CLOSURE REPORT

Bowen Tools Facility
Hobbs, New Mexico

ENSR®

Closure Report

Prepared For:
Air Liquide America Corporation
Houston, Texas

Prepared By:
ENSR Corporation
April 1999
Documentation Number 0077013-411-cplan

Soil and groundwater quality data from the previous assessment was presented during a meeting at OCD offices in Santa Fe, New Mexico, on December 3, 1998. The data demonstrated that suspected hydrocarbon constituents were not present in the groundwater at the site and the only constituents detected above New Mexico drinking water standards were total dissolved solids (TDS) and selenium. During the December 3 meeting, the NMOCD requested that additional groundwater quality data be obtained to show whether TDS and selenium concentrations were present up gradient of the former shallow well.

ENSR submitted a proposed Groundwater Sampling Plan to the NMOCD in a letter dated December 10, 1998. The plan proposed two on-site and one off-site temporary groundwater monitor wells. The proposed location of the groundwater monitor wells was revised in a letter dated January 6, 1999 by relocating the off-site well onto the Bowen Tools site. The NMOCD approved the revised well locations, and requested a fourth well be placed in the source area. The Agency also requested additional groundwater analyses of volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), selected metals, and general water chemistry as contained in New Mexico Water Quality Control Commission (NMWQCC) regulations and detailed in their letter dated January 27, 1999.

To obtain the requested groundwater quality data necessary to obtain regulatory closure, ENSR installed and sampled four groundwater monitor wells at the site. The monitor wells were surveyed to provide data to approximate groundwater gradient. A description of the fieldwork is presented below. Monitor well locations are contained in Figure 2.

Monitor Well Installation

McDonald Drilling, Inc. of Odessa, Texas, a New Mexico-certified monitor well driller, installed the four wells to 80 ft on February 10 and 11, 1999. Due to the presence of bedrock at depths from 5 to 15 ft, air rotary drilling techniques were used. Also, well centralizers were installed at depths of 35 ft, 65 ft, and 80 ft below ground surface to keep the well casing centered in the hole. Soil cuttings and purged groundwater were containerized in 55-gal., DOT-approved drums and stored on site for future disposal. Soil and groundwater contained in the drums were characterized for disposal. Analytical results are contained in the attached laboratory reports. Upon completion of the project, these drums will be removed from the site by USA Environmental Services for disposal under manifest at an approved facility.

Procedures used during monitor well installation, development, and sampling were in general accordance with New Mexico's closure guidance pertaining to site assessment, groundwater sampling, and the installation, construction and development of groundwater monitor wells. New Mexico State Engineer's Well Record forms were submitted to the engineer's office in Santa Fe, New Mexico. Soil boring logs are presented as an attachment.

Following completion, the wells were surveyed on February 12, 1999 for relative elevation and location by the New Mexico-registered professional surveying firm of John West Engineering Company, Hobbs, New Mexico. The elevation datum was assumed.

Water Level Gauging. Depth to groundwater in the wells was measured using an electronic water level meter calibrated in 0.01-ft increments. Measurements were made from the surveyed top of the PVC casing in each monitor well. Relative groundwater elevations were calculated by subtracting the depth of groundwater from the surveyed top of casing elevation. Depth to water, relative top of casing elevations and relative groundwater elevations, are presented in Table 1.

Monitor Well Sampling. Prior to sampling, the wells were purged by removing at least three well volumes of groundwater. Temperature, pH, and turbidity were measured and recorded during purging and are contained in Table 2. Due to equipment failure, conductivity data was not collected. Groundwater was then sampled using a disposable bailer suspended from a dedicated line.

The samples were sealed, labeled, and placed in two ice-filled coolers for transport to Core Laboratories, Inc. of Sulphur, Louisiana, an EPA-certified analytical laboratory. Laboratory-provided trip blanks accompanied the samples in the coolers. Chain-of-custody records are contained in an attachment to this report.

Groundwater Quality Results

The groundwater sample collected from the potential source area (MW-2) was analyzed for the parameters requested by the NMOCD. Groundwater samples from the remaining wells were analyzed for constituents of concern that were detected in the sample from MW-2. In addition, because of short laboratory holding times, samples from each well were analyzed for SVOCs. Because of high turbidity, some samples were analyzed for dissolved metals to better represent groundwater quality, in these cases the dissolved concentrations rather than the totals were compared to NMOCD groundwater standards.

None of the suspected constituents of concern (hydrocarbons) were reported in groundwater samples obtained from the four wells at the subject property. Laboratory data indicates that TDS concentrations and chloride were detected above New Mexico standards for domestic water supply. Selenium was not detected above the laboratory detection limit. The TDS and chloride concentrations reported are very consistent across the site ranging from 1,100 to 1,180 mg/l for TDS and 250 to 300 mg/l for chloride. Concentrations at these levels are not indicative of a release from this site. TDS and chlorides are mapped in Figures 3 and 4. Laboratory results are summarized in Table 3.

Anion/Cation balance was calculated at 60.59/62.68 or a cation imbalance of 1.07. The result is not statistically significant and does not indicate an environmental condition exists at the site.

Groundwater Elevation

ENSR conducted a survey of the monitor well locations in relationship to a fixed point at the site and measured the depth to groundwater prior to sampling the monitor wells. The purpose of this task was to establish groundwater gradient below the site. Based on the data generated, groundwater flow direction appears to be complex at the site, possibly because of the rocky substrata. The data suggests groundwater flows southwest at the site. Groundwater gradient is mapped in Figure 2.

Summary

VOCs and SVOCs were not detected in the groundwater samples obtained from the source well at the subject property. Total metals were detected above the New Mexico drinking water standards, however dissolved metals analyses suggested the concentrations detected were from sediment contained in the water samples. TDS and chlorides were detected above the drinking water standards. The concentration of TDS and chlorides detected in the source well (MW-2) were less than concentrations detected in the other wells, indicating the former well is not the source.

The laboratory analytical results do not indicate that site activities have resulted in an impact to groundwater at the site and closure of the former oil/water separator and shallow well is in substantial compliance with NMOCD closure requirements and is protective of human health and the environment. Based on these findings, we request regulatory closure of the former oil/water separator and shallow well.

Closing

Upon receiving written approval from the OCD, concurring with the findings presented, Bowto, Inc. will initiate monitor well abandonment procedures. Air Liquide and ENSR look forward to obtaining closure for this project and are available to discuss this report. Please contact us at (713) 520-9900 if you have any questions or comments regarding this project.

Sincerely,

Russell G. Turner
Sr. Project Manager

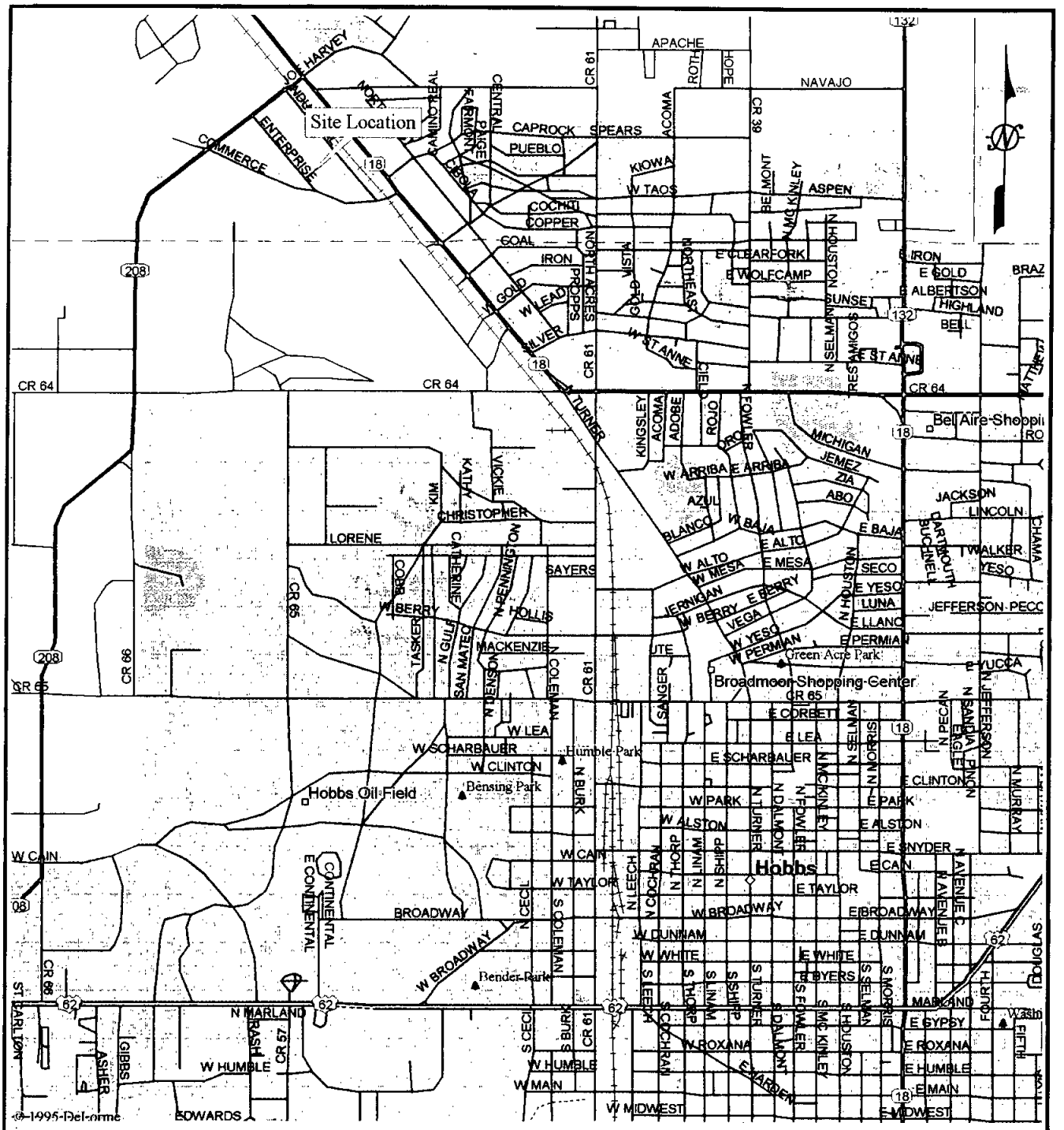
Mark A. Board, P.E.
Sr. Project Manager

cc: Chad Briggs, Stephanie Payne, John Rayburn, and Robert Shansky

Attachments:
Figures
Tables
Analytical Reports

FILENAME: [S:\RS\96MISC\BOWEN\Hobbs\411closure.doc]

