-04. A duplicate groundwater sample will be identified by using a "D" next to the monitor well identifier (i.e. MWD-02-04). The duplicate will also be identified in the field logbook as a duplicate sample.

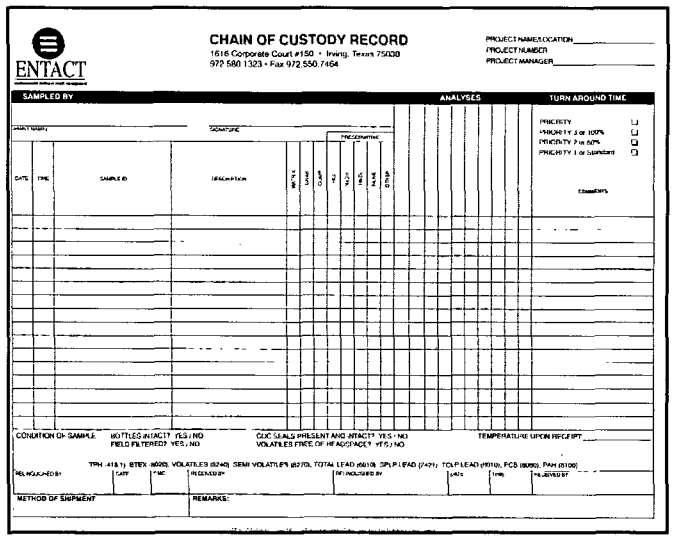
Sample Shipment/Delivery and Laboratory

The following packaging and labeling requirements for the sample materials are usually appropriate for shipping the sample to the testing laboratory:

- Preserve samples with ice;
- Package sample so that is does not leak from its packaging; and
- Attach chain-of-custody forms inside sample shipment container.

Chain-of-Custody Control

After samples have been obtained, chain-of-custody procedures will be followed to establish a written record



concerning sample movement between the sampling site and the testing laboratory. Each shipping container will have a chain-of- custody form completed by the site sampling personnel packing the samples. The chain-of-custody form for each container will be completed in duplicate. The project manager will maintain one copy of this form, and the other copy will be submitted to the laboratory. The laboratory copy will become a part of the permanent record for the sample.

Sampling Records

To provide complete documentation of sampling, detailed records will be maintained in a logbook.. The logbook will contain the Groundwater Sampling Record and the Purge Record. These records will provide for the collection of the information listed below:

- Sample location (facility name);
- Sample identification (well number and/or sample number);
- Sample location map or detailed sketch;
- Date and time of sampling;
- Sampling analysis and method;
- Field measurements;
- Weather conditions;
- Sampler's identification; and
- Any other pertinent information.

Quality Assurance and Control

Groundwater QA/QC includes the collection of duplicate samples and matrix spike/matrix spike duplicate (MS/MSD) samples. The QA/QC samples will be analyzed for concentrations of TPH. One duplicate sample will be collected during each sampling event. The duplicates will be collected by alternately filling two, appropriate and identical sample containers. The MS/MSD samples will be analyzed at a frequency of one for every 20 groundwater samples at the laboratory.

ENVIROTECH INC.
FARMINGTON, NM 5796 HIGHWAY 64
MONITOR WELL DATA

Date: 9-15-99 Project No: 806103

Project Name: ENTACT Chain of Custody No: ______

Location: WELLEX SITE, FARMINGTON

Project Manager: HB Sampler: MJ

MONITOR WELL DATA

WELL #	TIME	OVM ppm	pH	COND. µS	TEMP. °F	DEPTH TO WATER FT.	TOTAL DEPTH FT.	WATER COLUMN FT.	BAILED Water Gal.	PRODUCT Ft.	WATER LEVEL FT.
MW01	11:45	–	7.31	1200	64.7	38.61	44.32	5.71	2.9		
MW02	13:15	-	7.24	1200	62.8	38.82	44.01	5.19	2.6		
MW03	14:00	-	7.20	1200	63.8	38.61	44.91	6.30	3.2		
MW04	15:15	-	6.98	1800	62.1	38.28	44.05	5.77	2.9		

Notes: TOC = Top of Casing
Bailed = 3 well volumes:
1.25" well = 0.19 gal/ft.
2.00" well = 0.49 gal/ft.
4.00" well = 1.96 gal/ft.
Note well diameter if not one of the above.

9-15-99

MW01 CLOUDY GREY; NO ODOR
MW02 SLIGHTLY CLOUDY BROWN; NO ODOR
MW03 CLEAR TO VERY SLIGHTLY BROWN; NO ODOR
MW04 CLEAR; NO ODOR

PROJECT:
LOCATION:
OPERATOR:

PROJECT #:
METHOD:
EQUIP. #:

WELL ID	WELL DEPTH	T.O.C. ELEV.	DEPTH TO WATER	WATER ELEV	DEPTH TO PETRO	PETRO ELEV.	PETRO THICK	PETRO GRAV	HYDRO EQUIV	CORR DTW

Field instrumentation will include a pH/temperature/specific and a conductance meter.

Derived Waste Management

The following procedures are consistent with procedures previous used at the Farmington Site to handle investigation derived wastes (IDW). IDW will include purged groundwater, decontamination wastewater, personal protective equipment (PPE), and pump tubing from the peristaltic pump. The liquid wastes from each monitor well will be collected in a unique 55-gallon drum. If analytical results indicated that concentrations are below regulatory limits, water in this drum will be discharged to the ground within the limits of the Former Wellex Site. No liquid wastes will be allowed to flow into any surface water. PPE and pump tubing will be collected in trash bags and disposed as solid waste in an offsite dumpster.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

January 22, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-598

Mr. Joe Larkin
Halliburton Energy Services
4100 Clinton Dr., Bldg 3, 1107E
Houston, Texas 77020

RE: OLD WELLEX FACILITY
FARMINGTON, NEW, MEXICO

Dear Mr. Larkin:

The New Mexico Oil Conservation Division (OCD) has reviewed Halliburton Energy Services (HES) September 25, 1998 "FORMER WELLEX FACILITY, FARMINGTON, NEW MEXICO" which was submitted on behalf of HES by their consultant ENTACT. This document contains the results of HES's investigation and remediation of contamination related to a waste disposal pit at the old Wellex/Otis Engineering facility in Farmington, New Mexico. The document also contains HES's request for closure of the site remedial actions.

The investigation and remediation actions taken to date are satisfactory. However, the OCD has the following comments and requests:

1. The OCD's March 26, 1998 approval of HES's work plan required that ground water also be sampled for New Mexico Water Quality Control Commission (WQCC) metals and cations and anions due to their presence in the sump area. The above referenced document does not contain this data. Please provide the OCD with this data.

2. Due to the elevated levels of total petroleum hydrocarbons remaining in the base of the excavation, the OCD requires that HES demonstrate that ground water from the monitor wells be show to be below WQCC standards for 4 consecutive quarters prior to issuing final closure approval. Please provide a ground water monitoring plan to achieve this requirement.

The OCD requires that HES provide the OCD with the above items by April 1, 1999. Please submit these items to the OCD Santa Fe Office with a copy provided to the OCD Aztec District Office.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Marty Cox, ENTACT

Z 274 520 598

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PS Form 3800, April 1995

ENTACT

environmental tactics in waste management

September 25, 1998

Mr. Bill Olson
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Former Wellex Facility
Farmington, New Mexico

Dear Mr. Olson:

Enclosed is a copy of the Remediation Assessment Report for the former Wellex site located at 2600 East Bloomfield Highway in Farmington, New Mexico. Copies of this report have been forwarded to Mr. Denny Foust and to Mr. Joe Larkin, Halliburton, Houston, Texas. Please review this report and call me at (972) 580-1323 should you have any questions concerning its contents.

Sincerely,

Marty Cox

Marty Cox

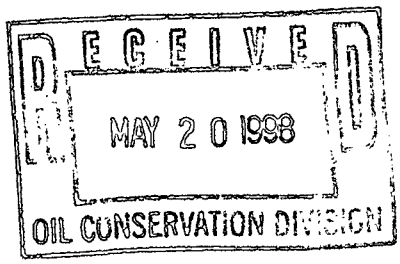
972/580-1323
FAX: 972/550-7464
METRO: 972/751-0057

1616 Corporate Court
Suite #150
Irving, Texas 75038

Halliburton

Health, Safety and Environmental

4100 Clinton (77020-6299) / Post Office Box 3 / Houston, TX 77001-0003



May 19, 1998

Mr. William C. Olsen
State of New Mexico
Energy, Minerals, and Natural Resources Dept.
Oil Conservation Division
2040 South Pacheco
Sante Fe, New Mexico 87505

Dear Mr. Olsen:

Subject: Old Wellex Facility, Farmington, New Mexico

It was enjoyable meeting you (by telephone) last week. Your cooperation in resolving the issues at the above-referenced property is appreciated.

As we discussed, we have had some administrative issues on this project which have resulted in a delayed start-up. You indicated that there would be no problem with an extension, but a written request would be necessary. Consequently, we would like to request an extension of time to complete the work originally scheduled for completion on June 5, 1998. The new anticipated completion date for the proposed work is July 31, 1998. I hope this does not cause any inconvenience to you.

Our consultant representative and I will be visiting the site on Thursday, May 21. We would like to stop by your office later in the afternoon and say hello, if time permits.

Thank you for your assistance on this project.

Very truly yours,

Joseph J. Larkin, P.E.

cc: Ruth Pierce, Halliburton Law Department
Harry Stollmack, Halliburton HSE

TETRA TECH NUS, INC.
2300 Buena Vista S.E., Suite 110 ■ Albuquerque, New Mexico 87106
(505) 247-4933 ■ FAX (505) 247-8151 ■ www.tetratech.com

ABQ-98-0042

March 16, 1998

Project Number HX20

William C. Olson
State of New Mexico
Energy, Mineral and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Verbal confirmation with Steve Pullen 3/26/98 RA

Reference: Project No. HX20
Task Authorization 003

Subject: Presence of 4,4 DDD in soil at the Former Wellex Facility, Farmington, New Mexico

Dear Mr. Olson:

On behalf of Halliburton Energy Services, Tetra Tech NUS has prepared this response to your February 18, 1998 letter concerning the presence of 4,4 DDD in soil at the Former Wellex Facility in Farmington New Mexico. The compound 4,4 DDD is a break down product of DDT, a commonly used pesticide in the 1950's and 1960's. The persistence of DDT and its breakdown products in the environment is one of the properties which led to its eventual ban. The tentatively identified concentration of 4 parts per billion 4,4 DDD is what would be expected from routine application of DDT for pest control purposes.

We argue that a concentration of 4 parts per billion is not consistent with DDT disposal or abandonment at the site. Therefore, it does not meet the definition of solid waste under 40 CFR, 261.2 and should not be considered a RCRA-listed waste. The definition of solid waste under 40 CFR, 261.2 c also states that "commercial chemical products listed in 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use." I have spoken with Steve Pullen of the Hazardous and Radioactive Materials Bureau at the New Mexico Environment Department and he concurs with this position.

TETRA TECH NUS, INC.
2300 Buena Vista S.E., Suite 110 ▪ Albuquerque, New Mexico 87106
(505) 247-4933 ▪ FAX (505) 247-8151 ▪ www.tetratech.com

The contamination at the former Wellex Facility is an issue of soil impacted with BTEX in excess of the OCD guideline of 50 mg/kg. With OCD's permission, Tetra Tech NUS would like to move forward with the removal and disposal of these BTEX-impacted soils from the site. If you would like to discuss the DDD issue further, please feel free to call me or Steve Pullen at NMED.

Very Truly Yours,

Jeff Johnston

Jeff Johnston
Senior Hydrologist

cc: Joe Larkin, HES Project Manager
Denny G. Foust, OCD Aztec District Office
Steve Pullen, NMED
Harlan Brown, Envirotech Inc.
file

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

February 18, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-234

Mr. Joe Larkin
Halliburton Energy Services
4100 Clinton Dr., Bldg 3, 1107E
Houston, Texas 77020

RE: OLD WELLEX FACILITY
FARMINGTON, NEW, MEXICO

Dear Mr. Larkin:

The New Mexico Oil Conservation Division (OCD) has reviewed Halliburton Energy Services (HES) January 27, 1998 "WORK PLAN FOR SOURCE REMOVAL AND GROUNDWATER MONITORING WELL INSTALLATION, FORMER WELLEX FACILITY, FARMINGTON, NEW MEXICO" and October 30, 1997 "SITE INVESTIGATION REPORT FOR WELLEX/OTIS ENGINEERING FACILITY, HALLIBURTON ENERGY SERVICES, 2600 EAST BLOOMFIELD HIGHWAY, FARMINGTON, NEW MEXICO" which were submitted on behalf of HES by their consultant Tetra Tech NUS, Inc.. These documents contain the results of HES's investigation of contamination related to a waste disposal pit at the old Wellex/Otis Engineering facility in Farmington, New Mexico. The documents also contain HES's work plan for remediation of contaminated soils and installation of ground water monitoring wells to determine potential ground water impacts.

A review of the analytical data in the October 30, 1997 investigation report shows that 4,4' - DDD was present in soils from the pit. This compound is a listed RCRA hazardous waste. However, the laboratory analyses also indicate that this compound could not be confirmed as being present. As a result, the OCD defers comment on HES's above referenced work plan and requires that HES address whether listed RCRA hazardous wastes are present in the former pit. Submission of the above information will allow the OCD to continue a review of HES's work plan.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Jeff Johnston. Tetra Tech NUS, Inc.

Z 235 437 234

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PS Form 3800, April 1995

TETRA TECH NUS, INC.

2300 Buena Vista SE
Suite 110
Albuquerque, NM 87106
Telephone: (505) 247-4933

ABQ-98-0014

January 27, 1998

Project Number HX20

William C. Olson
State of New Mexico
Energy, Mineral and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Reference: Project No. HX20
Task Authorization 003

Subject: Work Plan for Source Removal and Groundwater Monitoring Well Installation, Former Wellex Facility, Farmington, New Mexico

Dear Mr. Olson:

On behalf of Halliburton Energy Services, Tetra Tech NUS is submitting the enclosed Work Plan for Source Removal and Groundwater Monitoring Well Installation at the Former Wellex Facility, 2600 East Bloomfield Highway in Farmington, New Mexico. The work plan was developed in response to the site characterization performed in September 1997 and conversations with the Oil Conservation Division. Please review this work plan at your earliest convenience. With your concurrence, we are planning to mobilize for the source removal activites during the week of February 23, 1998.

TETRA TECH NUS, INC.

2300 Buena Vista SE
Suite 110
Albuquerque, NM 87106
Telephone: (505) 247-4933

If you have any questions or comments regarding the Farmington Site please contact me or Bryan Wolfe at (505)247-4933.

Very Truly Yours,

Jeff Johnston
Senior Hydrologist

Enclosure

cc: Joe Larkin, HES Project Manager (w/enclosure)
Denny G. Foust, OCD Aztec District Office (w/enclosure)
file

4100 Clinton Dr. Bldg 3, 1107E
Houston, TX 77020

WORK PLAN

for

SOURCE REMOVAL
AND
GROUNDWATER MONITORING WELL INSTALLATION

at

HALLIBURTON ENERGY SERVICES
WELLEX FACILITY
2600 BLOOMFIELD HWY
FARMINGTON, NEW MEXICO

Submitted to:

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

2040 S. Pacheco
Santa Fe, New Mexico 87505

January 27, 1998

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TABLES

FIGURES

1. INTRODUCTION

This workplan has been prepared for Halliburton Energy Services to remediate impacted soils associated with a former oil/water separator (OWS) located at 2600 Bloomfield Highway, Farmington, New Mexico. The workplan also outlines site assessment activities which will determine if groundwater has been impacted by the former OWS. The New Mexico Energy, Minerals and Natural Resources Department (NMEMNR), Oil Conservation Division (OCD) is the state regulatory agency having jurisdiction over cleanup related to the former OWS at this site.

1.1 SITE DESCRIPTION AND ENVIRONMENTAL SETTING

1.1.1 Site Description

The facility is located on a 150 ft by 290 ft fenced parcel identified as Section 14 of Township 29 North and Range 13 West in San Juan County, New Mexico. The address of the site is 2600 East Bloomfield Highway, Farmington, New Mexico. The facility consists of a building approximately 50 feet by 150 feet containing service bays and a small office space. The working area of the site is enclosed within an eight foot tall chain link fence. The site formerly operated as both a Wellex and an Otis Engineering facility and has been abandoned since 1993. While in operation, an oil/water separator (OWS) was located on site. The OWS consisted of a cinderblock enclosure located below grade with no floor. The OWS was demolished in 1995.

No records are available that document operations at this site. It is known that this facility supported well logging activities. Waste streams discharged into the former OWS are unknown.

1.1.2 Environmental Setting

The HES facility is approximately 1.5 miles southeast of Farmington, New Mexico within a commercial zone. Site elevation is 5338 ft above MSL on a southwest trending slope approximately 1 mile north of the San Juan river. The facility is situated on soils of the Garland series which is formed from mixed alluvial sediments. Typical horizons in this series consist of a upper layer of brown loam 4 inches thick. The subsoil is brown clay loam about 20 inches thick underlain by light brown gray very gravely loamy sand. These characteristics were evident during the site investigation. Groundwater is encountered at 25 to 27 feet below ground surface (ft bgs). Groundwater was not encountered during the previous investigations.