FIGURES



0 1/2 1

SCALE IN MILES

REFERENCE: DeLorme Street Atlas U.S.A., 1995

ENSR CORPORATION

FIGURE 1

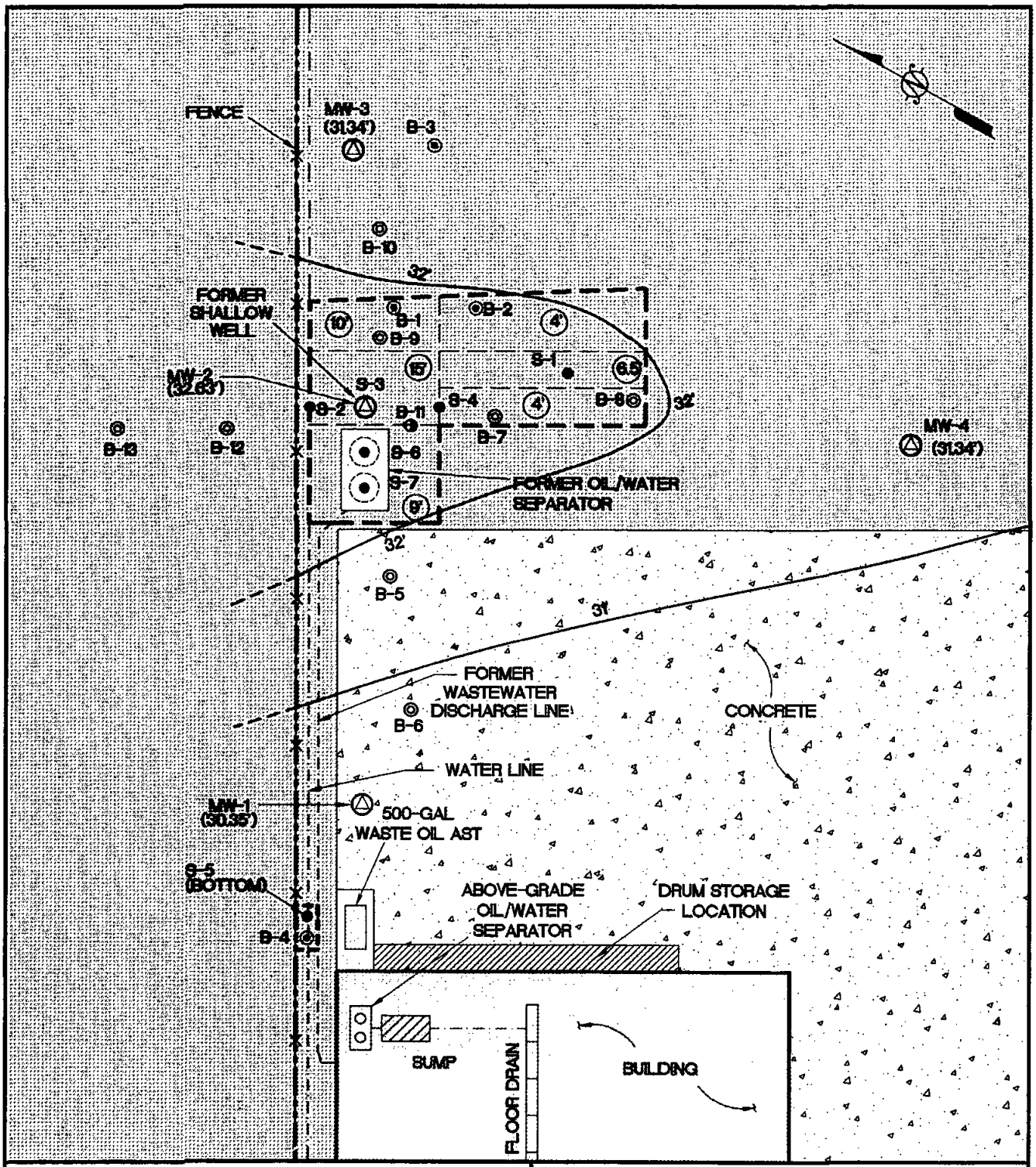
SITE LOCATION MAP

AIR LIQUIDE AMERICA CORPORATION

BOWEN TOOLS FACILITY

HOBBS, NEW MEXICO

DRAWN: J. MITCHELL	DATE: 5-20-97	PROJECT NUMBER:
APPV'D: R. GREEN	REVISED:	0561-0137-411



NOTES:
PLAN DEVELOPED FROM TAPING, VISUAL OBSERVATIONS AND DRAWING PROVIDED BY BOWTO, INC. ALL LOCATIONS ARE APPROXIMATE. ELEVATION DATUM IS ASSUMED.

LEGEND:

- (10') DEPTH OF EXCAVATION
- ● VERIFICATION SAMPLE LOCATION AND I.D.
- ◉ PHASE II BORING LOCATION
- ◎ PHASE III BORING LOCATION
- ◑ PHASE III SOIL BORING/TEMPORARY WELL LOCATION
- △ MONITOR WELL LOCATION AND GW ELEVATION
- APPROXIMATE PROPERTY BOUNDARY
- LIMITS OF EXCAVATION
- BELOW GRADE LINE

0 20 40

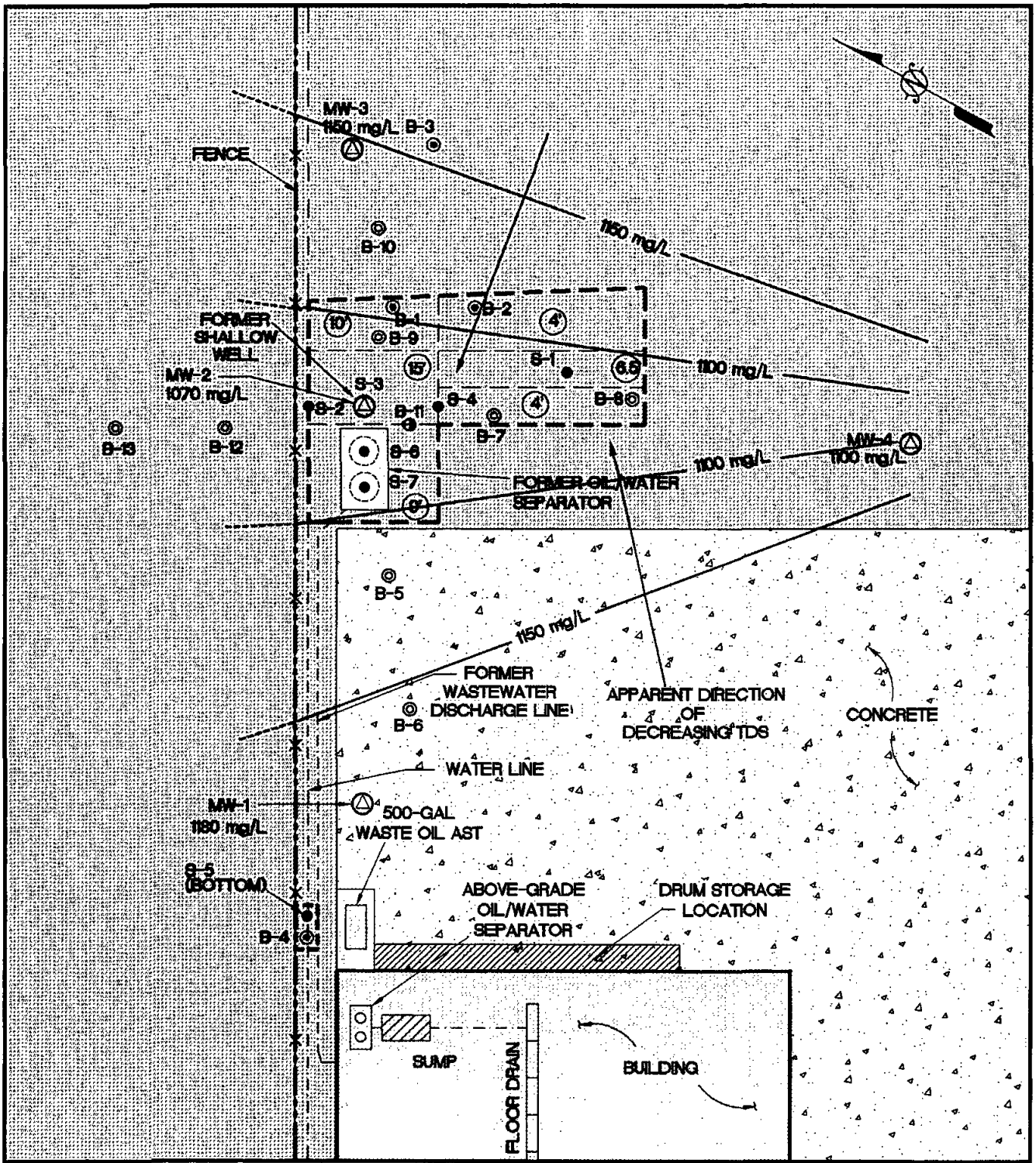
SCALE IN FEET

DWG. No. 00770116

ENSR CORPORATION

FIGURE 2
MONITOR WELL LOCATION AND GROUNDWATER ELEVATION MAP
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

DRAWN: R. FAISON	DATE: 2-18-98	PROJECT NUMBER:	
APPV'D: M. BOARD	REVISED: 4-9-99	0077-013-411	



NOTES:
PLAN DEVELOPED FROM TAPING, VISUAL OBSERVATIONS AND DRAWING PROVIDED BY BOWTO, INC. ALL LOCATIONS ARE APPROXIMATE. CONTOURS GENERATED FROM A LIMITED NO. OF SAMPLES AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS.

LEGEND:

- (10') DEPTH OF EXCAVATION
- ● VERIFICATION SAMPLE LOCATION AND I.D.
- ⊙ PHASE II BORING LOCATION
- ◎ PHASE III BORING LOCATION
- ◑ PHASE III SOIL BORING/TEMPORARY WELL LOCATION
- △ MONITOR WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- —1150— TDS CONCENTRATIONS IN mg/L

0 20 40

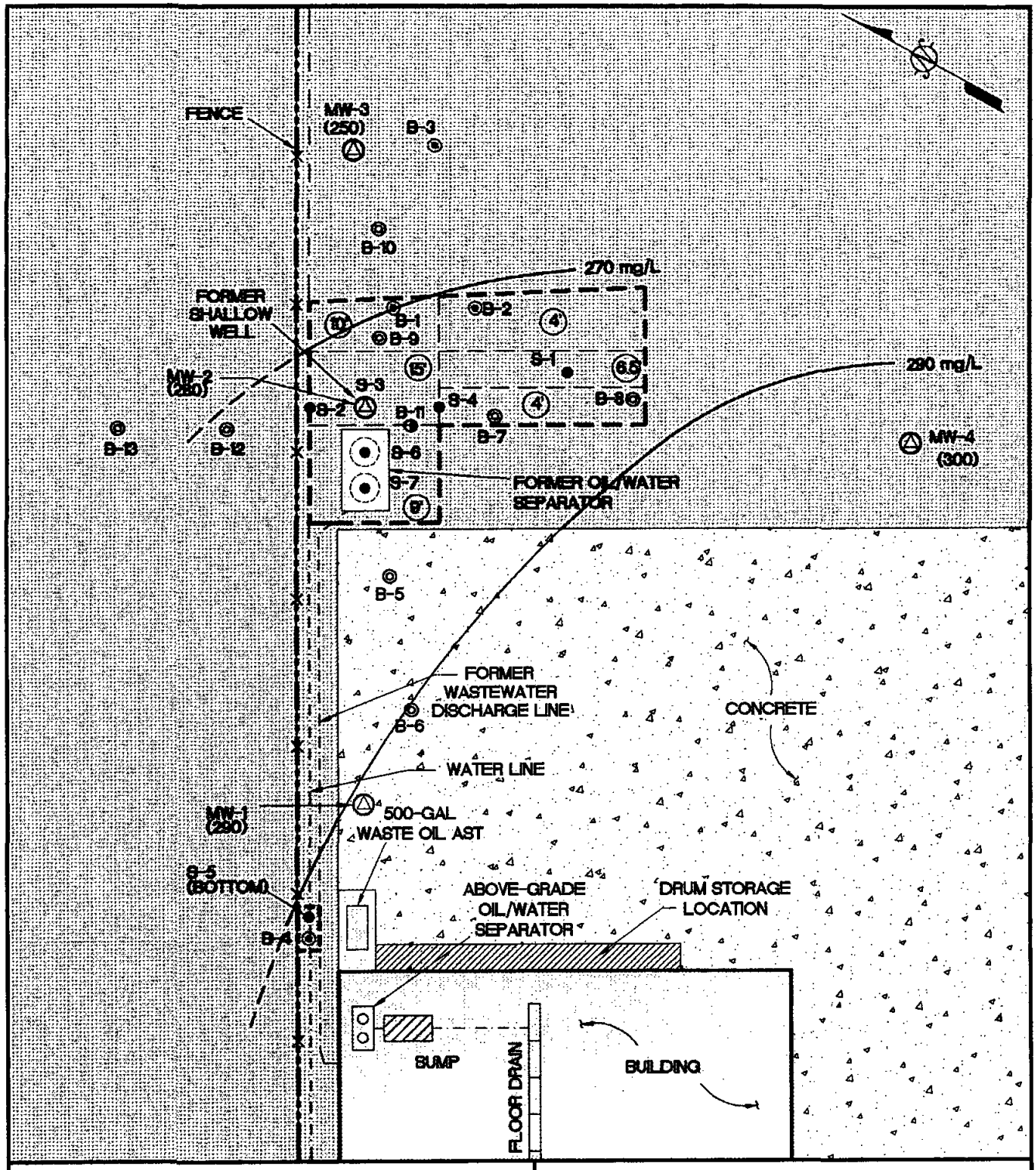
SCALE IN FEET

ENSR CORPORATION

FIGURE 3
TOTAL DISSOLVED SOLIDS ISOPLETH MAP
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

DRAWN:	R. FAISON	DATE:	2-18-98	PROJECT NUMBER:
APP'VD:	M. BOARD	REVISED:	4-20-99	0077-013-411

DWG. No. 00770116A



NOTES:
PLAN DEVELOPED FROM TAPING, VISUAL OBSERVATIONS AND DRAWING PROVIDED BY BOWTO, INC. ALL LOCATIONS ARE APPROXIMATE. ELEVATION DATUM IS ASSUMED.

LEGEND:

- (10') DEPTH OF EXCAVATION
- ● VERIFICATION SAMPLE LOCATION AND I.D.
- ◉ PHASE II BORING LOCATION
- ◎ PHASE III BORING LOCATION
- ◑ PHASE III SOIL BORING/TEMPORARY WELL LOCATION
- △ MONITOR WELL LOCATION
- ---·--- APPROXIMATE PROPERTY BOUNDARY
- —270— CHLORIDE CONCENTRATIONS IN mg/L

0 20 40

SCALE IN FEET

DWG. No. 00770116B

ENSR CORPORATION

FIGURE 4

CHLORIDE ISOPLETH

BOWEN TOOLS FACILITY

HOBBS, NEW MEXICO

DRAWN: R. FAISON	DATE: 2-18-98	PROJECT NUMBER:	
APPV'D: M. BOARD	REVISED: 4-21-99	0077-013-411	

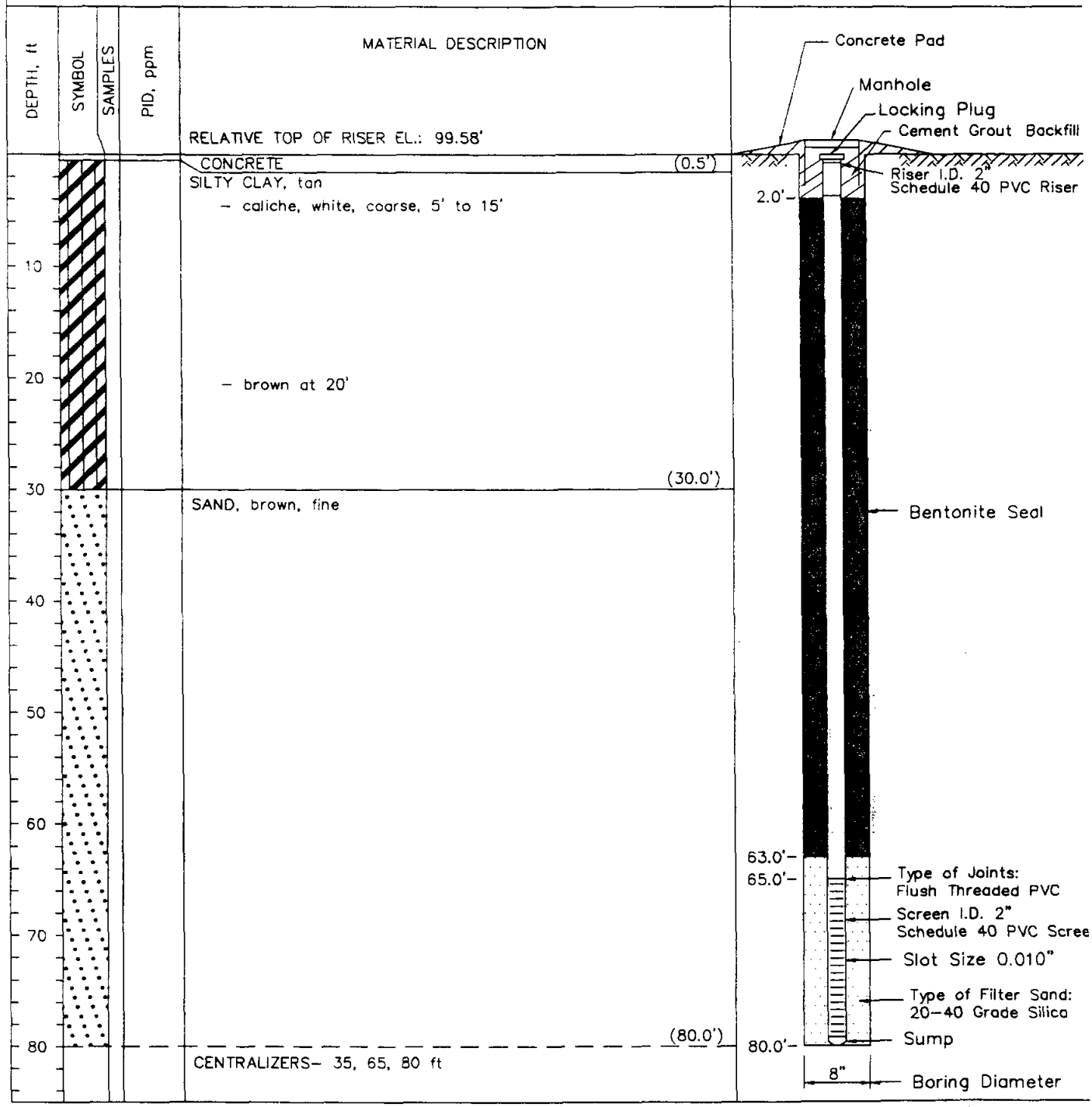
MONITORING WELL INSTALLATION REPORT MW-1
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

LOCATION: SEE FIGURE 2

INSTALLATION METHOD: Air Rotary

LOG OF BORING NO. MW-1

MONITORING WELL NO. MW-1



BORING COMPLETION DATE: 2–10–99
MONITORING WELL COMPLETION DATE: 2–10–99
MONITORING WELL DEVELOPMENT DATE: 2–11–99
DEPTH TO WATER: 69.23 ft
NOTE: GROUNDWATER SAMPLES COLLECTED FOR CHEMICAL ANALYSIS.