1.2 PREVIOUS INVESTIGATIONS

A preliminary site investigation was conducted by OVAC Engineering in 1993. Their effort included soil sampling and analysis and a general site review. Eleven soil samples were collected and analyzed for volatile organic compounds (VOCs), toxicity characteristic leaching procedure (TCLP) metals, total petroleum hydrocarbons (TPH) and pH. Samples were collected at depths varying from 2 ft to 12 ft bgs at locations throughout the facility. Sample results indicate that TPH is present in the vicinity of the former OWS. A sample collected along the east side of the OWS at 9 ft bgs detected a TPH at a concentration of 4,200 mg/kg. A second sample collected approximately 20 ft southeast of the OWS at 3 ft bgs detected TPH at a concentration of 807 mg/kg. A third sample collected 20 ft due south of the former OWS detected toluene at a concentration of 26.3 mg/kg. The 1993 investigation concluded that the OWS was the source of the petroleum hydrocarbons. An estimated 4 cubic yards of sludge was observed within the OWS enclosure. The investigation report concluded that approximately 75 to 80 cubic yards of soil had been impacted with TPH by the OWS

In 1995, a cosmetic clean-up of the site was performed consisting of cleaning and policing of the site and the building. The OWS was demolished and sludge within the excavation was left in place. No remediation of the OWS facility was performed. In addition, no formal report was generated by OVAC. This operation was documented in a letter from Halliburton to the New Mexico Department of Energy, Minerals and Natural Resources, Oil Conservation Division (OCD).

Soil sampling activities were performed on September 4 and 5, 1997 at the project site (HES, 1997). A long reach excavator was employed in the attempt to sample down to a depth of 20 feet in and around the former OWS location. Because of unstable soil conditions, the maximum depth attained was 15 feet below ground surface (bgs). The soil consists of sandy, gravelly loam with little or no structure. Excavations tended to cave-in easily during the course of the work. Six excavations were installed to delineate the affected area along with a background sample (Figure 1-1).

Several of the excavations, numbers 2, 3, 4, and 6, exhibited dark black staining of the soils with a strong petroleum odor. The staining continued to the bottom of the excavations in all cases. Excavation numbers 1 and 5 exhibited no visible staining of the soils.

Soil samples were collected at 15 feet bgs from excavation numbers 2, 3, 4, 5 and 6 (Figure 1-2). In excavation number 1, a sample was collected from 10 ft bgs. The background sample, excavation number 7, was sampled at a depth of 4 feet. All samples were analyzed for volatile organic compounds

(EPA Method 8260A), semi-volatile organic compounds (EPA Method 8270B), and target analyte metals (EPA Methods 6010, 6020, and 7000). The results are summarized in Table 1-1.

The soil from excavation number 4 was also analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for volatile organic compounds, semi-volatile organic compounds, and RCRA metals. The sample was also tested for ignitibility, reactivity and corrosivity. The analytical results indicate that the soil is not considered a RCRA-Characteristic waste and are summarized in Tables 1-2 and 1-3.

The extent of the contamination appeared to encompass an area 25 feet long (east-west) by 33 feet wide (north-south). As previously discussed, the maximum depth of excavation was 15 feet. The heavy black staining and odor were apparent in the bottom of excavations 2, 3,4, and 6. It is possible that the affected area extends down to the groundwater surface, assumed to be at approximately 27 feet bgs. The calculated volume of affected soil is approximately 1000 cubic yards assuming a 20% increase due to expansion during excavation.

Halliburton Energy Services
2600 East Bloomfield Hwy.
Farmington, NM

TABLE 1-1. Results of Soil Analyses for Semi-Volatile Organic Compounds, Volatile Organic Compounds and Metals for Samples Collected at 2600 East Bloomfield Hwy., Farmington, NM

	EXCAVATION/SAMPLE NUMBER and SAMPLE DEPTH								
	SB01-	SB02-	SB03-	SB04-	SB05-	SB06-	SB07-04 backgrnd	OCD GUIDELINE[1]	EPA HHRB LEVEL[2]
Analysis Parameter	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
VOCs EPA 8260A									
Ethylbenzene	nd	nd	160	320	nd	170	nd		2900
Xylenes (total)	nd	nd	1200	1700	nd	1000	nd	**BTEX**	980
TOTAL			1360	2020		1170		50	
SVOCs EPA 8270B									
2-Methylnaphthalene	nd	2.4	15	30	nd	9.9	nd		NA
Naphthalene	nd	0.41	nd	5	nd	2	nd		800
Phenanthrene	nd	0.4	nd	nd	nd	nd	nd		NA
Metals EPA 6020 (ICP/MS)									
Arsenic	1.2	1.6	2.7	1.4	1.4	1.2	2.3		22N
Beryllium	0.13	0.15	0.24	0.17	0.14	0.15	0.19		0.14
Selenium	nd	nd	nd	nd	nd	nd	nd		380
Thallium	nd	nd	nd	nd	nd	nd	nd		NA
Total Metals EPA 6010									
Aluminum	3520	3350	6130	6030	2960	6590	5360		77000
Antimony	nd	nd	nd	nd	nd	nd	nd		31
Barium	74.1	63.6	224	289	69.5	120	103		5300
Cadmium	nd	nd	1.8	1.2	nd	nd	nd		38
Calcium	24400	35300	23900	34400	34800	60100	41600		NA
Chromium	4.1	4.4	7.1	7	3.7	6.8	4.2		210
Cobalt	3.2	3.1	4.3	3.2	2.9	4.4	3.9		4700
Copper	49.8	11.8	155	116	8.2	30.2	15		2800
Iron	6830	6890	10400	8640	6330	11200	10200		23000
Lead	14.7	5.7	84.2	61.4	nd	22.3	7.8		400
Magnesium	2630	3520	3120	3740	3300	6180	9280		NA
Manganese	226	352	295	304	276	479	375		380
Mercury (EPA 7471)	0.022	0.04	0.079	nd	nd	nd	0.02		23
Molybdenum	nd	nd	2.4	nd	nd	nd	nd		380
Nickel	nd	nd	7.1	5.8	nd	6.6	4.5		1500
Potassium	606	620	1200	891	nd	998	866		NA
Silver	1.4	nd	16.5	14.4	nd	3.2	nd		380
Sodium	nd	nd	nd	nd	nd	nd	nd		NA
Vanadium	10.3	9.7	13.8	11.7	8.4	16	15.3		540
Zinc	40.8	27.1	505	1230	20.1	325	28.5		23000

1) Oil Conservation Division, Guidelines for Remediation of Leaks, Spills, and Releases (OCD, 1993)

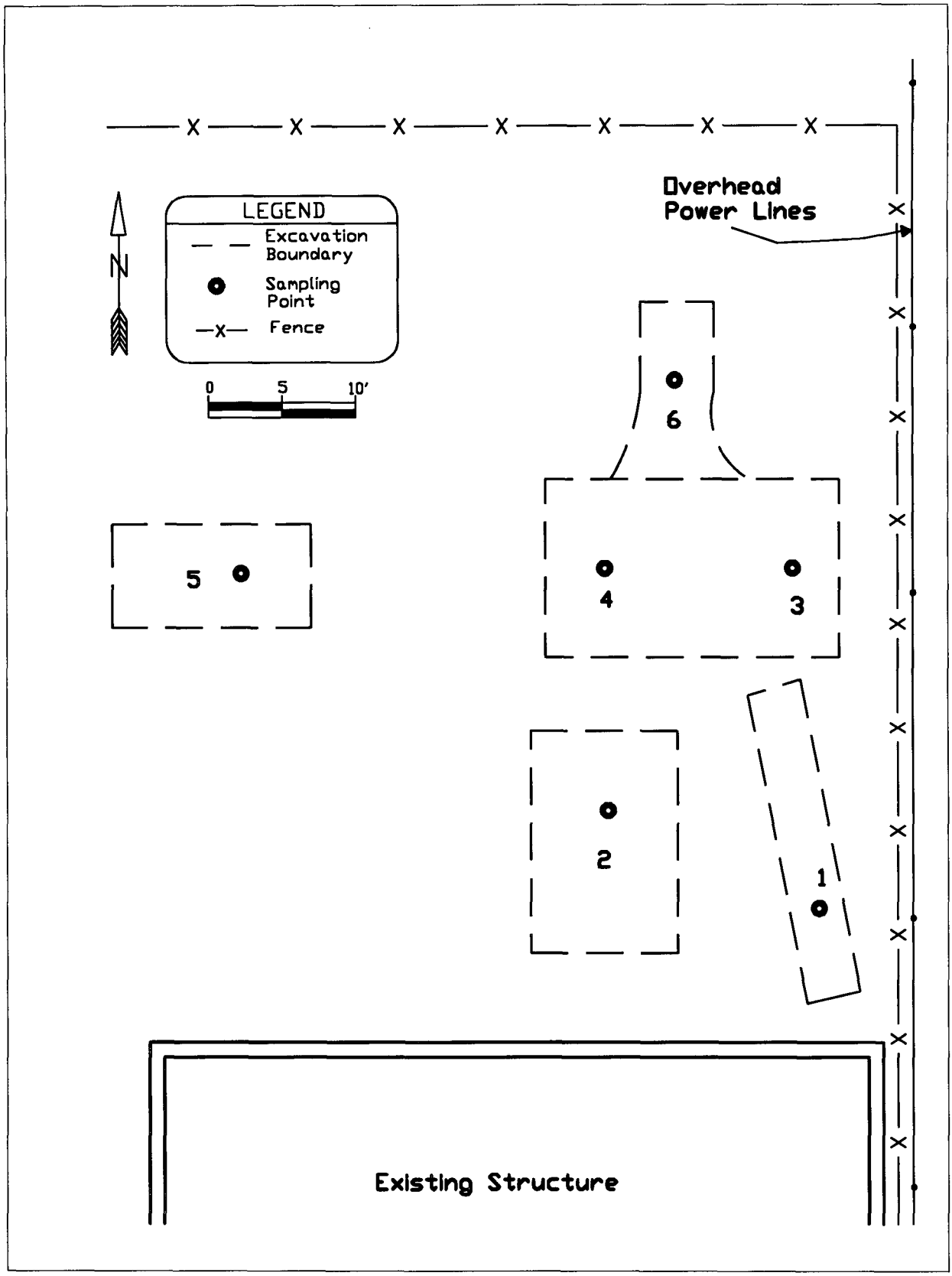
2) EPA Region 6 Human Health Media-Specific Screening Levels (EPA, 1996)

Table 1-2. Results of TCLP Leachate Analysis for Sample SB04 Collected at 2600 East Bloomfield Hwy., Farmington, NM

Parameter	RCRA-Characteristic Standard (mg/L)	Sample SB04 (mg/L)
Volatile Organic Toxicity		
Benzene	0.5	ND
Carbon Tetrachloride	0.5	ND
Chlorobenzene	100	ND
Chloroform	6.0	ND
1,2-Diclhoroethane	0.5	ND
1,1-Dichloroethene	0.7	ND
2-Butanone	200.0	ND
Vinyl Chloride	0.2	ND
Trichloroethene	0.5	ND
Tetrachloroethene	0.7	ND
Semi-Volatile Organics		
1,4-Dichlorobenzene	7.5	ND
2,4-Dinitrotoluene	0.13	ND
Hexachlorobenzene	0.13	ND
Hexachlorobutadiene	0.5	ND
Hexachloroethane	3.0	ND
2-Methylphenol	200.0	ND
¾-Methylphenol	200.0	ND
Nitrobenzene	2.0	ND
Pentachlorophenol	100.0	ND
Pyridine	5.0	5.0
2,4,5-Trichlorophenol	400.0	ND
2,4,6-Trichlorophenol	2.0	ND
Metals		
Arsenic	5.0	ND
Barium	100.0	ND
Cadmium	1.0	ND
Chromium	5.0	ND
Lead	5.0	ND
Selenium	1.0	ND
Silver	5.0	ND
Mercury	0.2	ND

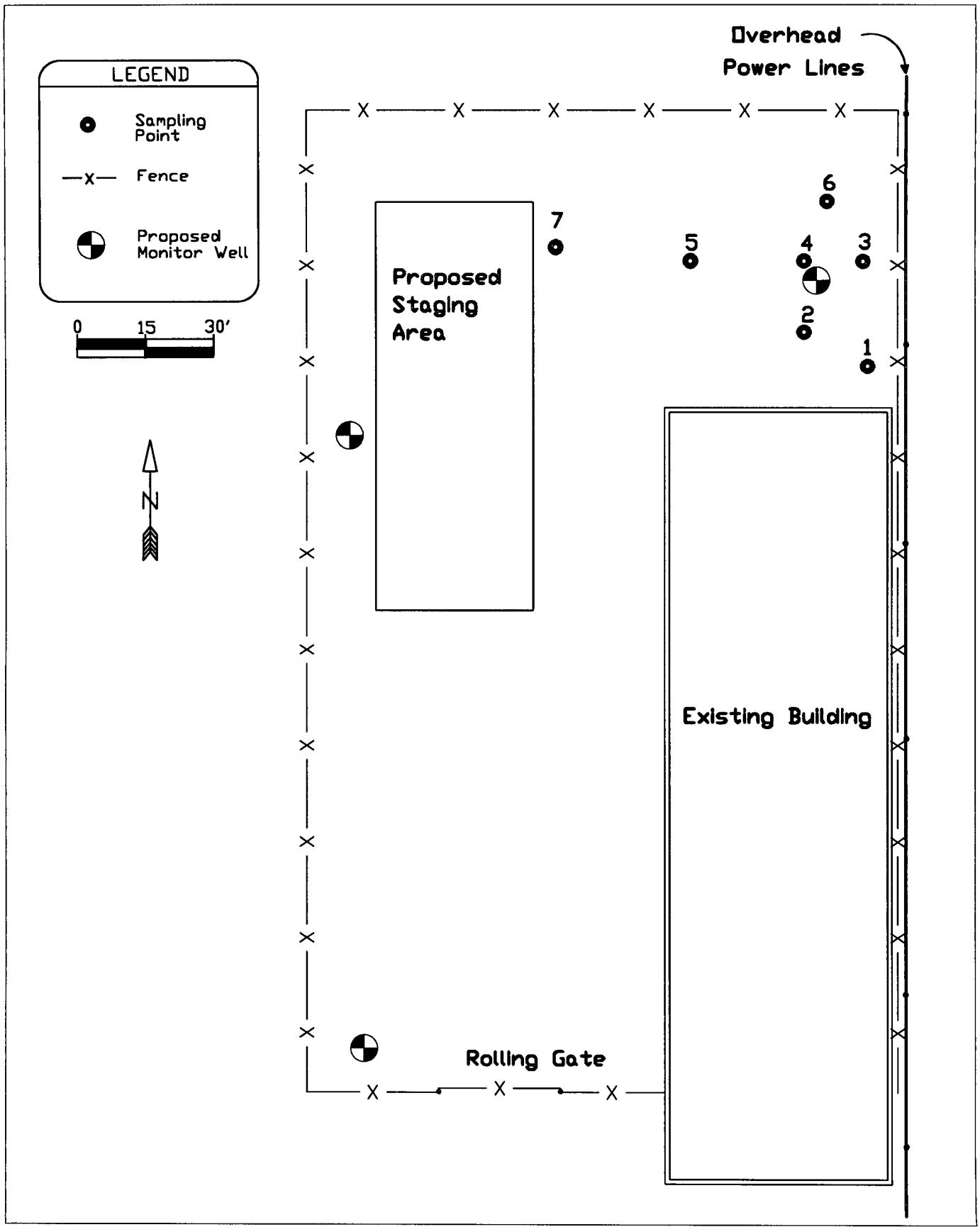
Table 1-3. Results of Ignitibility, Reactivity, and Corrosivity Test on Sample Collected at 2600 East Bloomfield Hwy., Farmington, NM

Parameter	Qualitative Result
Cyanide, Reactive	ND
Ignitability	NO
pH	8.5
Sulfide, Reactive	ND



Sampling Location
and Excavation Areas

Figure 1-1



Site Plan of
2600 East Bloomfield Hwy
Farmington, New Mexico

Figure 1-2

2. WORK PLAN AND RATIONALE

A combination of soil remediation through excavation and disposal and groundwater assessment is proposed to address the impacted soil associated with the former OWS. The September 1997 investigation clearly identified impacted soils to a depth of 15 ft. Impacted soils will be excavated to the depth of the shallow water table or to a depth that is feasibly obtainable with an excavator to complete the source abatement. The lateral extent of excavation will be determined in the field by a soil screening method. Abatement confirmation samples will be collected at the boundaries of the excavation. Groundwater conditions will be assessed by installing two monitor wells at the site. Details of the proposed remediation and assessment are presented below.

2.1 SOURCE REMOVAL

A source removal action is planned for the contaminated soil at this site to the extent practical. The work area is constrained on the north and east by the property boundary and on the south by an existing building. The property boundary is approximately 10 feet east of the proposed eastern limit of excavation and approximately 17 feet north of the northern excavation boundary. Immediately east of the site is a trailer park occupied by mobile homes. North of the project site is an established residence. The existing building on site is only 12 feet south of the excavation. It is apparent from the investigation that contamination extends to an appreciable depth in and around the former OWS location.

Substantial engineering controls may be required to stabilize the sides of the excavation.

Contaminated soil will be removed until groundwater is encountered or to a depth that is feasibly obtainable with an excavator, which ever occurs first. A long reach excavator will be employed to remove the contaminated media. Temporary shoring might be employed to stabilize the excavation due to limited work area available to slope the sides of the excavation.

Contaminated material will be disposed of at an OCD permitted land treatment facility. The material will be disposed of as oilfield non-exempt waste. The excavation will be sampled on the sides and bottom to document post-excavation conditions. Soil analyses for BTEX (EPA Method 8020) and TPH (EPA Method 8015 Mod) will be performed. The site characterization soil analyses indicate that the soil is not a RCRA-characteristic waste, therefore no additional soil samples will be analyzed for TCLP compounds. The excavation will be backfilled with clean soil.

If site conditions do not allow for implementation of this removal strategy, an alternative strategy will be developed in consultation with OCD personnel on site.

2.2 GROUNDWATER MONITORING

Three monitoring wells will be installed to determine if groundwater contamination exists at the site (Figure 1-2). These wells will be installed in accordance with New Mexico Environment Department (NMED) Ground Water Section guidelines. The wells will be installed with oversight by an experienced geologist to ensure compliance with regulatory requirements.

One well will be installed in the contaminant source area after removal of contaminated soil. The second and third wells will be installed in the apparent down gradient locations from the contaminant source area adjacent to the property boundary.

The well construction will consist of one fifteen-foot section of factory-cut 0.010 inch slotted screen in each well casing screened 10 ft below the water table and 5 ft above. A two-inch diameter, schedule 40 PVC screen and riser pipe will be placed into each borehole, with the bottom cap of the well screen resting on the bottom of the borehole. The annulus will be backfilled with clean 10/20 silica sand to a depth approximately two feet above the screen. An approximate two foot thick granular bentonite seal will be placed above the sand and the remaining annular space will be backfilled with bentonite chips or grout depending on depth. The riser pipes will be terminated below grade, sealed with lockable water-tight caps and covered with bolt-down flush-mounted protective well covers. Each monitor well will be developed by surging and bailing. Bailing will continue until pH and specific conductivity have stabilized and the turbidity has been reduced to the greatest extent or until bailed dry.

Prior to sample collection each well will be purged of three casing volumes or purged dry. A dedicated disposable bailer will be used for sample collection from each well. Groundwater samples will be packed in chilled coolers with a complete chain-of-custody form and delivered to an approved laboratory. Groundwater samples will be analyzed for BTEX (EPA Method 8020) and TPH (EPA Method 8015 Mod). Analytical results for groundwater samples collected from these wells will be used to determine if an abatement plan is required..

3. REMEDIATION/ASSESSMENT REPORT

A report will be prepared to document the site activities at the conclusion of soil excavation/disposal and groundwater assessment. The report will contain information concerning the quantity of excavated soil, abatement confirmation sampling results, and soil manifests documenting the final disposition of impacted soils. Groundwater assessment data will also be presented to document compliance or violation of OCD groundwater standards. The report will be submitted to the NMEMNR/OCD to provide them with the soil and groundwater characterization data and determine if any further remedial action is required at the site.

4. TENTATIVE SCHEDULE

The following is proposed for the source removal and monitor well installation.

Project/Task	**Schedule**
Remediation Work Plan	Week of 1/19/98
Field Work (Excavation Activities)	Week of 2/23/98
Monitor Well Installations	Week of 3/9/98
Remediation/Assessment Report	Week 4/20/98

REFERENCES

EPA, 1996. *EPA Region 6 Human Health Media-Specific Screening Levels*, U.S. Environmental Protection Agency, Region 6, Dallas, Texas, October 1996.

HES, 1997. *Site Investigation Report*, Wellex/Otis Engineering Facility, Halliburton Energy Services, 2600 East Bloomfield Hwy, Farmington, New Mexico, October 30, 1997.

OCD, 1993. Guidelines for Remediation of Leaks, Spills and Releases, New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division, Santa Fe, New Mexico, August 13, 1993.

Brown & Root *Services*

2300 Buena Vista S.E., / Suite 110 / Albuquerque, NM 87106 / (505) 247-4933 / Fax: (505) 247-8151

October 30, 1997

ABQ-97-0206

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RECEIVED
OCT 3 1 1997
Environmental Bureau
Oil Conservation Division

Attention: William C. Olson, Hydrogeologist
Environmental Bureau

Reference: Old Wellex Yard
Farmington, New Mexico

Subject: Transmittal of Site Investigation Report

Dear William Olson,

On behalf of Halliburton Energy Services (HES), Brown and Root Environment (B&RE) is submitting the attached Site Investigation Report to document findings associated with the former oil water separator at the Old Wellex Yard, 2600 Bloomfield Hwy, Farmington, New Mexico. This report addresses the requirements specified in your August 13, 1997.

If additional information is required, I can be reached at (505) 247-4933 during business hours.

Sincerely,

Brad Sumrall

Brad Sumrall, E.I.T.

cc: Joe Larkin, HSE Regional Manager
Denny Faust, OCD Aztec Area Office
Project Files

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1 Rio Brazos Road
...c, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division

2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Form C-138
Originated 8/8/95

Submit Original
Plus 1 Copy
to appropriate
District Office

Env JN: _____

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: ☐ Non-Exempt: ☒ Verbal Approval Received: Yes ☐ No ☒	4. Generator Wellco
	5. Originating Site Main Yard
2. Management Facility Destination Envirotech Soil RemediationFac. Landfarm #2	6. Transporter TBA
3. Address of Facility Operator 5796 U.S. Highway 64 Farmington, NM 87401	8. State New Mexico
7. Location of Material (Street Address or ULSTR)	2650 Bloomfield Hwy. Farmington, New Mexico

9. Circle One:

A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job.

B. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved.

All transporters must certify the wastes delivered are only those consigned for transport.

BRIEF DESCRIPTION OF MATERIAL:

Former oil/water Separator sump. Hydrocarbon Impacted Soil

TCLP w/ H&P. ATTACHED.

4,4 DDD Hazardous U Listed Waste U060 40 CFR 261.33

MJK

RECEIVED
OCT 21 1997
Environmental Bureau
Oil Conservation Division

RECEIVED
OCT 20 1997
OIL CON. DIV.
DIST. 3

Estimated Volume 200 cy Known Volume (to be entered by the operator at the end of the haul) _____ cy

SIGNATURE: Harlan M. Brown Waste Management Facility Authorized Agent TITLE: Landfarm Manager DATE: 10-20-97

TYPE OR PRINT NAME: Harlan M. Brown TELEPHONE NO. (505)632-0615

(This space for State Use)

APPROVED BY: Denny G. Foust TITLE: Geologist DATE: 10/20/97

DENIED MJK

APPROVED BY: _____ TITLE: _____ DATE: 10/22/97

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:
Halliburton Energy Services 4109 E. Main Street Farmington, NM 87499	Envirotech Soil Remediation Facility Landfarm #2 Hilltop, New Mexico
3. Originating Site (name):	**Location of the Waste (Street address &/or ULSTR):**
Wellex Site Attach list of originating sites as appropriate	2600 East Bloomfield Highway Farmington, NM 87401
4. Source and Description of Waste	
Former Oil/Water Seperator Hydrocarbon Impacted Soil	

I, L. Bradford Sumrall representative for:
(Print Name)
Halliburton Energy Services do hereby certify that, according to the Resource Conservation and Recovery Act (RCRA) and Environmental Protection Agency's July, 1988, regulatory determination, the above described waste is: (Check appropriate classification)

___ **EXEMPT** oilfield waste

XX **NON-EXEMPT** oilfield waste which is non-hazardous by characteristic analysis or by product identification

and that nothing has been added to the exempt or non-exempt non-hazardous waste defined above.

For **NON-EXEMPT** waste only the following documentation is attached (check appropriate items):

___ MSDS Information
XX RCRA Hazardous Waste Analysis
___ Chain of Custody
___ Other (description):

Name (Original Signature): L Bradford Sumrall

Title: Environmental Engineer

Date: 10/16/97

Maximum Contaminant Concentrations For Toxicity Characteristic Wastes

Waste Stream Constituent	Concentration (milligrams/liter, mg/l)	EPA HW No.	Waste Stream Constituent	Concentration (milligrams/liter, mg/l)	EPA HW No.
✓* Arsenic	5.0	D004	✓Hexachlorobenzene	0.13	D032
✓* Barium	100.0	D005	✓Hexachlorobutadiene	0.5	D033
✓Benzene	0.5	D018	✓Hexachloroethane	3.0	D034
✓* Cadmium	1.0	D006	✓* Lead	5.0	D008
✓Carbon Tetrachloride	0.5	D019	✓* Lindane	0.4	D013 Pesticide
Pesticide ✓Chlordane	0.03	D020	✓* Mercury	0.2	D009
✓Chlorobenzene	100.0	D021	✓* Methoxychlor	10.0	D014 Pesticide
✓Chloroform	6.0	D022	✓Methyl ethyl ketone	200.0	D035
✓* Chromium	5.0	D007	✓Nitrobenzene	2.0	D036
Cresol	200.0	D026	✓Pentachlorophenol	100.0	D037
✓ m-Cresol	200.0	D024	✓Pyridine	5.0	D038
✓ o-Cresol	200.0	D023	✓* Selenium	1.0	D010
✓ p-Cresol	200.0	D025	✓* Silver	5.0	D011
Herbicide* 2,4-D	10.0	D016	✓* 2,4,5-TP (Silvex)	1.0	D017 Herbicide
✓1,4-Dichlorobenzene	7.5	D027	✓Tetrachloroethylene	0.7	D039
✓1,2-Dichloroethane	0.5	D028	✓* Toxaphene	0.5	D015 Pesticide
✓1,1-Dichloroethylene	0.7	D029	✓Trichloroethylene	0.5	D040
✓2,4-Dinitrotoluene	0.13	D030	✓2,4,5-Trichlorophenol	400.0	D041
Pesticide ✓Endrin	0.02	D012	✓2,4,6-Trichlorophenol	2.0	D042
Pesticide ✓Heptachlor	0.008	D031	✓Vinyl chloride	0.2	D043

*–EP Toxic wastes; TCLP must now be utilized for characterizing these wastes

Quanterra
Environmental Services

Chlorinated Pesticides and PCB's
Target Compound List (TCL)
Method 8080

Client Name: Brown and Root Environmental
Client ID: HX20-SB04-15
Lab ID: 056857-0009-SA
Matrix: SOLID Sampled: 04 SEP 97 Prepared: 18 SEP 97
Authorized: 08 SEP 97 Received: 06 SEP 97 Analyzed: 28 SEP 97

Parameter	Result	Dry Weight Units	Reporting Limit
Aldrin	ND	ug/kg	1.9
Aroclor 1016	ND	ug/kg	36
Aroclor 1221	ND	ug/kg	36
Aroclor 1232	ND	ug/kg	36
Aroclor 1242	ND	ug/kg	36
Aroclor 1248	ND	ug/kg	36
Aroclor 1254	ND	ug/kg	36
Aroclor 1260	ND	ug/kg	36
alpha-BHC	ND	ug/kg	1.9
beta-BHC	ND	ug/kg	1.9
delta-BHC	ND	ug/kg	1.9
gamma-BHC (Lindane)	ND	ug/kg	1.9
alpha-Chlordane	ND	ug/kg	1.9
gamma-Chlordane	ND	ug/kg	1.9
4,4'-DDD	4.1	ug/kg	3.6
4,4'-DDE	4.6	ug/kg	3.6
4,4'-DDT	ND	ug/kg	3.6
Dieldrin	ND	ug/kg	3.6
Endosulfan I	ND	ug/kg	1.9
Endosulfan II	ND	ug/kg	3.6
Endosulfan sulfate	ND	ug/kg	3.6
Endrin	ND	ug/kg	3.6
Endrin ketone	ND	ug/kg	3.6
Heptachlor	ND	ug/kg	1.9
Heptachlor epoxide	ND	ug/kg	1.9
Methoxychlor	ND	ug/kg	19
Toxaphene	ND	ug/kg	190

Surrogate	Recovery		Limits
Tetrachloro-m-xylene	71	%	39-105
Dibutyl chlorendate	45	%	51-115
Decachlorobiphenyl	43	%	70-126

Percent moisture is 8.8%. All results and limits are reported on a dry weight basis.
Dilution factor is 1.0. All results and limits are corrected for dilution.

ND = Not Detected

Reported By: Dianna Link Approved By: Audrey Cornell

Quanterra
Environmental Services

Chlorinated Herbicides
SW-846 List
Method 8150

Client Name: Brown and Root Environmental
Client ID: HX20-SB04-15
Lab ID: 056857-0009-SA
Matrix: SOLID
Authorized: 08 SEP 97
Sampled: 04 SEP 97
Received: 06 SEP 97
Prepared: 18 SEP 97
Analyzed: 25 SEP 97

Parameter	Result	Dry Weight Units	Reporting Limit
2,4-D	ND	ug/kg	44
2,4-DB	ND	ug/kg	110
2,4,5-T	ND	ug/kg	11
2,4,5-TP (Silvex)	ND	ug/kg	11
Dalapon	ND	ug/kg	110
Dicamba	ND	ug/kg	11
Dichlorprop	ND	ug/kg	22
Dinoseb	ND	ug/kg	22
MCPA	ND	ug/kg	5500
MCPP	ND	ug/kg	5500

Surrogate	Recovery		Limits
DCAA	127	%	39-113

Percent moisture is 8.8%. All results and limits are reported on a dry weight basis.
Dilution factor is 1.0. All results and limits are corrected for dilution.

ND = Not Detected

Reported By: Andy Burcham
Approved By: Audrey Cornell

Quanterra
Environmental Services

Volatile Organic Toxicity Characteristic List
TCLP Leachate
Method 8240B

Client Name: Brown and Root Environmental
Client ID: HX20-SB04-15
Lab ID: 056857-0009-SA
Matrix: SOLID
Authorized: 08 SEP 97
Sampled: 04 SEP 97
Received: 06 SEP 97
Leached: 11 SEP 97
Prepared: 11 SEP 97
Analyzed: 15 SEP 97

Parameter	Result	Units	Reporting Limit
Benzene	ND	mg/L	0.050
2-Butanone	ND	mg/L	0.20
Carbon tetrachloride	ND	mg/L	0.050
Chlorobenzene	ND	mg/L	0.050
Chloroform	ND	mg/L	0.050
1,2-Dichloroethane	ND	mg/L	0.050
1,1-Dichloroethene	ND	mg/L	0.050
Tetrachloroethene	ND	mg/L	0.050
Trichloroethene	ND	mg/L	0.050
Vinyl chloride	ND	mg/L	0.10

Surrogate	Recovery		Limits
1,2-Dichloroethane-d4	92	%	80-120
4-Bromofluorobenzene	102	%	86-115
Toluene-d8	97	%	88-110

Dilution factor is 1.0. All results and limits are corrected for dilution.

ND = Not Detected

Reported By: Sandra Jones
Approved By: Lynn S. Calvin

Quanterra
Environmental Services

Semivolatile Organics / TCLP
TCLP Leachate
Method 8270B

Client Name: Brown and Root Environmental
Client ID: HX20-SB04-15
Lab ID: 056857-0009-SA
Matrix: SOLID
Authorized: 08 SEP 97
Sampled: 04 SEP 97
Received: 06 SEP 97
Leached: 18 SEP 97
Prepared: 21 SEP 97
Analyzed: 25 SEP 97

Parameter	Result	Units	Reporting Limit
1,4-Dichlorobenzene	ND	mg/L	0.050
2,4-Dinitrotoluene	ND	mg/L	0.050
Hexachlorobenzene	ND	mg/L	0.050
Hexachlorobutadiene	ND	mg/L	0.050
Hexachloroethane	ND	mg/L	0.050
2-Methylphenol	ND	mg/L	0.050
3/4-Methylphenol	ND	mg/L	0.050
Nitrobenzene	ND	mg/L	0.050
Pentachlorophenol	ND	mg/L	0.25
Pyridine	ND	mg/L	0.10
2,4,5-Trichlorophenol	ND	mg/L	0.050
2,4,6-Trichlorophenol	ND	mg/L	0.050

Surrogate	Recovery		Limits
Nitrobenzene-d5	72	%	57-102
2-Fluorobiphenyl	69	%	43-116
Terphenyl-d14	64	%	43-128
2-Fluorophenol	74	%	26-104
Phenol-d5	77	%	33-117
2,4,6-Tribromophenol	81	%	37-117

Dilution factor is 1.0. All results and limits are corrected for dilution.