COMPLETION DEPTH: 80.0 ft
WATER FIRST NOTICED: 70 ft
DRILLED BY: McDONALD DRILLING
LOGGED BY: CHRISTI KIKER

MONITORING WELL INSTALLATION REPORT MW-2
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

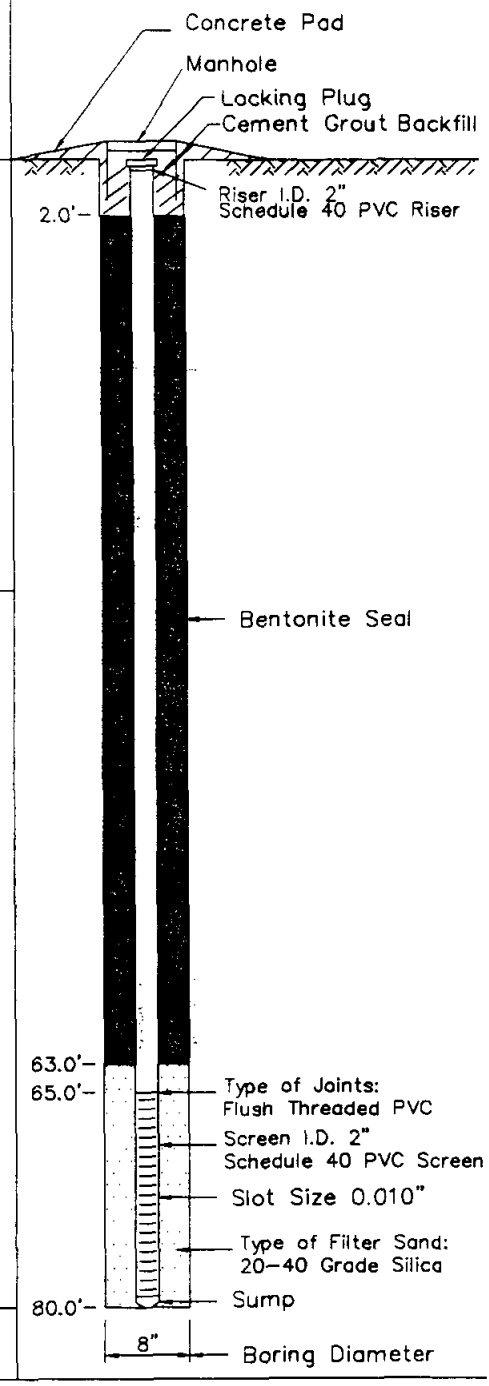
LOCATION: SEE FIGURE 2

INSTALLATION METHOD: Air Rotary

LOG OF BORING NO. MW-2

MONITORING WELL NO. MW-2

DEPTH, ft	SYMBOL	SAMPLES	PID, ppm	MATERIAL DESCRIPTION
				RELATIVE TOP OF RISER EL.: 101.14'
0				SILTY CLAY, tan
				– caliche, white, coarse, 5' to 15'
10				
20				– brown at 20'
30				(30.0')
				SAND, brown, fine
40				
50				
60				
70				
80				(80.0')
				CENTRALIZERS– 35, 65, 80 ft



BORING COMPLETION DATE: 2–10–99
MONITORING WELL COMPLETION DATE: 2–10–99
MONITORING WELL DEVELOPMENT DATE: 2–11–99
DEPTH TO WATER: 68.51 ft
NOTE: GROUNDWATER SAMPLES COLLECTED FOR CHEMICAL ANALYSIS.

COMPLETION DEPTH: 80.0 ft
WATER FIRST NOTICED: 70 ft
DRILLED BY: McDONALD DRILLING
LOGGED BY: CHRISTI KIKER

Report No. 0077–013–411

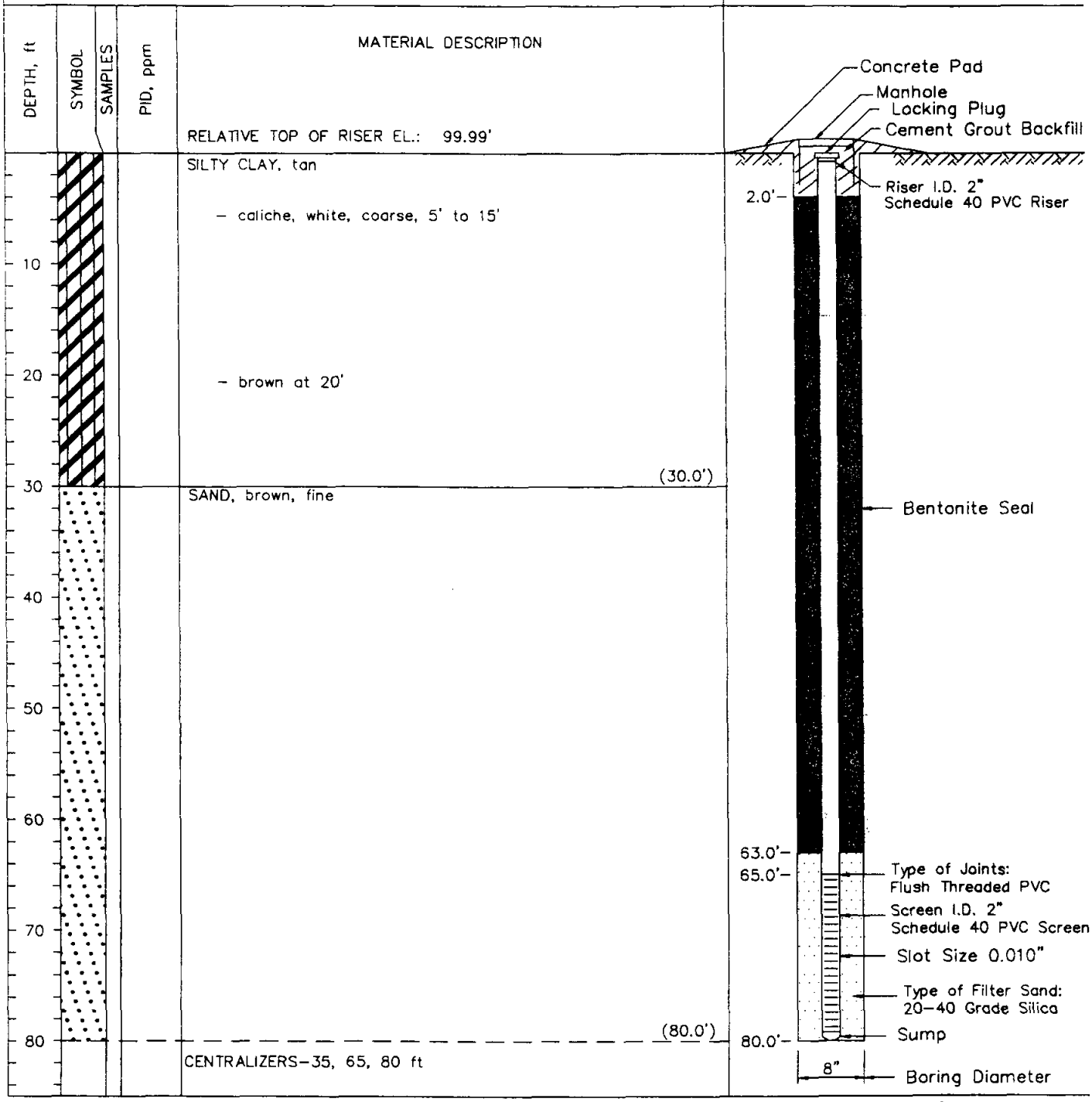
MONITORING WELL INSTALLATION REPORT MW-3
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

LOCATION: SEE FIGURE 2

INSTALLATION METHOD: Air Rotary

LOG OF BORING NO. MW-3

MONITORING WELL NO. MW-3



BORING COMPLETION DATE: 2–11–99
MONITORING WELL COMPLETION DATE: 2–11–99
MONITORING WELL DEVELOPMENT DATE: 2–11–99
DEPTH TO WATER: 68.65 ft
NOTE: GROUNDWATER SAMPLES COLLECTED FOR CHEMICAL ANALYSIS.

COMPLETION DEPTH: 80.0 ft
WATER FIRST NOTICED: 70 ft
DRILLED BY: McDONALD DRILLING
LOGGED BY: CHRISTI KIKER

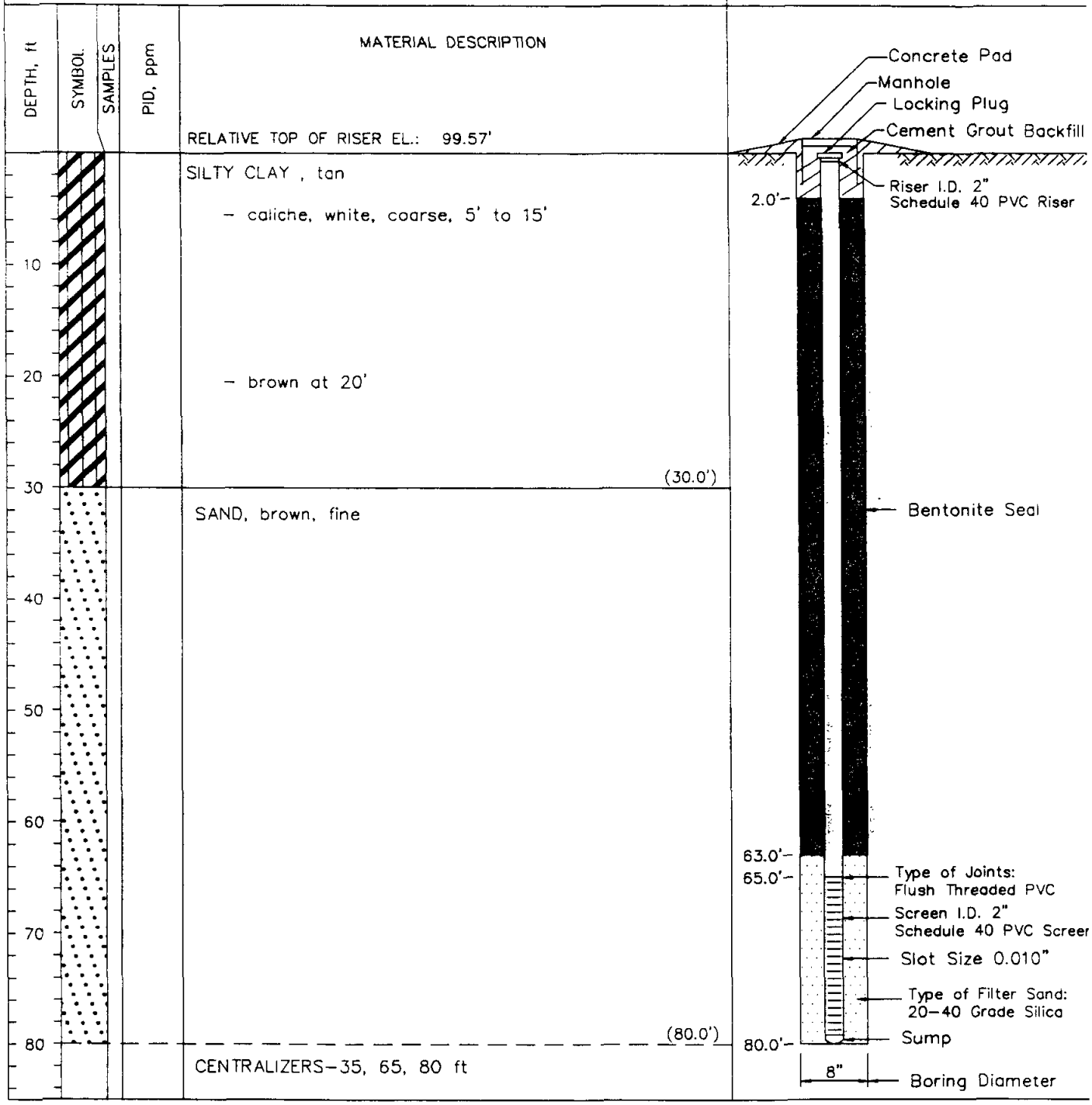
MONITORING WELL INSTALLATION REPORT MW-4
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

LOCATION: SEE FIGURE 2

INSTALLATION METHOD: Air Rotary

LOG OF BORING NO. MW-4

MONITORING WELL NO. MW-4



BORING COMPLETION DATE: 2-11-99
MONITORING WELL COMPLETION DATE: 2-11-99
MONITORING WELL DEVELOPMENT DATE: 2-11-99
DEPTH TO WATER: 68.23 ft
NOTE: GROUNDWATER SAMPLES COLLECTED FOR CHEMICAL ANALYSIS.