ND = Not Detected

Reported By: Tom Claeys

Approved By: Audrey Cornell

Quanterra
Environmental Services

Metals
TCLP Leachate

Client Name: Brown and Root Environmental
Client ID: HX20-SB04-15
Lab ID: 056857-0009-SA
Matrix: SOLID
Authorized: 08 SEP 97

Sampled: 04 SEP 97
Prepared: See Below

Received: 06 SEP 97
Analyzed: See Below
Leached: 18 SEP 97

Parameter	Result Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Arsenic	ND	1.0	0.50	mg/L	6010A	19 SEP 97	22 SEP 97
Barium	ND	1.0	10.0	mg/L	6010A	19 SEP 97	22 SEP 97
Cadmium	ND	1.0	0.10	mg/L	6010A	19 SEP 97	22 SEP 97
Chromium	ND	1.0	0.50	mg/L	6010A	19 SEP 97	22 SEP 97
Lead	ND	1.0	0.50	mg/L	6010A	19 SEP 97	22 SEP 97
Selenium	ND	1.0	0.25	mg/L	6010A	19 SEP 97	22 SEP 97
Silver	ND	1.0	0.50	mg/L	6010A	19 SEP 97	22 SEP 97
Mercury	ND	1.0	0.00020	mg/L	7470	23 SEP 97	24 SEP 97

ND = Not Detected

Reported By: Harvey Pierre

Approved By: Richard Persichitte

Quanterra
Environmental Services

General Inorganics

Client Name: Brown and Root Environmental
Client ID: HX20-SB04-15
Lab ID: 056857-0009-SA
Matrix: SOLID — Sampled: 04 SEP 97 — Received: 06 SEP 97
Authorized: 08 SEP 97 — Prepared: See Below — Analyzed: See Below

Parameter	Result	Qual	Dil	RL	Units	Test Method	Prepared Date	Analyzed Date
Cyanide, Reactive	ND		1.0	0.10	mg/kg	9010A/901	17 SEP 97	18 SEP 97
Ignitability	NO		1.0			SW846 Cha	NA	23 SEP 97
pH	8.5		1.0	--	units	9045B	24 SEP 97	24 SEP 97
Sulfide, Reactive	ND		2.0	50.0	mg/kg	9030A	17 SEP 97	17 SEP 97

ND = Not Detected

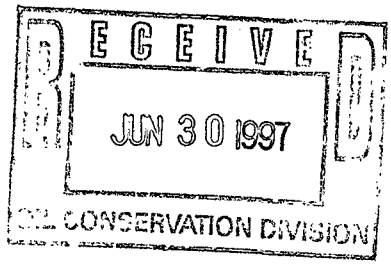
Reported By: Cheryl Jones — Approved By: Roxanne Sullivan

Brown & Root *Services*

2300 Buena Vista S.E., / Suite 110 / Albuquerque, NM 87106 / (505) 247-4933 / Fax: (505) 247-8151

June 27, 1997

ABQ-97-0140



State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Attention: William C. Olson, Hydrogeologist
Environmental Bureau

Reference: Old Wellex Yard
Farmington, New Mexico

Subject: Transmittal of Work Plan

Dear William Olson,

On behalf of Halliburton Energy Services (HES), Brown and Root Environment (B&RE) is submitting the attached Investigative Work Plan to determine the extent of hydrocarbon impacted soil associated with the former presence of an oil water separator at the Old Wellex Yard at 2600 Bloomfield Hwy in Farmington, New Mexico. The Work Plan was developed in response to the NMEMNRD letter dated March 11, 1997.

In that letter, you also requested HES provide information related to the type, nature, volume and disposition of wastes generated during the August 1995 removal of the oil water separator. Conversations with OVAC personnel, the company that performed the oil water separator removal, indicated that the separator consisted of cinderblock walls and an earthen bottom. The cinderblocks from the separator walls were removed and discarded as construction debris in the local landfill. The lines to the separator were capped and no wastes were removed from the separator. Clean fill was placed in the location of the separator. Neither sampling and analysis nor remediation of the soil surrounding the oil water separator was performed.

If additional information is required, you can contact Todd Dean at (405) 257-4353 or me at (505) 247-4933.

Sincerely,

Charles A. Remkes, P.E.

cc: Todd Dean, HSE Regional Manager

INVESTIGATIVE WORK PLAN

to

DETERMINE THE EXTENT OF

HYDROCARBON IMPACTED SOIL

at

HALLIBURTON ENERGY SERVICES
2600 BLOOMFIELD HWY
FARMINGTON, NEW MEXICO

Submitted to:

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

2040 S. Pacheco
Santa Fe, New Mexico 87505

June 27, 1997

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Figures

Acronyms

bgs	below ground surface
HES	Halliburton Energy Services
MSL	mean sea level
NMEMNRD	New Mexico Energy, Minerals, and Natural Resources Department
OWS	oil water separator
SVOCs	semi-volatile organic compounds
TCLP	toxicity characteristic leaching procedures
TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds

Introduction

This work plan was prepared to determine the extent of petroleum and metals contamination associated with the former presence of an oil/water separator at the Halliburton Energy Services (HES) facility located at 2600 Bloomfield Highway, Farmington, New Mexico. The need to determine the extent of contamination at the facility was identified by the New Mexico Energy, Minerals and Natural Resources Department (NMEMNRD) in a March 11, 1997, letter. The NMEMNRD is the state regulatory agency having jurisdiction on the past and present operations at this facility.

Site Description and Environmental Setting

Site Description

The facility is located on a 150 ft by 290 ft fenced parcel identified as Section 14 of Township 29 North and Range 13 West in San Juan County, New Mexico. The facility is no longer operating. The HES facility formerly operated as both a Wellex and an Otis Engineering facility. While operating under Otis Engineering, an oil/water separator (OWS) was present at the facility. The OWS was removed during remedial activities in August 1995 and was not replaced. The walls of the OWS were constructed from cinder blocks; the OWS did not, however, have a bottom. Contamination associated with the OWS is the focus of the investigation for this work plan.

Environmental Setting

The HES facility is approximately 1.5 mi southeast of Farmington, New Mexico within a commercial complex. It is approximately 5,338 ft above MSL. The facility is underlain by Garland series soil. Garland soil is formed in mixed alluvial sediments. Typically, the surface layer is brown loam about 4 in thick. The subsoil is brown clay loam about 20 in thick. The substratum is light brownish gray very gravelly loamy sand and multicolored very gravelly sand. Permeability of this soil is moderate to a depth of 24 in and rapid below this depth. According to regulatory personnel, the area in the immediate vicinity of the HES facility is underlain by boulders and groundwater for this area is approximately 28 ft bgs. The closest perennial surface water is the Animas River approximately 1 mi to the northwest.

Previous Investigations

Investigations have been performed at the facility in 1993 and 1995. In August 1993, OVAC, Inc. performed an investigation at the facility which included soil sampling and analysis. Eleven soil samples were collected and analyzed for volatile organic compounds (VOCs), toxicity characteristic leaching procedure (TCLP) metals, total

petroleum hydrocarbons (TPH) and pH. Samples were collected at depths varying from 2 ft to 12 ft bgs and at locations throughout the facility. Results of the investigations showed petroleum hydrocarbons were present in samples collected in the vicinity of the OWS; one sample collected along the east side of OWS at a depth of 9 ft bgs had TPH concentrations of 4,200 ppm; one sample collected approximately 20 ft southeast of the OWS at 3 ft bgs had TPH concentrations of 807 ppm. The 1993 investigation concluded that the OWS was the source of the petroleum hydrocarbons to the east and southeast. The investigation also estimated that between 75 to 80 yards of soil had been impacted.

As a result of the 1993 investigation, OVAC performed a cosmetic cleanup at the facility in August 1995, during which the OWS was removed and the lines were plugged. The presence of petroleum hydrocarbons in the surrounding soil was visually confirmed, however no sampling was performed to quantify concentrations. Neither impacted soil nor wastes from the OWS were removed. According to OVAC personnel, the cinderblock walls were excavated and the cinderblocks were disposed as construction wastes in the local landfill.

Data Gaps

Though sampling and analysis has identified petroleum hydrocarbons to be present in the soil surrounding the former location of the OWS, neither the horizontal nor the vertical extent of petroleum hydrocarbons in the soil has been determined. Groundwater samples have not been collected to determine if groundwater has been impacted.

Work Plan and Rationale

A phased approach is proposed for this investigation. Soil samples will be collected first. If soil analyses indicate that groundwater may be impacted, a monitor well will be installed and groundwater samples will be collected and analyzed

Sampling and Analysis

Sampling and analysis will be used to define the horizontal and vertical extent of petroleum hydrocarbons and metals in the soil. To determine the vertical extent of contamination, samples will be collected from locations where hydrocarbons were previously detected. This includes the soil directly beneath the former location of the OWS and locations east and southeast of it (see Figure 1). To determine the horizontal extent of hydrocarbons, soil samples will be collected from locations approximately 10 ft east and southeast of where contamination was previously detected and 10 ft north of the OWS (see Figure 1).

Samples will be collected using an excavator since, according to regulatory officials, drilling or hydropunching (i.e., hollow stem augers or geoprobes) would not be feasible due to the presence of large boulders. The soil will be excavated in 5 ft intervals.

HALLIBURTON ENERGY SERVICES, 2600 BLOOMFIELD HWY, FARMINGTON, NM

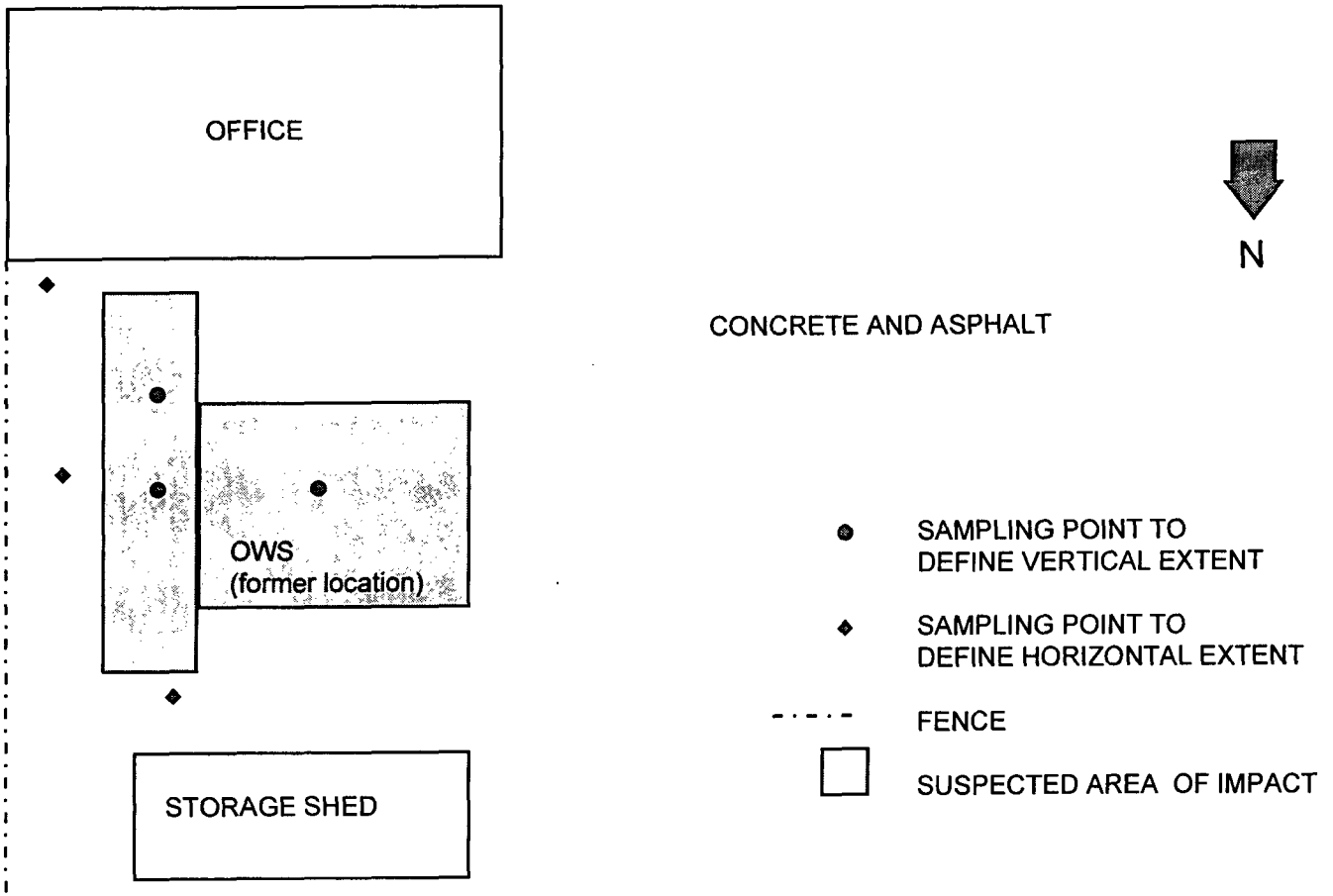

Figure 1. Proposed Soil Sampling Locations

not to scale

Excavated soil from each interval will be field examined for stains and odors indicative of petroleum hydrocarbons. A flame ionization detector (FID) will also be used for field detection of petroleum hydrocarbons in the soil. Samples from each interval will be collected from the portion of the excavated soil having the highest FID readings using zero headspace and/or having the heaviest stains or strongest odors. Excavation will continue down to a depth of 20 ft bgs or to where no staining or odors are observed and/or FID readings are below 100 ppm, whichever is deeper. These samples will be properly preserved and stored before being submitted to an approved laboratory and analyzed for VOCs, semi-volatile organic compounds (SVOCs), and TCLP metals. Analytical results will be evaluated to determine if additional soil sampling and/or groundwater sampling is required.

Excavated Materials Management

Analytical results will also be used to characterize excavated materials. The excavated material will be managed as potentially impacted soil until analytical results indicate otherwise. The excavated material will be placed on and covered by 10-mil polyethylene sheeting during field activities. After sampling is completed the excavation will be lined with 10-mil polyethylene sheeting and the excavated soil will be placed in the lined excavation. After being characterized, the material will, if allowable, remain on-site in the lined excavation or, if required, be disposed off-site in an approved manner.

Assessment Report

After sampling and analysis, an assessment report will be prepared and submitted to the NMEMNRD for review and comments. The report will provide a description of the investigative activities and will include general site characteristics, soil characteristics, ground water quality (if required).

REFERENCES

OVAC, 1995. *Environmental Assessment Report of Otis Engineering 2600 Bloomfield Highway Farmington, N. Mexico,* Kirby Odell Vinson and Praveen Udtha, OVAC, Inc., Lake Charles, LA.

New Mexico Energy, Minerals and Natural Resources Department, 1997. *March 11, 1997 Letter Referencing Old Wellex Yard Farmington, New Mexico,* William C. Olson, Hydrogeologist Environmental Bureau, NMEMNRD, Santa Fe, NM.

Remkes, Charles A., 1997. *Personal Communications with Herb McMullom, OVAC Project Manager.* June 23 and 27, 1997.

Oil Conservation Division, NMEMNRD, 1993. *Guidelines for Remediation of Leaks, Spills and Releases.* August 13, 1993.

HALLIBURTON

HALLIBURTON ENERGY SERVICES

Post Office Drawer 1431 / 1015 Bois D'Arc Street / Duncan, Oklahoma 73536-0108 / Tel: 405-251-4358 / Fax: 405-251-3969

May 23, 1997

Mr. William Olson
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Time Extension Request for workplan development at Halliburton's Old Wellex Yard, Farmington, NM

Dear Mr. Olson,

On April 10, 1997 you granted Halliburton a time extension for development and submittal of a workplan for further investigation around the oil/water separator at the referenced facility. Since that time, we have switched environmental consulting companies and the ensuring transition period has caused a short delay in developing the workplan for this facility. Therefore, I would like to request another time extension - until June 30, 1997. Our new consultant has the pertinent information, is familiar with the facility and should have no trouble meeting this new date. Once again, I thank you for your patience.

I am available at your convenience if you have any questions or comments on this matter. I can be reached at (405) 251-4353.

Sincerely,

Todd J. Dean, P.E.
Environmental Engineer

Verbal approval to voice mail on 6/6/97 at 1530 hrs
Will Olson

tjd26.97

HALLIBURTON
HALLIBURTON ENERGY SERVICES
Post Office Drawer 1431 / 1015 Bois D' Arc Street / Duncan, Oklahoma 73536-0108 / Tel: 405-251-4358 / Fax: 405-251-3969

April 3, 1997

Mr. William C. Olson
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: NM OCD letter of March 11, 1997 pertaining to
Halliburton's Old Wellex Yard, Farmington, NM

Dear Mr. Olson,

In accordance with our telephone conversation today, I would like to request a time extension for submitting the information you requested in the referenced letter. I intend to have the disposal information and a complete workplan (for further investigation around the separator) to you by May 30, 1997. I appreciate your patience.

I am available at your convenience if you have any questions or comments on this matter. I can be reached at (405) 251-4353.

Sincerely,

Todd J. Dean, P.E.
Environmental Engineer

4/10/97
1430 hrs.
Verbal approval to
Todd Dean.
Wm Olson

tjd16.97/tcd

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 11, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-277

Mr. Matt D. Ratliff
Environmental Coordinator
Halliburton Energy Services
P.O. Drawer 1431
Duncan, Oklahoma 73536-0108

RE: OLD WELLEX YARD
FARMINGTON, NEW MEXICO

Dear Mr. Ratliff:

The New Mexico Oil Conservation Division (OCD) has reviewed Halliburton Energy Services (HES) January 14, 1997 "OLD WELLEX YARD, FARMINGTON, NEW MEXICO" and undated "ENVIRONMENTAL ASSESSMENT OF OTIS ENGINEERING, 2600 BLOOMFIELD HIGHWAY, FARMINGTON, N.MEXICO". These documents contain the results of HES's 1993 investigation of contamination and 1995 remedial actions related to the Old Wellex/Otis Engineering facility.