COMPLETION DEPTH: 80.0 ft
WATER FIRST NOTICED: 70 ft
DRILLED BY: McDONALD DRILLING
LOGGED BY: CHRISTI KIKER

TABLES

Monitor Well Identification	Relative Top of Casing Elevation[1]	Monitor Well Screen Interval	Depth to Groundwater from Top of Casing	Relative Groundwater Elevation
M-1	99.58	65.0 to 80.0	69.23	30.35
M-2	101.14	65.0 to 80.0	68.51	32.63
M-3	99.99	65.0 to 80.0	68.65	31.34
M-4	99.57	65.0 to 80.0	68.23	31.34

Notes:
1. All elevations and depths are presented in feet.
2. Water levels gauged on February 12, 1999.
3. Relative top of casing and ground surface elevation surveyed by John West Surveying Company of Hobbs, New Mexico. Elevation datum is assumed.

TABLE 1
GROUNDWATER MONITORING WELL ELEVATION DATA
Bowto, Inc.
Bowen Tools Facility
Hobbs, New Mexico

Constituent	Cation/Anion Balance		pH	TDS	Temperature (°C)	Turbidity
MW-1	--	--	7.48	1180	14.8	37
MW-2	62.68	60.59	7.68	1070	13.6	42
MW-3	--	--	7.73	1150	9.5	42
MW-4	--	--	7.84	1100	10.4	50
NM Standards	-	-	≥ 6 and ≤ 9	1000	-	-

Notes: 1. - = No standard
2. -- = Not analyzed or not applicable
3. Equipment malfunction
4. **6.6** = Concentration exceeds one of the standards.

TABLE 2
GENERAL CHEMISTRY ANALYTICAL RESULTS
Bowto, Inc.
Bowen Tools Facility
Hobbs, New Mexico

Constituent	Aluminum[3]		Antimony	Arsenic	Barium		Beryllium	Boron[3]	Bromide	Cadmium	Calcium	Chloride[4]	Chromium	
	Dissolved	Total			Dissolved	Total							Dissolved	Total
MW-1	0.14	20.4	--	--	0.09	0.42	--	--	--	--	--	290	< 0.05	< 0.05
MW-2	<0.05	91.8	< 0.05	< 0.05	0.08	1.56	< 0.05	0.39	1.1	< 0.01	983	280	< 0.05	0.11
MW-3	<0.05	12.3	--	--	0.07	0.27	--	--	--	--	--	250	< 0.05	< 0.05
MW-4	<0.05	246	--	--	0.07	5.24	--	--	--	--	--	300	< 0.05	0.30
NM Standard	5.0		-	0.1	1.0		-	0.75	-	0.01	-	250	0.05	

TABLE 3
METALS ANALYTICAL RESULTS
Bowto, Inc.
Bowen Tools Facility
Hobbs, New Mexico

Constituent	Cobalt[3]	Copper[3]	Fluoride	Iron[4]		Lead	Magnesium	Manganese[4]		Mercury	Molybdenum[5]		Nickel[5]
				Dissolved	Total			Dissolved	Total		Dissolved	Total	
MW-1	--	--	--	<0.05	11.3	--	--	< 0.05	0.27	--	--	--	--
MW-2	< 0.05	< 0.05	1.5	0.13	54.5	< 0.05	102	< 0.05	0.83	< 0.002	0.16	1.17	0.07
MW-3	--	--	--	<0.05	7.06	--	--	< 0.05	0.16	--	--	--	--
MW-4	--	--	--	<0.05	131	--	--	< 0.05	2.45	--	--	--	--
NM Standard	0.05	1.0	1.6	1.0		0.05	-	0.2		0.002	1.0		0.2

TABLE 3
METALS ANALYTICAL RESULTS
Bowto, Inc.
Bowen Tools Facility
Hobbs, New Mexico

Constituent	Nitrate	Potassium	Selenium		Silver		Sodium	Sulfate[4]	Titanium	Vanadium		Zinc[4]
			Dissolved	Total	Dissolved	Total				Dissolved	Total	
MW-1	--	--	< 0.01	< 0.01	--	--	--	--	--	<0.05	0.10	--
MW-2	<0.05	22.8	< 0.01	< 0.01	< 0.05	< 0.05	107	150	1.29	<0.05	0.29	0.11
MW-3	--	--	< 0.01	< 0.01	--	--	--	--	--	<0.05	0.05	--
MW-4	--	--	< 0.01	< 0.01	--	--	--	--	--	<0.05	0.78	--
NM Standard	-	-	0.05		-		-	600	-	-		10

Notes:
1. All concentrations analyzed using EPA Method 6010B, except Bromide, EPA Method 300; Chloride, EPA Method 4500-Cl B; Fluoride, EPA Method 4500-F C; Mercury, EPA Method 7470; Selenium, EPA Method 7470; SO4, EPA Method 375.4 and Nitrate EPA Method 353.3.
2. - = *No standard.*
3. -- = Not analyzed or not applicable.
4. Cl, Cu, Fe, Mn, SO_4, and Zn are other standards for Domestic Water Supply.
5. Al, B, Co, Md, and Ni are standards for Irrigation Use.
6. *All data presented in mg/l.*
7. **6.6** = Concentration exceeds New Mexico standard.

TABLE 3
METALS ANALYTICAL RESULTS
Bowto, Inc.
Bowen Tools Facility
Hobbs, New Mexico

LABORATORY REPORTS

CORELAB

REVISED

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 990480

Prepared For:

ENSR
3000 RICHMOND AVE., STE 400
HOUSTON, TX 77098

Attention: RUSSELL TURNER

Date: 04/19/99

Tina T. Davis

Signature

04/19/99

Date

Name: Tina T. Davis

Title: Laboratory Manager

3645 Beglis Parkway
Sulphur, LA 70665

Phone: 318-583-4926
Fax: 318-583-4929

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990480

The revised report reflects the following changes:

SAMPLE ID:	PARAMETER	CHANGES MADE:
990480-0001	TOTAL SELENIUM: EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L
990480-0001	DISSOLVED SELENIUM EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L

Reviewed by:

Tina Davis

Tina Davis, Laboratory Manager — 04/19/99 Date

Mary Arnold

Mary Arnold, QA/QC Coordinator — 04-19-99 Date

REVISED

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990480

ANALYSIS: METALS: EPA METHOD: SW-846 6010B

The revised report reflects the addition of the following metals analysis for sample 990480-0001(Client ID:MW-1 (A-H), as requested by the client.

aluminum(dissolved)
iron(dissolved)
vanadium(dissolved)

Reviewed by:

Tina Davis, Laboratory Manager — Date: 04/16/99

Mary Arnold, QA/QC Coordinator — Date: 04/16/99

CORE LABORATORIES

S A M P L E I N F O R M A T I O N
Date: 04/19/99

Job Number.: 990480
Customer ..: ENSR
Attn.....: RUSSELL TURNER

Project Number.....: 99999910
Customer Project ID....: BOWEN-HOBBS007013411
Project Description....: Walk in Project

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
990480-1	MW-1 (A-H)	Water	02/11/99	15:00	02/13/99	12:35
990480-2	TRIP BLANK	Water			02/13/99	12:35

REVISED

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-1 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 15:00
Sample Matrix.....: Water

Laboratory Sample ID: 990480-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SM 4500-CL B	Chloride	290	20	mg/L	03/11/99	cmg
EPA 160.1	Solids, Total Dissolved (TDS)	1180	50	mg/L	02/15/99	sps
SW-846 7740	Selenium (Se)	<0.01	0.01	mg/L	03/10/99	bt
SW-846 7740	Selenium (Se), Diss.	<0.01	0.01	mg/L	03/15/99	bt
SW-846 3015	Acid Digestion, Total Metals	Complete		mg/L	03/09/99	rl
SW-846 3015	Acid Digestion, Total Metals (GFAA)	Complete		mg/L	03/09/99	rl
	Filter sample prior to analysis	Complete			02/15/99	rl
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al)	20.4	0.10	mg/L	04/15/99	bt
	Barium (Ba)	0.42	0.05	mg/L	03/15/99	bt
	Chromium (Cr)	<0.05	0.05	mg/L	03/15/99	bt
	Iron (Fe)	11.3	0.05	mg/L	03/15/99	bt
	Manganese (Mn)	0.27	0.05	mg/L	03/15/99	bt
	Vanadium (V)	0.10	0.05	mg/L	03/15/99	bt
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al), Diss.	0.14	0.05	mg/L	03/15/99	bt
	Barium (Ba), Diss.	0.09	0.05	mg/L	03/15/99	bt
	Chromium (Cr), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Iron (Fe), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Manganese (Mn), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Vanadium (V), Diss.	<0.05	0.05	mg/L	03/15/99	bt
SW-846 3510B	Extraction (Sep. Funnel) - Semivolatiles					
	Separatory Funnel Liq/Liq Extraction	complete			02/18/99	*HE
SW-846 8270C	Semivolatile Organics					
	Acenaphthene	ND	10.0	ug/L	02/19/99	*HE
	Acenaphthylene	ND	10.0	ug/L	02/19/99	*HE
	Anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(b)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(k)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(ghi)perylene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Butyl benzyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethoxy)methane	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroisopropyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-ethylhexyl)phthalate	ND	10.0	ug/L	02/19/99	*HE
	4-Bromophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-1 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 15:00
Sample Matrix.....: Water

Laboratory Sample ID: 990480-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Carbazole	ND	10.0	ug/L	02/19/99	*HE
	4-Chloroaniline	ND	10.0	ug/L	02/19/99	*HE
	2-Chloronaphthalene	ND	10.0	ug/L	02/19/99	*HE
	4-Chlorophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE
	Chrysene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzo(a,h)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzofuran	ND	10.0	ug/L	02/19/99	*HE
	1,2-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,3-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,4-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	3,3-Dichlorobenzidine	ND	20.0	ug/L	02/19/99	*HE
	Diethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Dimethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-butyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-octyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	2,6-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	Fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Fluorene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobutadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorocyclopentadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachloroethane	ND	10.0	ug/L	02/19/99	*HE
	Indeno(1,2,3-cd)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Isophorone	ND	10.0	ug/L	02/19/99	*HE
	2-Methylnaphthalene	ND	10.0	ug/L	02/19/99	*HE
	Naphthalene	ND	10.0	ug/L	02/19/99	*HE
	o-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	m-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	p-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	Nitrobenzene	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodi-n-propylamine	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodiphenylamine	ND	10.0	ug/L	02/19/99	*HE
	Phenanthrene	ND	10.0	ug/L	02/19/99	*HE
	Pyrene	ND	10.0	ug/L	02/19/99	*HE
	1,2,4-Trichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	4-Chloro-3-methylphenol	ND	10.0	ug/L	02/19/99	*HE
	2-Chlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dichlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dimethylphenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methyl-4,6-dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methylphenol (o-cresol)	ND	10.0	ug/L	02/19/99	*HE
	3 & 4 Methylphenol (m&p cresol)	ND	10.0	ug/L	02/19/99	*HE
	2-Nitrophenol	ND	10.0	ug/L	02/19/99	*HE
	4-Nitrophenol	ND	50.0	ug/L	02/19/99	*HE
	Pentachlorophenol	ND	50.0	ug/L	02/19/99	*HE
	Phenol	ND	10.0	ug/L	02/19/99	*HE
	2,4,5-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-1 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 15:00
Sample Matrix.....: Water

Laboratory Sample ID: 990480-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	2,4,6-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: EPA 160.1 Batch.....: 2897 Analyst...: sps
Method Description.: Solids, Total Dissolved (TDS) Units.....: mg/L
Parameter.....: Solids, Total Dissolved (TDS)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<50						50	02/15/99 1350
MD	990480-1		1162			1176	1.2	R	20	02/15/99 1350

Test Method.....: SM 4500-CL B Batch.....: 3269 Analyst...: cmg
Method Description.: Chloride (argentometric) Units.....: mg/L
Parameter.....: Chloride

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<2						2	03/11/99 1400
LCS		WS990703	47		50.000000		94.0	%	90.0-110.0	03/11/99 1400
MD	990660-2		76			76	0.0	R	20	03/11/99 1400
MS	990660-2	WS990703	165		100.000000	76	89.0	%	80-120	03/11/99 1400

Test Method.....: SW-846 7740 Batch.....: 3273 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/10/99 1400
ICV		MS990128	0.0258		0.0250		103.2	%	90-110	03/10/99 1506
MB			<0.01						0.005	03/10/99 1613
LCS		MS990128	0.0267		0.0250		106.8	%	80-120	03/10/99 1719
MS	990482-1	MS990128	0.0219		0.0250	<0.01	87.6	%	75-125	03/10/99 1932
MSD	990482-1	MS990128	0.0170	0.0219	0.0250	<0.01	68.0	%	75-125	03/10/99 2038
							25.2	R	20	
CCB			<0.01						0.005	03/10/99 2144
CCV		MS990128	0.0244		0.0250		97.6	%	80-120	03/10/99 2251
CCB	31099 -2		<0.01						0.005	03/11/99 0528
CCV	31099 -2	MS990128	0.0207		0.0250		82.8	%	80-120	03/11/99 0635
PDS	990842-1	MS990128	0.0246		0.0250	<0.01	98.4	%	75-125	03/11/99 0741
PSD	990842-1	MS990128	0.0231	0.0246	0.0250	<0.01	92.4	%	75-125	03/11/99 0847
							6.3	R	20	
CCB	31099 -3		<0.01						0.005	03/11/99 0954
CCV	31099 -3	MS990128	0.0264		0.0250		105.6	%	90-110	03/11/99 1100

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00867						0.10	03/15/99 1324
ICV		MS990112	9.73339		10.0		97.3	%	90-110	03/15/99 1333
ISA		MS990095	96.65311		100.0		96.7	%	80-120	03/15/99 1344
ISB		MS990094	95.51260		100.0		95.5	%	80-120	03/15/99 1349
CCB			-0.07681						0.10	03/15/99 1416
CCV		MS990107	4.84232		5.000		96.8	%	90-110	03/15/99 1429
CCV		MS990107	4.87135		5.000		97.4	%	90-110	03/15/99 1533

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCB			0.02668						0.10	03/15/99 1559
CCB			0.00653						0.10	03/15/99 1658
CCV		MS990107	4.96395		5.000		99.3	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.10994		1.000	0.01534	109.5	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.13514	1.10994	1.000	0.01534	112.0	%	75-125	03/15/99 1739
							2.2	R	20	
CCB			0.01182						0.10	03/15/99 1814
CCV		MS990107	4.92190		5.000		98.4	%	90-110	03/15/99 1819
CCB			0.00287						0.10	03/15/99 1858
CCV		MS990107	4.98147		5.000		99.6	%	90-110	03/15/99 1902
MB			0.02977						0.10	03/15/99 1937
LCS		3010030999	2.09361		2.000		104.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86649		2.000	0.01552	92.5	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.11166	1.86649	2.000	0.01552	104.8	%	75-125	03/15/99 1955
							12.3	R	20	
CCB			0.04816						0.10	03/15/99 2026
CCV		MS990107	5.13870		5.000		102.8	%	90-110	03/15/99 2039

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00642						0.05	03/15/99 1324
ICV		MS990112	9.97749		10.0		99.8	%	90-110	03/15/99 1333
ISB		MS990094	0.23572		0.25		94.3	%	80-120	03/15/99 1349
CCB			-0.00642						0.05	03/15/99 1416
CCV		MS990107	4.88481		5.000		97.7	%	90-110	03/15/99 1429
CCV		MS990107	4.94053		5.000		98.8	%	90-110	03/15/99 1533
CCB			-0.00750						0.05	03/15/99 1559
CCB			-0.00750						0.05	03/15/99 1658
CCV		MS990107	5.01982		5.000		100.4	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.06718		1.000	-0.00428	107.1	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.07896	1.06718	1.000	-0.00428	108.3	%	75-125	03/15/99 1739
							1.1	R	20	
CCB			-0.00750						0.05	03/15/99 1814
CCV		MS990107	4.97696		5.000		99.5	%	90-110	03/15/99 1819
CCB			-0.00642						0.05	03/15/99 1858
CCV		MS990107	5.01875		5.000		100.4	%	90-110	03/15/99 1902
MB			-0.00642						0.05	03/15/99 1937
LCS		3010030999	1.98114		2.000		99.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	2.12150		2.000	0.37608	87.3	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.36151	2.12150	2.000	0.37608	99.3	%	75-125	03/15/99 1955
							10.7	R	20	
CCB			-0.00428						0.05	03/15/99 2026
CCV		MS990107	5.15482		5.000		103.1	%	90-110	03/15/99 2039
CCB			0.01068						0.05	03/15/99 2108
CCV		MS990107	5.04000		5.000		100.8	%	90-110	03/15/99 2115
MB			0.01091						0.05	03/15/99 2118
LCS		301503099	1.97208		2.00		98.6	%	80-120	03/15/99 2120
MS	990482-1	3015030999	2.22954		2.000	0.27144	97.9	%	75-125	03/15/99 2122

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MSD	990482-1	3015030999	2.16286	2.22954	2.000	0.27144	94.6	%	75-125	03/15/99 2124
							3.0	R	20	
CCB			0.02322						0.05	03/15/99 2129
CCV		MS990107	5.05793		5.000		101.2	%	90-110	03/15/99 2134

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00215						0.05	03/15/99 1324
ICV		MS990112	9.83657		10.0		98.4	%	90-110	03/15/99 1333
ISB		MS990094	0.23483		0.25		93.9	%	80-120	03/15/99 1349
CCB			-0.00372						0.05	03/15/99 1416
CCV		MS990108	5.08831		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.11872		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00600						0.05	03/15/99 1559
CCB			-0.00439						0.05	03/15/99 1658
CCV		MS990108	5.07135		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08548		1.000	-0.00351	108.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10097	1.08548	1.000	-0.00351	110.4	%	75-125	03/15/99 1739
							1.4	R	20	
CCB			-0.00410						0.05	03/15/99 1814
CCV		MS990108	5.11774		5.000		102.4	%	90-110	03/15/99 1832
CCB			-0.00292						0.05	03/15/99 1858
CCV		MS990108	5.11315		5.000		102.3	%	90-110	03/15/99 1912
MB			-0.00418						0.05	03/15/99 1937
LCS		3010030999	1.92115		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.85837		2.000	0.02183	91.8	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.89063	1.85837	2.000	0.02183	93.4	%	75-125	03/15/99 1955
							1.7	R	20	
CCB			-0.00610						0.05	03/15/99 2026
CCV		MS990108	5.27246		5.000		105.4	%	90-110	03/15/99 2044
MB			0.00252						0.05	03/15/99 2049
LCS		301503099	1.83784		2.00		91.9	%	80-120	03/15/99 2054
MS	990482-1	3015030999	1.83631		2.000	0.01572	91.0	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.84468	1.83631	2.000	0.01572	91.4	%	75-125	03/15/99 2101
							0.5	R	20	
CCB			-0.00238						0.05	03/15/99 2108
CCV		MS990108	4.90665		5.000		98.1	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.01622						0.05	03/15/99 1324
ICV		MS990112	9.73699		10.0		97.4	%	90-110	03/15/99 1333
ISA		MS990095	94.41921		100.0		94.4	%	80-120	03/15/99 1344