Please provide the OCD with the following information by April 30, 1997:

1. The type, nature (including hazardous characteristic laboratory analyses of liquid and solid wastes), volume, and disposition of all wastes generated during the August 1995 remedial actions.

2. A work plan to determine the extent of petroleum (ie. total petroleum hydrocarbon and 1,2 dichloroethane) and metals (ie. lead) contamination which exceeds either OCD guidelines or New Mexico Water Quality Control Commission standards.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec District Office

P 26 269 277

US Postal Service

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PS Form 3800, April 1995

Bill Olson

HALLIBURTON

HALLIBURTON ENERGY SERVICES

Post Office Drawer 1431 / 1015 Bois D' Arc Street / Duncan, Oklahoma 73536-0108 / Tel: 405-251-4358 / Fax: 405-251-3969

January 14, 1997

NM Energy Minerals & Natural Resources Department
Oil Conservation Division
Aztec District Office
Attn: Denny G. Foust
100 Rio Brazos Rd.
Aztec, NM 87410

RE: Old Wellex Yard, Farmington, New Mexico

Dear Mr. Foust,

As per your request in your letter dated December 20, 1996, I am forwarding a copy of the Environmental Assessment which was performed for the Halliburton excess property site located at 2600 Bloomfield Highway in Farmington. The assessment shows that a small area of contamination was defined in and around the old oil/water separator. As stated on page 8, Section 4.0 of the report, and again on page 12, Section 5.0, approximately 75 to 80 yards of soil is estimated to be impacted with Total Petroleum Hydrocarbons and small amounts of other BTEX compounds.

Our records show that in August, 1995, additional cosmetic work was done on the facility. The cosmetic work consisted of cleaning out the sump, pressure washing the floors inside the shop, removing any and all trash or debris, cleaning walls, triple rinsing and disposing of a poly tank, and general policing of the area in preparation of possibly leasing the site. Radioactive source storage silos were also plugged with concrete or removed from the ground and disposed. At the time the cosmetic clean-up was undertaken, the oil/water separator on the north side of the building was also removed. When the separator was removed, the small amount of contamination noted in the assessment was confirmed, however, no remediation took place. The source of the contamination was removed and all drain lines leading to the sump were plugged and abandoned. No formal report was forwarded by OVAC for this cosmetic clean-up.

Halliburton does not believe that the small amount of contamination present at the site poses a threat to human health or the environment, however if you believe additional assessment is necessary, please do not hesitate to contact me.

Sincerely,

Matt D. Ratliff
Environmental Coordinator

MDR1.97doc/tcd

OVAC, Inc.

P.O. Box 16584
Lake Charles, Louisiana 70616
(318) 433-1602
FAX (318) 436-4144

ENVIRONMENTAL ASSESSMENT

OF:

OTIS ENGINEERING
2600 BLOOMFIELD HIGHWAY
FARMINGTON, N.MEXICO

PREPARED FOR:

Mr. LARRY SIMS

HALLIBURTON ENERGY SERVICES
HEALTH, SAFETY, AND ENVIRONMENT DEPARTMENT
DUNCAN, OKLAHOMA

PREPARED BY:

KIRBY ODELL VINSON
PRESIDENT

PRAVEEN UDTHA
ENVIRONMENTAL ENG.

OVAC, Inc.

P.O. Box 16584
Lake Charles. Louisiana 70616
(318) 433-1602
FAX (318) 436-4144

ENVIRONMENTAL ASSESSMENT

OF:

OTIS ENGINEERING
2600 BLOOMFIELD HIGHWAY
FARMINGTON, N.MEXICO

LIMITATIONS AND SERVICE RESTRAINTS

This report is submitted with the understanding that the assessment may yield inconclusive results in all areas due to available information and/or records. The information furnished by others is believed to be reliable, but no warranty is given for its accuracy.

All professional opinions presented in this report are based on information made available to OVAC, Inc. either by review of data provided by others or data gathered by OVAC, Inc. personnel.

OVAC, Inc. affirms that data gathered and presented by OVAC, Inc. in this report were collected in an appropriate manner in accordance with generally accepted methods and practices. OVAC, Inc. cannot be responsible for decisions made solely on the basis of economic factors.

Conditions reported in this assessment are as found at the time of assessment, unless otherwise stated.

OVAC, Inc. analyzed only the substances, conditions, and locations described in the report at the time indicated. No references regarding other substances, conditions, location or time can be made unless specifically stated in this report.

All engineering designs are assumed to be correct. Plot plan and illustrative materials in this report are included only to assist the reader in visualizing the property.

Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any party other than the party to whom it is addressed without the expressed written consent of OVAC, Inc.

The environmental assessors herein by reason of this report are not required to give further consultation, testimony, or be in attendance in court with reference to the property in question unless arrangements have been previously made.

This report may identify, apply or advise as to environmental laws and regulations, However, it must be understood that the environmental personnel involved in this project are not attorneys.

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1.0 EXECUTIVE SUMMARY

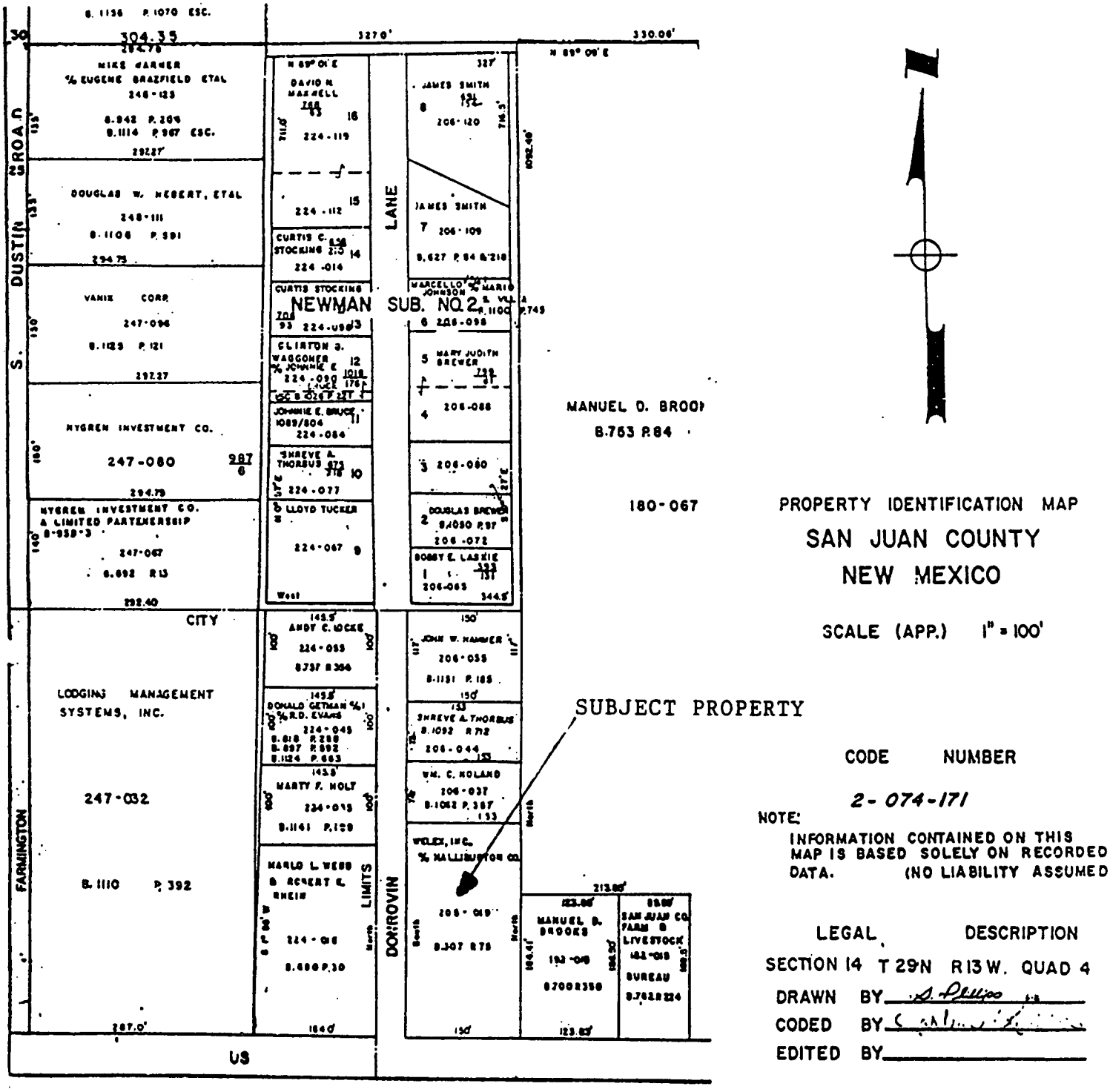
Ovac. Inc. was contracted to perform a phase II study on Otis Engineering's facility at Farmington. N. Mexico. As recorded in the San Juan County's tax accessors office at Aztec, N. Mexico the subject property is located in section 14 of township 29 north and range 13 west. The physical address of the property is 2600 Bloomfield Hwy, Farmington. N. Mexico. This report describes the sampling procedures. analyzes the environmental conditions. and details the best applicable remedial action.

On August 4. 1993 OVAC. Inc. performed a detailed investigation on the property. No UST's existed on the property. An above ground chemical storage tank was located in the southwest portion of the property on the asphalt parking lot. Otis's office to the east, a separator to the northeast. an earthen parking lot to the northwest. and a storage shed to the northeast were situated on the property. Apart from a few areas of surface contamination and oily sludge inside the separator. no significant signs of leaks or spills were visible on the property. Sampling was performed to confirm or deny the presence of any subsurface contamination.

During the assessment Otis Engineering's facility was divided into a grid and eleven soil samples were collected from different locations and depths. Samples collected were analyzed for VOC's. TCLP metals. Total Petroleum Hydrocarbons. and pH. Sample analysis showed minor subsurface environmental concerns around the separator. A total of 75 to 80 yds of soil is estimated to be impacted. Remediation is recommended. Based on volume estimates direct landfill is the most economically feasible remedial action.

2.0 INTRODUCTION

OVAC, Inc. was contracted to investigate the environmental conditions at Otis Engineering's facility in Farmington. N. Mexico. The physical description of the property is beginning at a point 1980 feet west and 38 feet north of the southeast corner of section 14. T. 29 N., R. 13 W., N.M.P.M., on the north right of way line of N.M. Highway No. 17. thence west 150 feet. thence north 290.4 feet. thence east 150 feet. thence south 290.4 feet to the point of beginning, containing 1.0 acres. more or less. said land being located in the southeast corner of the east 10 acres of the west one-half of the southwest quarter of the southeast quarter ($W^{1/2}SW^{1/4}SE^{1/4}$) of section 14. township 29 north. range 13 west. N.M.P.M., including water and ditch rights appurtenant there to. and EXPECTING all oil. gas. or minerals in. under. or a part of said tract. The copy of warranty deed is in the analytical section. Figure 1 shows the property location in the City of Farmington. Figure 2 shows the location of the property on the U.S.G.S. Topographical Map. Otis Engineering currently operates this facility. The oil water separator contains approximately 4 yds of sludge. A detailed study of the property shows minor surface and subsurface environmental concerns. Table 1 shows the site lithology on the property during the investigation. The lithology consists of rocks and dark brown sand. No groundwater was encountered during the investigation.



PROPERTY IDENTIFICATION MAP

SAN JUAN COUNTY

NEW MEXICO

SCALE (APP.) 1" = 100'

CODE NUMBER

2-074-171

NOTE:
INFORMATION CONTAINED ON THIS MAP IS BASED SOLELY ON RECORDED DATA. (NO LIABILITY ASSUMED

LEGAL DESCRIPTION

SECTION 14 T 29N R 13 W. QUAD 4

DRAWN BY S. Perico

CODED BY

EDITED BY

Figure 1. Property Identification in the City of Farmington

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NORTH

SCALE 1:24000
7.5 MINUTE SERIES (TOPOGRAPHIC)

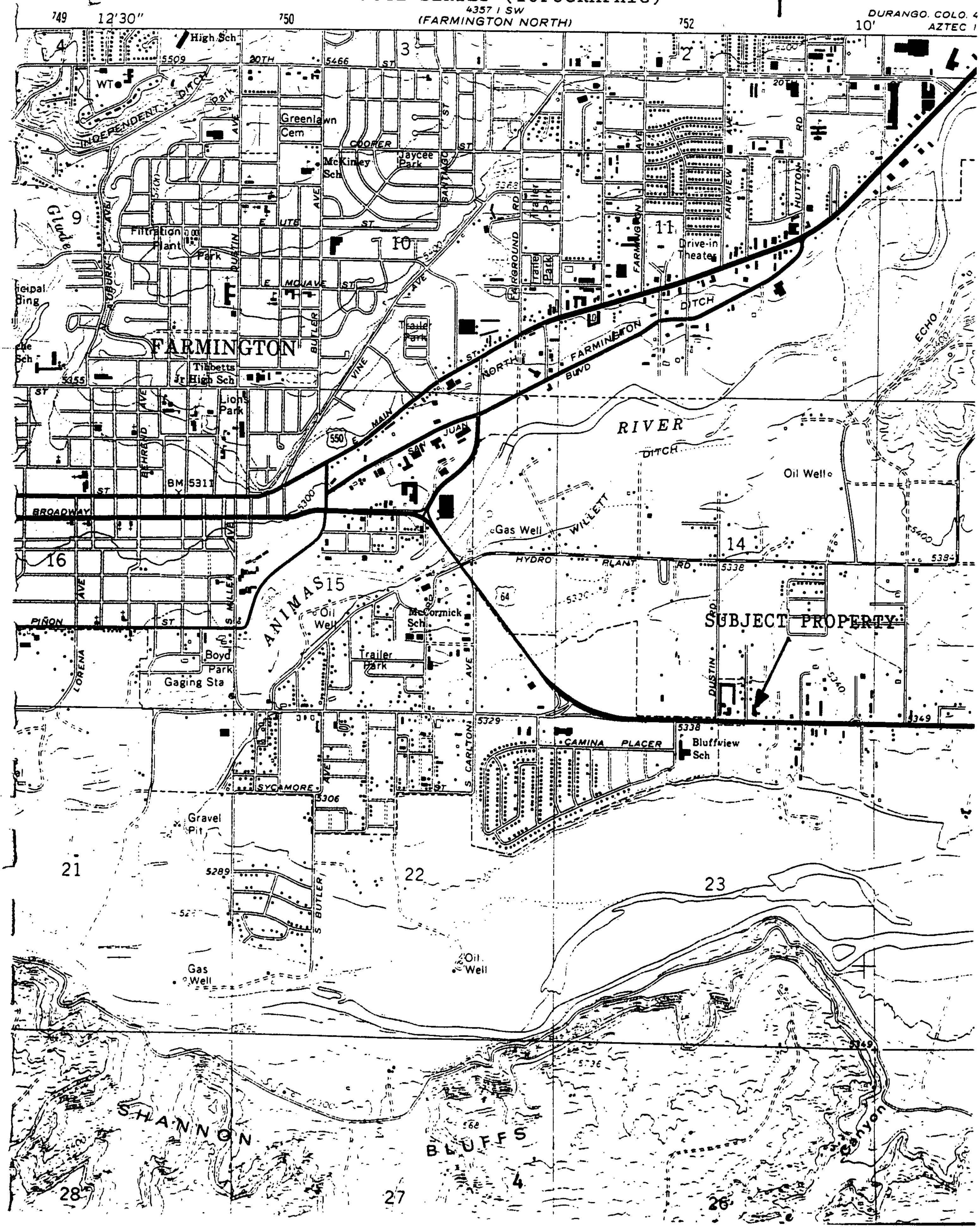


Table 1. Site Lithology

SAMPLE	TIME	DEPTH (feet)	LITHOLOGY
1AH	7:48 A.M.	8-9	Rocks/Dark Brown Sand
2BF 8	8:50 A.M.	8	Rocks/Dark Brown Sand
2BF 12	11:18 A.M.	12	Rocks/Dark Brown Sand
3CF 10	12:10 P.M.	10	Rocks/Dark Brown Sand
3CF 12	12:18 P.M.	12	Rocks/Dark Brown Sand
4DF$_{s}$	12:24 P.M.	8-9	Sludge
4DF$_{w/o}$	12:28 P.M	8-9	Water/Oil
5EF	1:20 P.M	3-3.5	Rocks/Dark Brown Sand
6FF	1:37 P.M	3-3.5	Rocks/Dark Brown Sand
7GF	2:00 P.M	3-3.5	Dark Brown Sand
8HF	2:03 P.M	2-3	Dark Brown Sand
9IF	2:20 P.M	2-3	Dark Brown Sand

3.0 SOIL CLASSIFICATION

According to Soil Survey Map of Aztec County. N.Mexico the soil within section 14 of township 29 north and range 13 west is of Garland series. This soil in the Garland series are classified as Typic Haplargids, fine-loamy over sandy or sandy-skeletal, mixed, mesic. These deep, well drained soils are on intermediate terraces and side slopes. The soil is formed in mixed alluvium. Slope is 0 to 3 percent. Elevation is 4,800 to 6,000 feet. The subdivision of soil in this area can be classified as Garland loam. Garland loam is a deep, well drained soil and is on terraces and sides of valleys. It formed in alluvium derived from mixed sources. Typically, the surface layer is brown loam about 4 inches thick. The subsoil is brown clay loam about 20 inches thick. The substratum to a depth of 60 inches or more is light brownish gray very gravelly loamy sand and multicolored very gravelly sand. Permeability of this Garland soil is moderate to a depth of 24 inches and rapid below this depth. Available water capacity is moderate. The soil profile of Garland series is shown in Table 2. Figure 3 shows the area enclosed in section 14 of township 29 north and range 13 west.