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ISB		MS990094	92.61569		100.0		92.6	%	80-120	03/15/99 1349
CCB			0.00718						0.05	03/15/99 1416
CCV		MS990108	5.08773		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.12198		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.01437						0.05	03/15/99 1559
CCB			-0.00267						0.05	03/15/99 1658
CCV		MS990108	5.07030		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.13224		1.000	0.05310	107.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.14611	1.13224	1.000	0.05310	109.3	%	75-125	03/15/99 1739
							1.2	R	20	
CCB			-0.01486						0.05	03/15/99 1814
CCV		MS990108	5.13707		5.000		102.7	%	90-110	03/15/99 1832
CCB			-0.01655						0.05	03/15/99 1858
CCV		MS990108	5.13406		5.000		102.7	%	90-110	03/15/99 1912
MB			0.06096						0.05	03/15/99 1937
LCS		3010030999	1.92146		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.87288		2.000	0.07158	90.1	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.91956	1.87288	2.000	0.07158	92.4	%	75-125	03/15/99 1955
							2.5	R	20	
CCB			0.00442						0.05	03/15/99 2026
CCV		MS990108	5.25509		5.000		105.1	%	90-110	03/15/99 2044
MB			-0.00153						0.05	03/15/99 2049
MS	990482-1	3015030999	6.16588		2.000	7.06424	-44.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	6.96977	6.16588	2.000	7.06424	-4.7	%	75-125	03/15/99 2101
							12.2	R	20	
CCB			0.31491						0.05	03/15/99 2108
CCV		MS990108	4.92815		5.000		98.6	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00329						0.05	03/15/99 1324
ICV		MS990112	9.81722		10.0		98.2	%	90-110	03/15/99 1333
ISB		MS990094	0.23854		0.25		95.4	%	80-120	03/15/99 1349
CCB			-0.00329						0.05	03/15/99 1416
CCV		MS990108	5.08862		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.11434		5.000		102.3	%	90-110	03/15/99 1548
CCB			-0.00290						0.05	03/15/99 1559
CCB			-0.00256						0.05	03/15/99 1658
CCV		MS990108	5.07150		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08456		1.000	-0.00097	108.6	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.09897	1.08456	1.000	-0.00097	110.0	%	75-125	03/15/99 1739
							1.3	R	20	
CCB			-0.00312						0.05	03/15/99 1814
CCV		MS990108	5.11117		5.000		102.2	%	90-110	03/15/99 1832
CCB			-0.00246						0.05	03/15/99 1858
CCV		MS990108	5.11126		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00219						0.05	03/15/99 1937
LCS		3010030999	1.91199		2.000		95.6	%	80-120	03/15/99 1941

* %-% REC R-RPD A-ABS Diff. D-% Diff.

QUALITY CONTROL RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MS	990671-1	3010030999	2.02940		2.000	0.21127	90.9	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.06858	2.02940	2.000	0.21127	92.9	%	75-125	03/15/99 1955
							1.9	R	20	
CCB			-0.00284						0.05	03/15/99 2026
CCV		MS990108	5.25330		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00507						0.05	03/15/99 2049
LCS		301503099	1.81550		2.00		90.8	%	80-120	03/15/99 2054
MS	990482-1	3015030999	1.93977		2.000	0.16204	88.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.95457	1.93977	2.000	0.16204	89.6	%	75-125	03/15/99 2101
							0.8	R	20	
CCB			0.00460						0.05	03/15/99 2108
CCV		MS990108	4.85252		5.000		97.1	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00195						0.05	03/15/99 1324
ICV		MS990112	9.75665		10.0		97.6	%	90-110	03/15/99 1333
ISB		MS990094	0.22562		0.25		90.2	%	80-120	03/15/99 1349
CCB			-0.00130						0.05	03/15/99 1416
CCV		MS990108	5.08355		5.000		101.7	%	90-110	03/15/99 1446
CCV		MS990108	5.11973		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00194						0.05	03/15/99 1559
CCB			-0.00178						0.05	03/15/99 1658
CCV		MS990108	5.07307		5.000		101.5	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08019		1.000	-0.00016	108.0	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10130	1.08019	1.000	-0.00016	110.1	%	75-125	03/15/99 1739
							1.9	R	20	
CCB			-0.00147						0.05	03/15/99 1814
CCV		MS990108	5.10386		5.000		102.1	%	90-110	03/15/99 1832
CCB			-0.00147						0.05	03/15/99 1858
CCV		MS990108	5.10912		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00170						0.05	03/15/99 1937
LCS		3010030999	1.91418		2.000		95.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86398		2.000	0.01589	92.4	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.90246	1.86398	2.000	0.01589	94.3	%	75-125	03/15/99 1955
							2.0	R	20	
CCB			-0.00163						0.05	03/15/99 2026
CCV		MS990108	5.25274		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00515						0.05	03/15/99 2049
MS	990482-1	3015030999	1.81264		2.000	0.05038	88.1	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.82319	1.81264	2.000	0.05038	88.6	%	75-125	03/15/99 2101
							0.6	R	20	
CCB			0.00203						0.05	03/15/99 2108
CCV		MS990108	4.73552		5.000		94.7	%	90-110	03/15/99 2111

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990480 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 7740 Batch.....: 3339 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/15/99 1600
ICV		MS990140	0.0249		0.0250		99.6	%	90-110	03/15/99 1643
MS	990483-1	MS980135	0.02115			<0.01	84.6	%	75-125	03/15/99 2019
CCB			<0.01						0.005	03/15/99 2102
CCV		MS990140	0.02246		0.0250		89.8	%	90-110	03/15/99 2145
MSD	990483-1	MS990140	0.02032	0.02115	0.0250	<0.01	81.3	%	75-125	03/15/99 2229
							4.0	R	20	
CCB	31599 -2		<0.01						0.005	03/15/99 2312
CCV	31599 -2	MS990140	0.02155		0.0250		86.2	%	90-110	03/15/99 2355

Test Method.....: SW-846 6010B Batch.....: 3955 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.0183							04/15/99 0950
ICV		MS990112	9.795		10.0		98.0	%	90-110	04/15/99 0959
ISA		MS990095	97.06		100.0		97.1	%	80-120	04/15/99 1013
ISB		MS990094	96.86		100.0		96.9	%	80-120	04/15/99 1017
ISB		MS990094	95.76		100.0		95.8	%	80-120	04/15/99 1025
CCV		MS990107	4.779		5.000		95.6	%	90-110	04/15/99 1036
MB			0.0364							04/15/99 1044
LCS		3015030999	2.019		2.000		101.0	%	80-120	04/15/99 1050
MS	990482-1	3015030999	11.70		2.000	12.30	-30.0	%	75-125	04/15/99 1057
MSD	990482-1	3015030999	10.19	11.70	2.000	12.30	-105.5	%	75-125	04/15/99 1101
							13.8	R	20	
PDS	990482-1	PDS041599	15.79		4.000	12.30	87.2	%	75-125	04/15/99 1107
PSD	990482-1	PDS041599	15.99	15.79	4.000	12.30	92.2	%	75-125	04/15/99 1111
							1.3	R	20	
CCB			0.0046							04/15/99 1131
CCV		MS990107	4.601		5.000			%		04/15/99 1135

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

ND = Analyte Not Detected above the quantitation limit
Numerical values expressed in the "LIMITS/*DILUTION" column are Practical Quantitation Limits (PQL). A final result of "ND" should be considered as "less than the PQL" (<PQL) unless otherwise indicated.

The detection limits and units reported in the Quality Control (QC) Report may not coincide with the values reported in the Laboratory Test Results Report because the data presented in the QC Report may not account for sample preparation and dilutions performed.

The date and time analyzed on the QC Report reflects either the actual date and/or time of sample analysis or the date and/or time of analysis completion for a sample batch.

Results for soil samples are reported on a wet weight basis (unless otherwise indicated).

Cited Test Methods are obtained from the following documents:

EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, 1986 and Updates I, II, IIA, and IIB
Standard Methods for the Examination of Water and Wastewater, 14th Ed., 1976, 15th Ed., 1981, and 18th Ed., 1992
United Oil Processors (UOP) Manual of Laboratory Test Methods
Hach Handbook of Water Analysis, 1979

SUBCONTRACTED LABORATORY LOCATIONS

For analysis performed by a subcontract laboratory, an "*" and the designated laboratory code is indicated in the "TECHN" column of the Laboratory Test Results Report.

Core Laboratories:

Anaheim	* A N	Houston Environmental	* H E
Aurora	* A U	Houston Petroleum	* H P
Carrollton	* C R	Indianapolis	* I N
Casper	* C A	Long Beach	* L B
Corpus Christi	* C C	New Orleans	* N O
Edison	* E D	Valparaiso	* V P
Hollister	* H R	Other	* X X

QUALITY ASSURANCE REPORT CODES

NC = Not Calculable due to values lower than the reporting limit

BLANKS	REFERENCE STANDARDS	SPIKES	DUPLICATES
MB = Method Blank	CS = Calibration Standard	MS = Matrix Spike	MSD = Matrix Spike Dupl.
RB = Reagent Blank	RS = Reference Standard	PDS = Post-Digest Spike	SD = Sample Duplicate
IB = Instrument Blank	ICV = Initial Calib. Verification	BS = Blank Spike	MD = Method Duplicate
ICB = Initial Calib. Blank	CCV = Continuing Calib. Verification	SS = Surrogate Spike	
CCB = Cont. Calib. Blank	LCS = Laboratory Control Standard		

For organic parameters, the blank value reported in the QC section of the report is the lowest reportable limit for the method.

3645 Beglis Pkwy
Sulphur, LA 70663
(318) 583-4926

CORE LAB

CORE LABORATORIES, INC.

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION

COMPANY: ENSR
SEND REPORT TO: Russell Turner
ADDRESS: 3000 Richmond Ave. Suite 400
Houston, TX 77098
PHONE: (713) 520-9900
FAX: (713) 520-6802

PROJECT INFORMATION

PROJECT NAME/NUMBER: Bowen-Hobbs 007013-411

BILLING INFORMATION

BILL TO: ENSR
ADDRESS: 3000 Richmond Ave, Suite 400
Houston, TX 77098
PHONE:
FAX: PO NO.:

LAB JOB NO. 990480

SAMPLE #	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS REQUIRED / METHOD: VOCs (11cl)	SVOCs	Metals (HNO3)	Cl, Br	F, Alkalinity	Nitrate	TDS, Sulfate	Selenium (Field Filtered)	REMARKS / PRECAUTIONS
	MW 1A	2/11/99	3:00	H_2O		HCl	2	✓								Hold
	MW-1B	2/11/99	3:00			—	2		✓							Run SVCCs
	MW-1C	2/11/99	3:00			HNO_3	1			✓						Hold
	MW-1D	2/11/99	3:00			-	1				✓					Hold
	MW-1E	2/11/99	3:00			—	1					✓				Hold
	MW-1F	2/11/99	3:00			—	1						✓			Hold
	MW-1G	2/11/99	3:00			—	1							✓		Hold
	MW-1H	2/11/99	3:00			—	1								✓	Hold

SAMPLER: Christi Kiker
SHIPMENT METHOD: Fed Ex
AIRBILL NO.: 8023817108 31

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

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Christi Kiker	2/12/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Christi Kiker / ENSR	TIME 10:00AM	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: [illegible]	2/13/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: [illegible]	TIME 9:30	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA
1250 E. Gene Autry Way
Anaheim, CA 92805
(714) 937-1094 Fax (714) 937-1170