Table 2. Soil Profile of Garland Series

DEPTH	PROFILE
0 to 4 inches	Brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few fine continuous pores; noneffervescent; moderately alkaline; clear smooth boundary.
4 to 11 inches	Brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; weak medium and fine sub-angular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few fine and medium continuous pores; slightly effervescent; moderately alkaline; clear smooth boundary.
11 to 24 inches	Brown 97.5YR 5/4) clay loam, dark brown (7.5YR 4/4) moist; weak medium and fine angular blocky structure; hard, friable, sticky and plastic; few fine and medium roots; few fine and medium continuous pores; slightly effervescent; moderately alkaline; clear wavy boundary.
24 to 45 inches	Light brownish gray (10YR 6/2) extremely gravelly loamy sand, brown (10YR 4/3) moist; single grained; loose dry and moist; few fine roots; common medium interstitial pores; disseminately alkaline; gradual wavy boundary.
45 to 81 inches	Multicolored extremely gravelly sand; single grained; loose dry ;and moist; common medium interstitial pores; disseminated calcium carbonate; strongly effervescent; moderately alkaline.

4.0 SITE ASSESSMENT

Eleven soil samples were collected on the subject property during the investigation. Figure 3 shows soil sample locations on site. Table 3 shows the sample I.D., depth, and direction. Figure 4 shows the locations of environmental concerns on the property. Soil sample 1AF collected east of the separator and soil sample 8HF collected 20 ft southeast of the separator had minor TPH concerns. Soil sample 2BF 8 collected south of the separator had a minor toluene concentration. Soil sample 9IF was collected to verify the background concentrations. No environmental concerns were discovered from the other samples.

SITE ANALYSIS

Analytical results show that sample 1AF had a TPH concentration of 4200 ppm. Soil sample 8HF. a composite to 3 ft, collected 20 ft southeast of the separator had a TPH concentration of 805 ppm. Sample 2BF 8 had a toluene concentration of 26.3 ppm. The separator depth was 8 ft. As shown in Table 3. samples 1AF and 2BF 8 were collected at a depth of 9 ft. The TPH and toluene concentrations in these samples are the result of leaks in the separator. The metal concentrations are not leachable and consequently are not an environmental concern. The analytical results identify the migration of contaminants from the separator towards the east and the southeast. No other sources of contamination have been located on the property. Estimates of the impacted soil around sample 1AF are 20 ft long by 4 ft wide by 15 ft deep. Estimates around sample 8HF are 15 ft long by 10 ft wide by 5 ft deep. The sludge volume inside the separator is estimated at approximately 4 yds. A total of 75 to 80 yards of soil is estimated to be impacted.

Table 3. Sample Depth and Distances

SAMPLE	TIME	DEPTH (feet)	POSITION (in field)
1AH	7:48 A.M.	8-9	East of Separator
2BF 8	8:50 A.M.	8	South of Separator
2BF 12	11:18 A.M.	12	South of Separator
3CF 10	12:10 P.M.	10	West of Separator
3CF 12	12:18 P.M.	12	West of Separator
$4DF_s$	12:24 P.M.	8-9	Inside Separator
$4DF_{w/o}$	12:28 P.M	8-9	Inside Separator
5EF	1:20 P.M	3-3.5	North End Rock Bed
6FF	1:37 P.M	3-3.5	North End Rock Bed
7GF	2:00 P.M	3-3.5	West of Warehouse
8HF	2:03 P.M	2-3	South of Separator
9IF	2:20 P.M	2-3	West Levee Bank

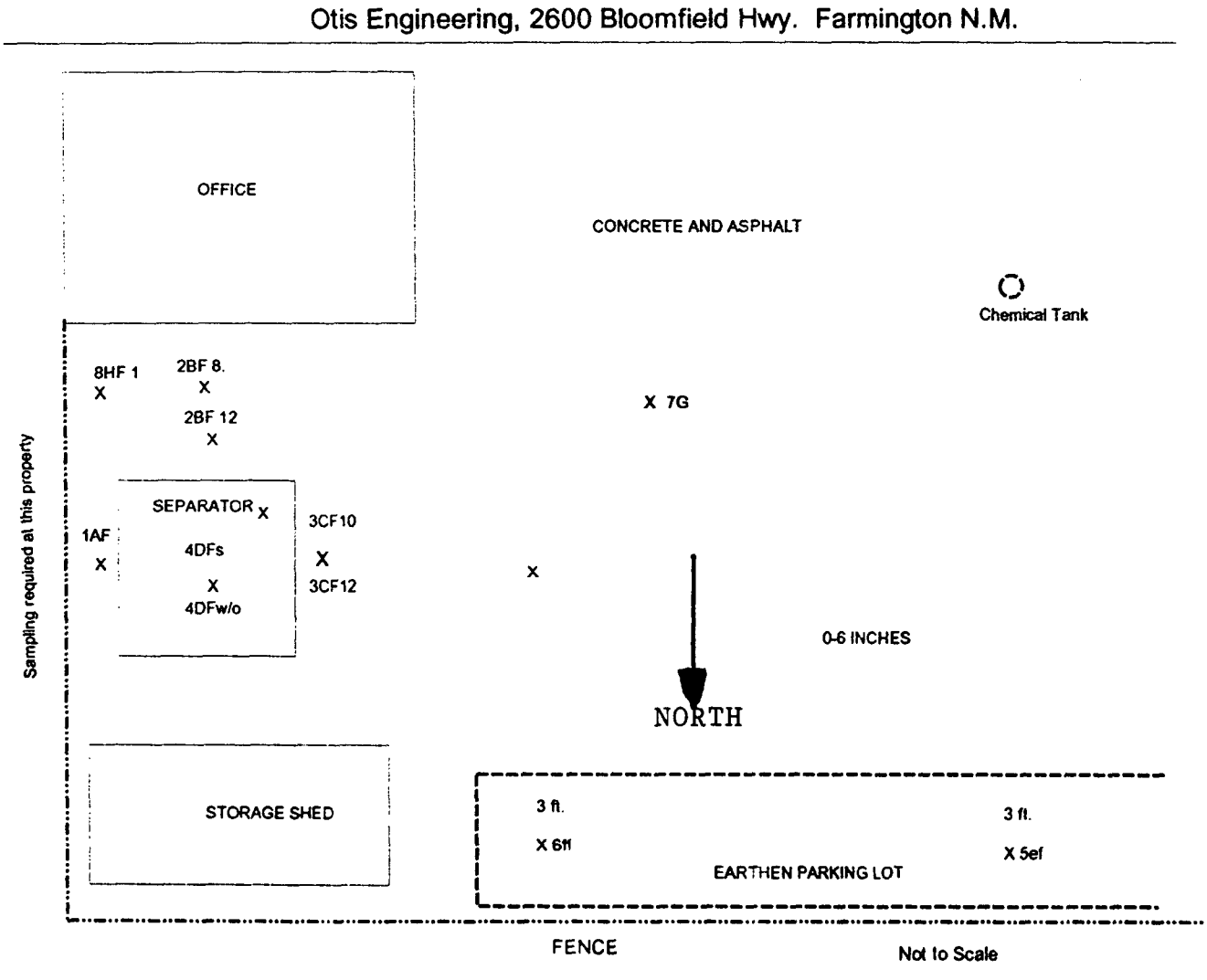


Figure 3. Soil Samples Location on Site

Otis Engineering, 2600 Bloomfield Hwy. Farmington N.M.

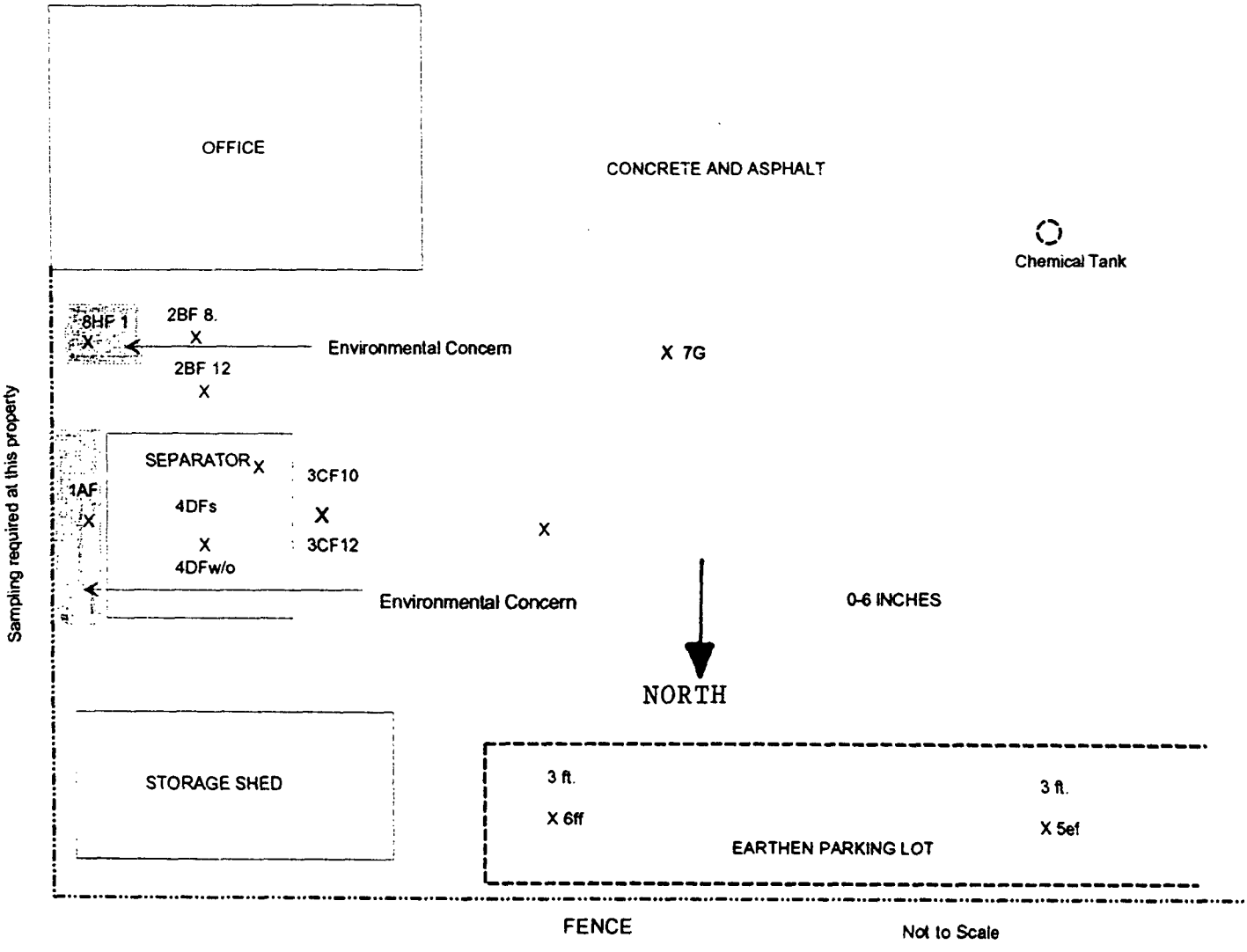


Figure 4. Locations of Environmental Concern

5.0 CONCLUSIONS AND RECOMMENDATIONS

This report summarizes the phase II of Otis Engineering's facility located in Farmington, N.Mexico. The chemical tank to the southwest had no signs of leakage. The separator in the northeast corner appears to be the only source of contamination. Soil samples show TPH concentrations towards the east and the southeast of the separator. These concentrations are due to a breach of structural integrity in the separator. TCLP volatiles, semi-volatiles, and metals tests should be performed to confirm the waste classification. A total of 75 to 80 yds. around and inside the separator, is estimated to be impacted. No other environmental concerns were discovered at this site.

The contaminated soil and separator sludge requires remediation. Based on volume estimates direct landfill is the most economically feasible alternative. The use of the separator on this site should be discontinued to prevent further environmental damage and the separator should be removed. Soil sample 1AF collected at the property line showed TPH concentrations. Soil samples should be collected from the adjacent property to confirm or deny off site migration. The separator sludge requires dewatering and solidification. The cost estimates to excavate and dispose of contaminated soils are detailed in the later chapter.

6.0 COST ESTIMATES

The estimated costs to remove the oil/water separator, excavate and dispose of the impacted soil, and to backfill the excavated section with clean soil are shown below:

Remediation:	=	10500.00
Trucking:	=	1000.00
Disposal:	=	1120.00
Backfill:	=	1000.00
Engineering:	=	500.00
Analytical:	=	1200.00
Total	=	15320.00

The information above reflects remediation costs for an estimated 80 yards of soil, and the costs are contingent upon that amount.

REFERENCES

1) United States Department of Agriculture: Soil Conservation Service. "Soil Survey of San Juan County, N.Mexico. Eastern Part". Aztec, N.Mexico.

2) Tax Accessors Office. Aztec, N.Mexico.

ANALYTICAL

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CORE LABORATORIES

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 932944
Prepared For:

OVAC INC.
KIRBY VINSON
P.O. BOX 16584
LAKE CHARLES, LA 70616

Date: 08/18/93

Dana L Harper
Signature

08-18-93
Date:

Name: DANA L. HARPER

Title: LABORATORY MANAGER

Core Laboratories
3645 Arizona Street
Sulphur, LA 70663

Western Atlas International
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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 1AF
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 07:48
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0001
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	5520	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
Total Petroleum Hydrocarbons	4200	1750	mg/kg	EPA 418.1	08/17/93	HJD

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 28F8 1
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 08:50
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0002
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	1110	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	26300	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 2BF8 2
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 08:50
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0003
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Barium (Ba), TCLP	1.20	0.05	mg/L	SW-846/6010	08/11/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Lead (Pb), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
Total Petroleum Hydrocarbons	<35	35	mg/kg	EPA 418.1	08/10/93	HJD
Soil pH Measured in Water	8.5		pH units	SW-846/9045	08/10/93	JAF
% Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Digestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
TCLP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 2BF12
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 11:18
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0004
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Barium (Ba), TCLP	1.34	0.05	mg/L	SW-846/6010	08/11/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Lead (Pb), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

B NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

IENT I.D.....: 28F12
TE SAMPLED.....: 08/04/93
ME SAMPLED.....: 11:18
ORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0004
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	7560	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
gestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
LP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

B NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

IENT I.D.....: 3CF10
TE SAMPLED.....: 08/04/93
..ME SAMPLED.....: 12:10
ORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0005
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
latile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	4050	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
otal Petroleum Hydrocarbons	<35	35	mg/kg	EPA 418.1	08/10/93	HJD

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 3CF10
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 12:10
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0005
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 3CF12
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 12:18
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0006
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Barium (Ba), TCLP	1.09	0.05	mg/L	SW-846/6010	08/11/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Lead (Pb), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
% Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Digestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
TCLP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 4DF 1
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 12:24
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0007
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Barium (Ba), TCLP	1.44	0.05	mg/L	SW-846/6010	08/11/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Lead (Pb), TCLP	0.36	0.05	mg/L	SW-846/6010	08/11/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 4DF 1
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 12:24
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0007
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	2330	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
Total Petroleum Hydrocarbons	2000	875	mg/kg	EPA 418.1	08/17/93	HJD
Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Digestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
TCLP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 4DF 2
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 12:28
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0008
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	1735	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: SEF 1
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 13:20
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0009
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	1160	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		

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JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 5EF 2
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 13:21
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0010
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Barium (Ba), TCLP	1.14	0.05	mg/L	SW-846/6010	08/11/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Lead (Pb), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
Total Petroleum Hydrocarbons	<35	35	mg/kg	EPA 418.1	08/10/93	HJD
Soil pH Measured in Water	8.2		pH units	SW-846/9045	08/10/93	JAF
% Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Digestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
TCLP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 7GF
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 14:00
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0012
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Barium (Ba), TCLP	0.87	0.05	mg/L	SW-846/6010	08/11/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Lead (Pb), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

ENT I.D.....: 7GF
E SAMPLED.....: 08/04/93
ME SAMPLED.....: 14:00
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0012
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	890	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
Total Petroleum Hydrocarbons	<35	35	mg/kg	EPA 418.1	08/10/93	HJD
l pH Measured in Water	8.0		pH units	SW-846/9045	08/10/93	JAF
% Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
% Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
gestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
LP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 8HF 1
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 14:01
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0013
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	630	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
Total Petroleum Hydrocarbons	805	70	mg/kg	EPA 418.1	08/10/93	HJD

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 8HF 1
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 14:01
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0013
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN

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LABORATORY TESTS RESULTS
08/18/93

S NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

IENT I.D.....: 8HF 2
TE SAMPLED.....: 08/04/93
ME SAMPLED.....: 14:03
ORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0014
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
senic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
arium (Ba), TCLP	1.36	0.05	mg/L	SW-846/6010	08/11/93	DJC
admium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
romium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
ead (Pb), TCLP	0.38	0.05	mg/L	SW-846/6010	08/11/93	DJC
rcury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/11/93	DJC
lver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/11/93	DJC
Matrix QC ID Job Number	932943				08/09/93	CPG
Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/09/93	CPG
gestion for Metals	COMPLETE			SW-846/3010	08/10/93	NDF
TCLP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/09/93	CPG

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LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 9IF (BACKGROUND)
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 14:20
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0015
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Arsenic (As), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/12/93	DJC
Barium (Ba), TCLP	0.95	0.05	mg/L	SW-846/6010	08/12/93	DJC
Cadmium (Cd), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/12/93	DJC
Chromium (Cr), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/12/93	DJC
Lead (Pb), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/12/93	DJC
Mercury (Hg), TCLP	<0.002	0.002	mg/L	SW-846/7470	08/11/93	HJD
Selenium (Se), TCLP	<0.1	0.1	mg/L	SW-846/6010	08/12/93	DJC
Silver (Ag), TCLP	<0.05	0.05	mg/L	SW-846/6010	08/12/93	DJC
Matrix QC ID Job Number	932943				08/10/93	CPG
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 91F (BACKGROUND)
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 14:20
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0015
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	4900	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
Total Petroleum Hydrocarbons	<35	35	mg/kg	EPA 418.1	08/10/93	HJD
% Solid	100	0.5	% wt.	40 CFR Pt.261/1311	08/10/93	CPG
% Aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/10/93	CPG
% Non-aqueous Liquid	<0.5	0.5	% wt.	40 CFR Pt.261/1311	08/10/93	CPG
Digestion for Metals	COMPLETE			SW-846/3010	08/11/93	NDF
TCLP Glass Jar Extraction	COMPLETE			40 CFR Pt.261/1311	08/10/93	CPG

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CORE LABORATORIES

LABORATORY TESTS RESULTS
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

CLIENT I.D.....: 6FF
DATE SAMPLED.....: 08/04/93
TIME SAMPLED.....: 13:37
WORK DESCRIPTION...: FARMINGTON/#430

LABORATORY I.D...: 932944-0016
DATE RECEIVED....: 08/06/93
TIME RECEIVED....: 15:00
REMARKS.....: SAMPLED BY: JOE DELVECCHIO

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Volatile Organics - Solid		*1		SW-846 8240/Hi Meth	08/10/93	AJD
Acetone	ND	12500	ug/kg	SW 846 8240		
Acrolein	ND	12500	ug/kg	SW 846 8240		
Acrylonitrile	ND	12500	ug/kg	SW 846 8240		
2-Butanone (MEK)	ND	12500	ug/kg	SW 846 8240		
Benzene	ND	630	ug/kg	SW 846 8240		
Bromodichloromethane	ND	630	ug/kg	SW 846 8240		
Bromoform	ND	630	ug/kg	SW 846 8240		
Bromomethane	ND	1300	ug/kg	SW 846 8240		
Carbon disulfide	ND	12500	ug/kg	SW 846 8240		
Carbon tetrachloride	ND	630	ug/kg	SW 846 8240		
Chlorobenzene	ND	630	ug/kg	SW 846 8240		
Chloroethane	ND	1300	ug/kg	SW 846 8240		
2-Chloroethylvinyl ether	ND	1300	ug/kg	SW 846 8240		
Chloroform	ND	630	ug/kg	SW 846 8240		
Chloromethane	ND	1300	ug/kg	SW 846 8240		
Dichlorodifluoromethane	ND	630	ug/kg	SW 846 8240		
Dibromochloromethane	ND	630	ug/kg	SW-846/8240		
1,1-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,2-Dichloroethane	ND	630	ug/kg	SW 846 8240		
1,1-Dichloroethene	ND	630	ug/kg	SW 846 8240		
trans-1,2-Dichloroethene	ND	630	ug/kg	SW 846 8240		
1,2-Dichloropropane	ND	630	ug/kg	SW 846 8240		
cis-1,3-Dichloropropene	ND	630	ug/kg	SW 846 8240		
Ethylbenzene	ND	630	ug/kg	SW 846 8240		
2-Hexanone	ND	630	ug/kg	SW 846 8240		
4-Methyl-2-pentanone	ND	6300	ug/kg	SW 846 8240		
Methylene chloride	ND	1300	ug/kg	SW 846 8240		
Styrene	ND	630	ug/kg	SW 846 8240		
1,1,2,2-Tetrachloroethane	ND	630	ug/kg	SW 846 8240		
Tetrachloroethene	ND	630	ug/kg	SW 846 8240		
Toluene	ND	630	ug/kg	SW 846 8240		
1,1,1-Trichloroethane	ND	630	ug/kg	SW 846 8240		
1,1,2-Trichloroethane	ND	630	ug/kg	SW 846 8240		
Trichloroethene	ND	630	ug/kg	SW 846 8240		
Trichlorofluoromethane(FREON TF)	ND	630	ug/kg	SW 846 8240		
Total Xylenes	ND	630	ug/kg	SW 846 8240		
Vinyl acetate	ND	6300	ug/kg	SW 846 8240		
Vinyl chloride	ND	1300	ug/kg	SW 846 8240		
1,2-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,3-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		
1,4-Dichlorobenzene	ND	630	ug/kg	SW 846 8240		

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CORE LABORATORIES

QUALITY ASSURANCE REPORT
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Soil pH Measured in Water				DATE/TIME ANALYZED:08/10/93 13:23						QC BATCH NUMBER:960265
REPORTING LIMIT/DF:	UNITS:pH units			METHOD REFERENCE :SW-846/9045						TECHNICIAN:JAF
STANDARD	REFERENCE	WC930219	4.0			4.0	100			
DUPLICATE	ANALYTICAL	932943-001	4.7	4.7	0					
DUPLICATE	ANALYTICAL	932944-003	8.5	8.6	1					
PARAMETER:Total Petroleum Hydrocarbons				DATE/TIME ANALYZED:08/10/93 18:42						QC BATCH NUMBER:960304
REPORTING LIMIT/DF: 35	UNITS:mg/kg			METHOD REFERENCE :EPA 418.1						TECHNICIAN:HJD
BLANK	MB/P196	081093	<35							
SPIKE	MS	081093-01	422					0.0	431	98
SPIKE	MS	081093-02	423					0.0	422	100
DUPLICATE	MD	932943-01	<35	<35	NC					
DUPLICATE	MD	932944-03	<35	<35	NC					
PARAMETER:Mercury (Hg), TCLP				DATE/TIME ANALYZED:08/11/93 15:34						QC BATCH NUMBER:960374
REPORTING LIMIT/DF: 0.002	UNITS:mg/L			METHOD REFERENCE :SW-846/7470						TECHNICIAN:HJD
BLANK	MB/7470	081193	<0.002							
BLANK	TCLP/BLK-1	080993	<0.002							
BLANK	TCLP/BLK-1	081093	<0.002							
STANDARD	LCS	HGL657	0.005			0.005	100			
STANDARD	REFERENCE	HGL658	0.002			0.002	100			
STANDARD	REFERENCE	HGL659	0.002			0.002	100			
STANDARD	REFERENCE	HGL660	0.002			0.002	100			
SPIKE	MS	932943-01	0.005					0.0	0.005	100
SPIKE	MS	932944-04	0.005					0.0	0.005	100
SPIKE	MS	932972-04	0.005					0.0	0.005	100
DUPLICATE	MD	932943-01	<0.002	<0.002	NC					
DUPLICATE	MD	932944-04	<0.002	<0.002	NC					
DUPLICATE	MD	932972-04	<0.002	<0.002	NC					
PARAMETER:Arsenic (As), TCLP				DATE/TIME ANALYZED:08/11/93 13:31						QC BATCH NUMBER:960379
REPORTING LIMIT/DF: 0.1	UNITS:mg/L			METHOD REFERENCE :SW-846/6010						TECHNICIAN:DJC
BLANK	ICB	081193	<0.1							
BLANK	MB/3010	081093	<0.1							
BLANK	MB/TCLP#1	080993	<0.1							
STANDARD	ICV	QCS19	4.8			5.0	96			
STANDARD	LCS	081093	0.9			1.0	90			
STANDARD	ICV	QC19N	1.0			1.0	100			
SPIKE	MS	932936-001	0.8					<0.1	1.0	80
SPIKE	MS	932943-001	0.9					<0.1	1.0	90
DUPLICATE	MD	932943-001	<0.1	<0.1	NC					
DUPLICATE	MD	932936-001	<0.1	<0.1	NC					

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CORE LABORATORIES

QUALITY ASSURANCE REPORT
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Barium (Ba), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960380
REPORTING LIMIT/DF: 0.05 UNITS:mg/L		METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081193	<0.05							
BLANK	MB/3010	081093	<0.05							
BLANK	MB/TCLP#1	080993	<0.05							
STANDARD	ICV	QCS7	5.02			5.00	100			
STANDARD	LCS	081093	0.95			1.00	95			
STANDARD	ICV	ICAP7	1.02			1.00	102			
SPIKE	MS	932936-001	1.64					0.73	1.00	91
SPIKE	MS	932943-001	2.18					1.15	1.00	103
DUPLICATE	MD	932943-001	1.15	1.25	8					
DUPLICATE	MD	932936-001	0.73	0.77	5					
PARAMETER:Cadmium (Cd), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960381
REPORTING LIMIT/DF: 0.05 UNITS:mg/L		METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081193	<0.05							
BLANK	MB/3010	081093	<0.05							
BLANK	MB/TCLP#1	080993	<0.05							
STANDARD	ICV	QCS19	5.03			5.00	101			
STANDARD	LCS	081093	0.95			1.00	95			
STANDARD	ICV	QC19N	1.02			1.00	102			
SPIKE	MS	932936-001	0.87					<0.05	1.00	87
SPIKE	MS	932943-001	0.92					<0.05	1.00	92
DUPLICATE	MD	932943-001	<0.05	<0.05	NC					
DUPLICATE	MD	932936-001	<0.05	<0.05	NC					
PARAMETER:Chromium (Cr), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960382
REPORTING LIMIT/DF: 0.05 UNITS:mg/L		METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081193	<0.05							
BLANK	MB/3010	081093	<0.05							
BLANK	MB/TCLP#1	080993	<0.05							
STANDARD	ICV	QCS19	5.04			5.00	101			
STANDARD	LCS	081093	0.94			1.00	94			
STANDARD	ICV	QC19N	1.03			1.00	103			
SPIKE	MS	932936-001	0.84					<0.05	1.00	84
SPIKE	MS	932943-001	0.91					<0.05	1.00	91
DUPLICATE	MD	932943-001	<0.05	<0.05	NC					
DUPLICATE	MD	932936-001	<0.05	<0.05	NC					
PARAMETER:Lead (Pb), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960383
REPORTING LIMIT/DF: 0.05 UNITS:mg/L		METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081193	<0.05							
BLANK	MB/3010	081093	<0.05							
BLANK	MB/TCLP#1	080993	<0.05							
STANDARD	ICV	QCS19	5.01			5.00	100			

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JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

	ANALYSIS			DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Lead (Pb), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960383
REPORTING LIMIT/DF: 0.05	UNITS:mg/L	METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
STANDARD	LCS	081093	0.96			1.00	96			
STANDARD	ICV	QC19N	1.03			1.00	103			
SPIKE	MS	932936-001	0.86					<0.05	1.00	86
SPIKE	MS	932943-001	0.92					<0.05	1.00	92
DUPLICATE	MD	932943-001	<0.05	<0.05	NC					
DUPLICATE	MD	932936-001	<0.05	<0.05	NC					
PARAMETER:Selenium (Se), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960384
REPORTING LIMIT/DF: 0.1	UNITS:mg/L	METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081193	<0.1							
BLANK	MB/3010	081093	<0.1							
BLANK	MB/TCLP#1	080993	<0.1							
STANDARD	ICV	QCS19	5.0			5.0	100			
STANDARD	LCS	081093	0.9			1.0	90			
STANDARD	ICV	QC19N	1.0			1.0	100			
SPIKE	MS	932936-001	0.9					<0.1	1.0	90
SPIKE	MS	932943-001	0.9					<0.1	1.0	90
DUPLICATE	MD	932943-001	<0.1	<0.1	NC					
DUPLICATE	MD	932936-001	<0.1	<0.1	NC					
PARAMETER:Silver (Ag), TCLP		DATE/TIME ANALYZED:08/11/93 13:31								QC BATCH NUMBER:960385
REPORTING LIMIT/DF: 0.05	UNITS:mg/L	METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081193	<0.05							
BLANK	MB/3010	081093	<0.05							
BLANK	MB/TCLP#1	080993	<0.05							
STANDARD	ICV	QCS7	5.00			5.00	100			
STANDARD	LCS	081093	0.95			1.00	95			
STANDARD	ICV	ICAP7	1.02			1.00	102			
SPIKE	MS	932936-001	0.87					<0.05	1.00	87
SPIKE	MS	932943-001	0.93					<0.05	1.00	93
DUPLICATE	MD	932943-001	<0.05	<0.05	NC					
DUPLICATE	MD	932936-001	<0.05	<0.05	NC					
PARAMETER:Arsenic (As), TCLP		DATE/TIME ANALYZED:08/12/93 14:44								QC BATCH NUMBER:960445
REPORTING LIMIT/DF: 0.1	UNITS:mg/L	METHOD REFERENCE :SW-846/6010								TECHNICIAN:DJC
BLANK	ICB	081293	<0.1							
BLANK	MB/3010	081193	<0.1							
BLANK	MB/TCLP#1	081093	<0.1							
STANDARD	ICV	QC19N	1.0			1.0	100			
STANDARD	LCS	081193	1.0			1.0	100			
STANDARD	ICV	QCS19	4.8			5.0	96			
SPIKE	MS	932944-011	0.9					<0.1	1.0	90
DUPLICATE	MD	932944-011	<0.1	<0.1	NC					

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CORE LABORATORIES

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JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Arsenic (As), TCLP			DATE/TIME ANALYZED:08/12/93 14:44							QC BATCH NUMBER:960445
REPORTING LIMIT/DF: 0.1 UNITS:mg/L			METHOD REFERENCE :SW-846/6010							TECHNICIAN:DJC
PARAMETER:Barium (Ba), TCLP			DATE/TIME ANALYZED:08/12/93 14:44							QC BATCH NUMBER:960446
REPORTING LIMIT/DF: 0.05 UNITS:mg/L			METHOD REFERENCE :SW-846/6010							TECHNICIAN:DJC
BLANK	ICB	081293	<0.05							
BLANK	MB/3010	081193	<0.05							
BLANK	MB/TCLP#1	081093	<0.05							
STANDARD	ICV	ICAP7	0.97			1.00	97			
STANDARD	LCS	081193	0.95			1.00	95			
STANDARD	ICV	QCS7	4.93			5.00	99			
SPIKE	MS	932944-011	1.93					1.03	1.00	90
DUPLICATE	MD	932944-011	1.03	1.02	1					
PARAMETER:Cadmium (Cd), TCLP			DATE/TIME ANALYZED:08/12/93 14:44							QC BATCH NUMBER:960447
REPORTING LIMIT/DF: 0.05 UNITS:mg/L			METHOD REFERENCE :SW-846/6010							TECHNICIAN:DJC
BLANK	ICB	081293	<0.05							
BLANK	MB/3010	081193	<0.05							
BLANK	MB/TCLP#1	081093	<0.05							
STANDARD	ICV	QC19N	1.03			1.00	103			
STANDARD	LCS	081193	1.00			1.00	100			
STANDARD	ICV	QCS19	5.05			5.00	101			
SPIKE	MS	932944-011	0.94					<0.05	1.00	94
DUPLICATE	MD	932944-011	<0.05	<0.05	NC					
PARAMETER:Chromium (Cr), TCLP			DATE/TIME ANALYZED:08/12/93 14:44							QC BATCH NUMBER:960448
REPORTING LIMIT/DF: 0.05 UNITS:mg/L			METHOD REFERENCE :SW-846/6010							TECHNICIAN:DJC
BLANK	ICB	081293	<0.05							
BLANK	MB/3010	081193	<0.05							
BLANK	MB/TCLP#1	081093	<0.05							
STANDARD	ICV	QC19N	1.02			1.00	102			
STANDARD	LCS	081193	0.98			1.00	98			
STANDARD	ICV	QCS19	4.95			5.00	99			
SPIKE	MS	932944-011	0.92					<0.05	1.00	92
DUPLICATE	MD	932944-011	<0.05	<0.05	NC					
PARAMETER:Lead (Pb), TCLP			DATE/TIME ANALYZED:08/12/93 14:44							QC BATCH NUMBER:960449
REPORTING LIMIT/DF: 0.05 UNITS:mg/L			METHOD REFERENCE :SW-846/6010							TECHNICIAN:DJC
BLANK	ICB	081293	<0.05							
BLANK	MB/3010	081193	<0.05							
BLANK	MB/TCLP#1	081093	<0.05							
STANDARD	ICV	QC19N	1.03			1.00	103			
STANDARD	LCS	081193	0.95			1.00	95			
STANDARD	ICV	QCS19	5.02			5.00	100			

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ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Lead (Pb), TCLP REPORTING LIMIT/DF: 0.05 UNITS:mg/L			DATE/TIME ANALYZED:08/12/93 14:44 METHOD REFERENCE :SW-846/6010						QC BATCH NUMBER:960449 TECHNICIAN:DJC	
SPIKE	MS	932944-011	0.85					<0.05	1.00	85
DUPLICATE	MD	932944-011	<0.05	<0.05	NC					
PARAMETER:Selenium (Se), TCLP REPORTING LIMIT/DF: 0.1 UNITS:mg/L			DATE/TIME ANALYZED:08/12/93 14:44 METHOD REFERENCE :SW-846/6010						QC BATCH NUMBER:960450 TECHNICIAN:DJC	
BLANK	ICB	081293	<0.1							
BLANK	MB/3010	081193	<0.1							
BLANK	MB/TCLP#1	081093	<0.1							
STANDARD	ICV	QC19N	1.0			1.0	100			
STANDARD	LCS	081193	1.0			1.0	100			
STANDARD	ICV	QCS19	5.0			5.0	100			
SPIKE	MS	932944-011	1.0					<0.1	1.0	100
DUPLICATE	MD	932944-011	<0.1	<0.1	NC					
PARAMETER:Silver (Ag), TCLP REPORTING LIMIT/DF: 0.05 UNITS:mg/L			DATE/TIME ANALYZED:08/12/93 14:44 METHOD REFERENCE :SW-846/6010						QC BATCH NUMBER:960451 TECHNICIAN:DJC	
BLANK	ICB	081293	<0.05							
BLANK	MB/3010	081193	<0.05							
BLANK	MB/TCLP#1	081093	<0.05							
STANDARD	ICV	ICAP7	0.98			1.00	98			
STANDARD	LCS	081193	0.96			1.00	96			
STANDARD	ICV	QCS7	4.98			5.00	100			
SPIKE	MS	932944-011	0.91					<0.05	1.00	91
DUPLICATE	MD	932944-011	<0.05	<0.05	NC					
PARAMETER:Total Petroleum Hydrocarbons REPORTING LIMIT/DF: 35 UNITS:mg/kg			DATE/TIME ANALYZED:08/17/93 13:30 METHOD REFERENCE :EPA 418.1						QC BATCH NUMBER:960679 TECHNICIAN:HJD	
BLANK	MB/P196	081793	<35							
SPIKE	MS	081793-01	401					0.0	413	97
DUPLICATE	MD	932944-01	4200	5000	17					

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B NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

VOC SW 846 8240 DATE ANALYZED: 08/10/93 TIME ANALYZED: 18:11 METHOD: SW-846 8240/Hi Meth QC NUMBER:960409

BLANKS

ST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Benzene	METHOD	081093	1	<5	5	ug/L
,1-Dichloroethene	METHOD	081093	1	<5	5	ug/L
lorobenzene	METHOD	081093	1	<5	5	ug/L
luene	METHOD	081093	1	<5	5	ug/L
ichloroethene	METHOD	081093	1	<5	5	ug/L
cetone	METHOD	081093	1	<100	100	ug/L
rolein	METHOD	081093	1	<100	100	ug/L
rylonitrile	METHOD	081093	1	<100	100	ug/L
Butanone (MEK)	METHOD	081093	1	<100	100	ug/L
Bromodichloromethane	METHOD	081093	1	<5	5	ug/L
romoform	METHOD	081093	1	<5	5	ug/L
omomethane	METHOD	081093	1	<10	10	ug/L
bromochloromethane	METHOD	081093	1	<5	5	ug/L
rbon disulfide	METHOD	081093	1	<100	100	ug/L
arbon tetrachloride	METHOD	081093	1	<5	5	ug/L
loroethane	METHOD	081093	1	<10	10	ug/L
Chloroethylvinyl ether	METHOD	081093	1	<10	10	ug/L
loroform	METHOD	081093	1	<5	5	ug/L
Chloromethane	METHOD	081093	1	<10	10	ug/L
ichlorodifluoromethane	METHOD	081093	1	<5	5	ug/L
1-Dichloroethane	METHOD	081093	1	<5	5	ug/L
2-Dichloroethane	METHOD	081093	1	<5	5	ug/L
ans-1,2-Dichloroethene	METHOD	081093	1	<5	5	ug/L
,2-Dichloropropane	METHOD	081093	1	<5	5	ug/L
is-1,3-Dichloropropene	METHOD	081093	1	<5	5	ug/L
hylbenzene	METHOD	081093	1	<5	5	ug/L
Hexanone	METHOD	081093	1	<50	50	ug/L
4-Methyl-2-pentanone	METHOD	081093	1	<50	50	ug/L
ethylene chloride	METHOD	081093	1	<10	10	ug/L
yrene	METHOD	081093	1	<5	5	ug/L
1,2,2-Tetrachloroethane	METHOD	081093	1	<5	5	ug/L
rachloroethene	METHOD	081093	1	<5	5	ug/L
,1,1-Trichloroethane	METHOD	081093	1	<5	5	ug/L
1,2-Trichloroethane	METHOD	081093	1	<5	5	ug/L
ichlorofluoromethane(FREON TF)	METHOD	081093	1	<5	5	ug/L
tal Xylenes	METHOD	081093	1	<5	5	ug/L
vinyl acetate	METHOD	081093	1	<50	50	ug/L
inyl chloride	METHOD	081093	1	<10	10	ug/L
2-Dichlorobenzene	METHOD	081093	1	<5	5	ug/L
3-Dichlorobenzene	METHOD	081093	1	<5	5	ug/L
4-Dichlorobenzene	METHOD	081093	1	<5	5	ug/L

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V/QC SW 846 8240 DATE ANALYZED: 08/10/93 TIME ANALYZED: 18:11 METHOD: SW-846 8240/Hi Meth QC NUMBER:960409

REFERENCE STANDARDS

EST ESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	TRUE VALUE	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
,2-Dichloroethane-d4	SURROGATE	932944-1	1	22	25	88	5	ug/L
	SURROGATE	932944-2	1	19	25	76	5	ug/L
	SURROGATE	932944-4	1	22	25	88	5	ug/L
	SURROGATE	932944-5	1	27	25	108	5	ug/L
	SURROGATE	932944-7	1	22	25	88	5	ug/L
	SURROGATE	932944-8	1	19	25	76	5	ug/L
	SURROGATE	932944-9	1	20	25	80	5	ug/L
	SURROGATE	932944-12	1	18	25	72	5	ug/L
	SURROGATE	932944-13	1	20	25	80	5	ug/L
	SURROGATE	932944-15	1	25	25	100	5	ug/L
	SURROGATE	932944-16	1	19	25	76	5	ug/L
oluene-d8	SURROGATE	932944-1	1	21	25	84	5	ug/L
	SURROGATE	932944-2	1	19	25	76	5	ug/L
	SURROGATE	932944-4	1	21	25	84	5	ug/L
	SURROGATE	932944-5	1	25	25	100	5	ug/L
	SURROGATE	932944-7	1	21	25	84	5	ug/L
	SURROGATE	932944-8	1	16	25	64	5	ug/L
	SURROGATE	932944-9	1	18	25	72	5	ug/L
	SURROGATE	932944-12	1	19	25	76	5	ug/L
	SURROGATE	932944-13	1	20	25	80	5	ug/L
	SURROGATE	932944-15	1	24	25	96	5	ug/L
	SURROGATE	932944-16	1	19	25	76	5	ug/L
Bromofluorobenzene	SURROGATE	932944-1	1	21	25	84	5	ug/L
	SURROGATE	932944-2	1	20	25	80	5	ug/L
	SURROGATE	932944-4	1	22	25	88	5	ug/L
	SURROGATE	932944-5	1	25	25	100	5	ug/L
	SURROGATE	932944-7	1	21	25	84	5	ug/L
	SURROGATE	932944-8	1	18	25	72	5	ug/L
	SURROGATE	932944-9	1	19	25	76	5	ug/L
	SURROGATE	932944-12	1	19	25	76	5	ug/L
	SURROGATE	932944-13	1	20	25	80	5	ug/L
	SURROGATE	932944-15	1	25	25	100	5	ug/L
	SURROGATE	932944-16	1	19	25	76	5	ug/L

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VOC SW 846 8240 DATE ANALYZED: 08/10/93 TIME ANALYZED: 18:11 METHOD: SW-846 8240/Hi Meth QC NUMBER:960409

MATRIX SPIKES

ST SCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
enzene	MATRIX	932943-4	1	48	0	50	96	5	ug/L
1-Dichloroethene	MATRIX	932943-4	1	47	0	50	94	5	ug/L
lorobenzene	MATRIX	932943-4	1	50	0	50	100	5	ug/L
luene	MATRIX	932943-4	1	46	0	50	92	5	ug/L
richloroethene	MATRIX	932943-4	1	48	0	50	96	5	ug/L

3645 Arizona Street
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CORE LABORATORIES

QUALITY ASSURANCE REPORT
08/18/93

JOB NUMBER: 932944 CUSTOMER: OVAC INC. ATTN: KIRBY VINSON

A/QC SW 846 8240 DATE ANALYZED: 08/10/93 TIME ANALYZED: 18:11 METHOD: SW-846 8240/Hi Meth QC NUMBER:960409

DUPLICATES

EST ESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	DETECTION LIMITS	UNITS OF MEASURE
enzene	SPIKE/DUP	932943-4	1	48	51	6	5	ug/L
,1-Dichloroethene	SPIKE/DUP	932943-4	1	47	44	7	5	ug/L
hlorobenzene	SPIKE/DUP	932943-4	1	50	53	6	5	ug/L
oluene	SPIKE/DUP	932943-4	1	46	44	4	5	ug/L
richloroethene	SPIKE/DUP	932943-4	1	48	51	6	5	ug/L

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QUALITY ASSURANCE FOOTER
08/18/93

NC = Not Calculable due to values lower than the reporting limit
ND = Analyte Not Detected above the quantitation limit

The detection limit and units reported in the Quality Assurance (QA) Report may not coincide with the values reported in the Analytical Report because the data presented in the QA Report may not account for sample preparation and dilutions performed.

The date and time analyzed on the Quality Assurance Report may not reflect the actual date and/or time of analysis.

Cited Methods are obtained from the following documents:
EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989
Federal Register, Friday, October 26, 1984 (40 CRF Part 136)
Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985

Numerical values expressed in the "LIMITS/*DILUTION" column are Method Quantitation Limits (MQL). A final result of "ND" should be considered as "less than the MQL" (<MQL) unless it is noted otherwise.

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CORE LABORATORIES

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	OVAC, Inc.	PROJECT NAME/NUMBER:	Farmington #430
SEND REPORT TO:	Kirby Vinson	BILLING INFORMATION	
ADDRESS:	P.O. Box 16584	BILL TO:	OVAC, Inc.
	Lake Charles, LA	ADDRESS:	P.O. Box 16584
			Lake Charles, LA
PHONE:	(318) 433-1602	PHONE:	433-1602
P	(318) 436-4144	FAX: 436-4144	PO NO.:

LAB JOB NO. 932944

SAMPLE NO.	SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	NUMBER OF CONTAINERS	ANALYSIS / METHOD REQUEST: VOC	TCLP-metals	TPH	PH	REMARKS / PRECAUTIONS
1	1AF	8/4/93	7:48am	Soil	glass	none	1	X	*	-		* added 8-16-93 per Kirby Vinson
2	2BF8,	8/4/93	8:50am	Soil	glass	none	1	X				
3	2BF8$_2$	8/4/93	8:50am	Soil	glass	none	1		X	X	X	(2 TPH's: 1AF + 4DF,)
4	2BF12	8/4/93	11:18am	Soil	glass	none	1	X	X			
5	3CF10	8/4/93	12:10pm	Soil	glass	none	1	X		X		
6	3CF12	8/4/93	12:18pm	Soil	glass	none	1		X			
7	4DF,	8/4/93	12:24pm	sludge	glass	none	1	X	X	*	-	
8	4DF$_2$	8/4/93	12:28pm	liquid	glass	none	1	X				
9	5EF,	8/4/93	1:20pm	Soil	glass	none	1	X				
10	5EF$_2$	8/4/93	1:21pm	Soil	glass	none	1		X	X	X	

SAMPLER: Joe DelVecchio | SHIPMENT METHOD: | AIRBILL NO.:

REQUIRED TURNAROUND: ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☐ ROUTINE OTHER Rush

1. RELINQUISHED BY: SIGNATURE:	Joseph DelVecchio	DATE	8/6/93	2. RELINQUISHED BY: SIGNATURE:	Guy Richards	DATE	8/6/93
PRINTED NAME/COMPANY:	OVAC, Inc. / Joseph DelVecchio	TIME	2:30pm	PRINTED NAME/COMPANY:	Guy Richards / Core Lab	TIME	3:00pm
1. RECEIVED BY: SIGNATURE:	Guy R. Richard	DATE	8/6/93	2. RECEIVED BY: SIGNATURE:	S. Drahan,	DATE	8-6-93
PRINTED NAME/COMPANY:	Guy Richards / CORE LABS	TIME	2:30pm	PRINTED NAME/COMPANY:	S. Trahan / Core	TIME	1500

3. RELINQUISHED BY:	DATE
SIGNATURE:	
PRINTED NAME/COMPANY:	TIME
3. RECEIVED BY:	DATE
SIGNATURE:	
PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, California — 1250 E. Gene Autry Way, Anaheim, California 92805, (714) 937-1094
☐ Long Beach, California — 3700 Cherry Avenue, Long Beach, California 90807, (310) 595-8401
☐ Denver (Aurora), Colorado — 1300 S. Potomac St. - Suite 130, Aurora, Colorado 80012, (303) 751-1280
☐ Casper, Wyoming — 420 West 1st Street, Casper, Wyoming 82601, (307) 235-5141
☐ Houston, Texas — 10201 Westheimer, Bldg. 1-A, Houston, Texas 77042, (713) 972-[illegible]
☐ Houston, Texas — 8210 Mosely Road, Houston, Texas 77075, (71[illegible]
☐ Corpus Christi, Texas — 1733 North Padre Island Dr., Corpus Christi, Texas 78408, (5[illegible]
☑ Lake Charles, Louisiana — 3645 Arkansa Street, Sulphur, Louisiana 70663, (3[illegible]

#430

3rd 430

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CORE LABORATORIES

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: OVAC, Inc.	PROJECT NAME/NUMBER: Farmington / #430
SEND REPORT TO: Kirby Vinson	BILLING INFORMATION
ADDRESS: P.O. Box 16584	BILL TO: OVAC, Inc.
Lake Charles, LA	ADDRESS: P.O. Box 16584
	Lake Charles, LA
PHONE: (318) 433-1602	PHONE: 433-1602
(318) 436-4144	FAX: 436-4144 PO NO.:

LAB JOB NO. 932944

SAMPLE NO.	SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	NUMBER OF CONTAINERS	ANALYSIS / METHOD REQUEST: VOC	TCLP-metals	TPH	pH	REMARKS / PRECAUTIONS
11	6FF1.2	8/4/93	1:40pm	Soil	glass	none	2		X	X	X	
12	~~6FF~~ 7GF	8/4/93	2:00pm	Soil	glass	none	2	X				
13	7GF	8/4/93	2:00pm	Soil	glass	none	2		X	X	X	
14	8HF1	8/4/93	2:08pm	Soil	glass	none	1	X		X	-	
15	8HF2	8/4/93	2:03pm	Soil	glass	none	1		X			
16	9IF	8/4/93	2:20pm	Soil	glass	none	1	√	√	√		Background
17	6FF	8/4/93	1:37pm	Soil	glass	none	1	X				

SAMPLER: Joe DeVecchio

SHIPMENT METHOD:

AIRBILL NO.:

REQUIRED TURNAROUND:* ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☐ ROUTINE OTHER Rush

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Joseph DelVecchio	8/6/93	SIGNATURE: Guy Richard	8/6/93	SIGNATURE:	
PRINTED NAME/COMPANY: OVAC, Inc. / Joseph DelVecchio	TIME 2:30pm	PRINTED NAME/COMPANY: Guy Richards / Core Lab	TIME 3:00 pm	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Guy R. Richard	8/6/93	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Guy Richards / CORE LABS	TIME 2:30pm	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, California 1250 E. Gene Autry Way Anaheim, California 92805 (714) 937-1094

☐ Long Beach, California 3700 Cherry Avenue Long Beach, California 90807 (310) 595-8401

☐ Denver (Aurora), Colorado 1300 S. Potomac St. - Suite 130 Aurora, Colorado 80012 (303) 751-1780

☐ Casper, Wyoming 420 West 1st Street Casper, Wyoming 82601 (307) 235-5741

☐ Houston, Texas 10201 Westheimer, Bldg. 1-A Houston, Texas 77042 (713) 972-6700

☐ Houston, Texas 8210 Mosely Road Houston, Texas 77075 (713) 943-8776

☐ Corpus Christi, Texas 1733 North Padre Island Dr. Corpus Christi, Texas 78408 (512) 289-2673

☑ Lake Charles, Louisiana 3945 Ariana Street Sulphur, Louisiana 70663 (318) 583-4928