☐ Aurora, CO
10703 E. Bethany Drive
Aurora, CO 80014
(303) 751-1780 Fax (303) 751-1784

☐ Carson, CA
21730 S. Wilmington Ave. - Suite 201
Carson, CA 90810-1640
(310) 513-2031 Fax (310) 513-2035

☐ Casper, WY
420 W. First Street
Casper, WY 82601
(307) 235-5741 Fax (307) 266-1676

☐ Corpus Christi, TX
1733 N. Padre Island Drive
Corpus Christi, TX 78408
(512) 289-2673 Fax (512) 289-2471

☐ Edison, NJ
284 Raritan Center Parkway
Edison, NJ 08837
(732) 225-6700 Fax (732) 225-6777

☐ Houston, TX (Env)
6310 Rothway Drive
Houston, TX 77040
(713) 690-4444 Fax (713) 690-5646

☐ Houston, TX (Pet)
8210 Mosley Road
Houston, TX 77075
(713) 943-9776 Fax (713) 943-3846

☐ Indianapolis, IN
7726 Moller Road
Indianapolis, IN 46268
(317) 875-5894 Fax (317) 872-6189

☑ Lake Charles, LA
3645 Begilis Parkway
Sulphur, LA 70663
(318) 583-4926 Fax (318) 583-4929

☐ Valparaiso, IN
2400 Cumberland Drive
Valparaiso, IN 46383

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990481

The revised report reflects the following changes:

SAMPLE ID:	PARAMETER	CHANGES MADE:
990481-0001	TOTAL SELENIUM: EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L
990481-0001	DISSOLVED SELENIUM EPA METHOD 7740	Detection limit changed from 0.05 to 0.01mg/L

Reviewed by:

Tina Davis, Laboratory Manager — 04-19-99 Date

Mary Arnold, QA/QC Coordinator — 04-19-99 Date

CORELAB

REVISED

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990481

ANALYSIS: METALS: EPA METHOD: SW-846 6010B

The revised report reflects the addition of the following metals analysis for sample 990481-0001(Client ID:MW-2 (A-H), as requested by the client.

aluminum(dissolved)
iron(dissolved)
vanadium(dissolved)

Reviewed by:

Tina Davis
Tina Davis, Laboratory Manager — Date: 04/20/99

Mary Arnold
Mary Arnold, QA/QC Coordinator — Date: 04/16/99

REVISED

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990481

ANALYSIS: METALS: EPA METHOD: SW-846 6010B

The revised report reflects the addition of the following metals analysis for sample 990481-0001(Client ID:MW-2 (A-H), as requested by the client.

molybdenum(total and dissolved),
silver(total and dissolved)
barium(dissolved)
chromium(dissolved)
manganese(dissolved)

Reviewed by:

Tina Davis, Laboratory Manager — Date: 4/6/99

Mary Arnold, QA/QC Coordinator — Date: 4/6/99

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990481

ANALYSIS: ALKALINITY: EPA METHOD 310.1

In the analysis of sample 990481-0001 (Client ID: MW-2 (A-H)) the %RSD(20.7) for the matrix duplicate analysis was above the method specified criteria(<20%). A method blank was also analyzed and within the method specified criteria. The sample was reanalyzed, outside of the holding time, with an acceptable %RSD(6.6).

Reviewed by:

Tina Davis, Laboratory Manager — Date: 03/29/99

Mary Arnold, QA/QC Coordinator — Date: 3/29/99

CORELAB

CORE LABORATORIES

SAMPLE INFORMATION
Date: 04/19/99

Job Number.: 990481
Customer ..: ENSR
Attn.....: RUSSELL TURNER

Project Number.....: 99999910
Customer Project ID....: BOWEN-HOBBS007013411
Project Description....: Walk in Project

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
990481-1	MW-2 (A-H)	Water	02/11/99	17:00	02/13/99	12:35
990481-2	TRIP BLANK	Water			02/13/99	12:35

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-H08BS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-2 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 17:00
Sample Matrix.....: Water

Laboratory Sample ID: 990481-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 310.1	Alkalinity, Total as CaCO3	1520	1	mg/L CaCO3	02/15/99	bt
EPA 300.0	Bromide (Br)	1.1	0.1	mg/L	02/22/99	*HE
SM 4500-CL B	Chloride	280	20	mg/L	02/17/99	cmg
SM 4500-F C	Fluoride (F)	1.5	0.1	mg/L	02/17/99	cmg
EPA 353.3	Nitrogen, Nitrate as N (NO3-N)	<0.05	0.05	mg/L	03/04/99	bt
EPA 160.1	Solids, Total Dissolved (TDS)	1070	50	mg/L	02/15/99	sps
EPA 375.4	Sulfate (SO4)	150	50	mg/L	02/23/99	cmg
SW-846 7470	Mercury (Hg)	<0.002	0.002	mg/L	02/17/99	jlw
SW-846 7740	Selenium (Se)	<0.01	0.01	mg/L	03/11/99	bt
SW-846 7740	Selenium (Se), Diss.	<0.01	0.01	mg/L	03/15/99	bt
SW-846 3010	Acid Digestion, Total Metals	Complete			02/19/99	rl
SW-846 3015	Acid Digestion, Total Metals (GFAA)	Complete		mg/L	03/09/99	rl
	Filter sample prior to analysis	Complete			02/15/99	rl
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al)	91.8	0.10	mg/L	03/15/99	bt
	Antimony (Sb)	<0.05	0.05	mg/L	02/23/99	bt
	Arsenic (As)	<0.05	0.05	mg/L	02/23/99	bt
	Barium (Ba)	1.56	0.05	mg/L	02/23/99	bt
	Beryllium (Be)	<0.05	0.05	mg/L	02/23/99	bt
	Boron (B)	0.39	0.20	mg/L	03/02/99	bt
	Cadmium (Cd)	<0.01	0.01	mg/L	02/23/99	bt
	Calcium (Ca)	983	5	mg/L	03/02/99	bt
	Chromium (Cr)	0.11	0.05	mg/L	02/23/99	bt
	Cobalt (Co)	<0.05	0.05	mg/L	02/23/99	bt
	Copper (Cu)	<0.05	0.05	mg/L	02/23/99	bt
	Iron (Fe)	54.5	0.05	mg/L	03/02/99	bt
	Lead (Pb)	<0.05	0.05	mg/L	02/23/99	bt
	Magnesium (Mg)	102	0.1	mg/L	03/02/99	bt
	Manganese (Mn)	0.83	0.05	mg/L	02/23/99	bt
	Molybdenum (Mo)	1.17	0.05	mg/L	03/02/99	bt
	Nickel (Ni)	0.07	0.05	mg/L	02/23/99	bt
	Potassium (K)	22.8	5.0	mg/L	03/02/99	bt
	Sodium (Na)	107	1	mg/L	03/15/99	bt
	Silver (Ag)	<0.05	0.05	mg/L	03/02/99	bt
	Titanium (Ti)	1.29	0.05	mg/L	02/23/99	bt

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-2 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 17:00
Sample Matrix.....: Water

Laboratory Sample ID: 990481-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Vanadium (V)	0.29	0.05	mg/L	02/23/99	bt
	Zinc (Zn)	0.11	0.05	mg/L	02/23/99	bt
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Barium (Ba), Diss.	0.08	0.05	mg/L	04/05/99	bt
	Chromium (Cr), Diss.	<0.05	0.05	mg/L	04/05/99	bt
	Iron (Fe), Diss.	0.13	0.05	mg/L	03/15/99	bt
	Manganese (Mn), Diss.	<0.05	0.05	mg/L	04/05/99	bt
	Molybdenum (Mo), Diss.	0.16	0.05	mg/L	04/05/99	bt
	Silver (Ag), Diss.	<0.05	0.05	mg/L	04/05/99	bt
	Vanadium (V), Diss.	<0.05	0.05	mg/L	03/15/99	bt
SW-846 3510B	Extraction (Sep. Funnel) - Semivolatiles					
	Separatory Funnel Liq/Liq Extraction	complete			02/18/99	*HE
SW-846 8270C	Semivolatile Organics					
	Acenaphthene	ND	10.0	ug/L	02/19/99	*HE
	Acenaphthylene	ND	10.0	ug/L	02/19/99	*HE
	Anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(b)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(k)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(ghi)perylene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Butyl benzyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethoxy)methane	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroisopropyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-ethylhexyl)phthalate	ND	10.0	ug/L	02/19/99	*HE
	4-Bromophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE
	Carbazole	ND	10.0	ug/L	02/19/99	*HE
	4-Chloroaniline	ND	10.0	ug/L	02/19/99	*HE
	2-Chloronaphthalene	ND	10.0	ug/L	02/19/99	*HE
	4-Chlorophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE
	Chrysene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzo(a,h)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzofuran	ND	10.0	ug/L	02/19/99	*HE
	1,2-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,3-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,4-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	3,3-Dichlorobenzidine	ND	20.0	ug/L	02/19/99	*HE
	Diethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Dimethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-butyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-octyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	2,6-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	Fluoranthene	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-2 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 17:00
Sample Matrix.....: Water

Laboratory Sample ID: 990481-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Fluorene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobutadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorocyclopentadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachloroethane	ND	10.0	ug/L	02/19/99	*HE
	Indeno(1,2,3-cd)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Isophorone	ND	10.0	ug/L	02/19/99	*HE
	2-Methylnaphthalene	ND	10.0	ug/L	02/19/99	*HE
	Naphthalene	ND	10.0	ug/L	02/19/99	*HE
	o-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	m-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	p-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	Nitrobenzene	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodi-n-propylamine	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodiphenylamine	ND	10.0	ug/L	02/19/99	*HE
	Phenanthrene	ND	10.0	ug/L	02/19/99	*HE
	Pyrene	ND	10.0	ug/L	02/19/99	*HE
	1,2,4-Trichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	4-Chloro-3-methylphenol	ND	10.0	ug/L	02/19/99	*HE
	2-Chlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dichlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dimethylphenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methyl-4,6-dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methylphenol (o-cresol)	ND	10.0	ug/L	02/19/99	*HE
	3 & 4 Methylphenol (m&p cresol)	ND	10.0	ug/L	02/19/99	*HE
	2-Nitrophenol	ND	10.0	ug/L	02/19/99	*HE
	4-Nitrophenol	ND	50.0	ug/L	02/19/99	*HE
	Pentachlorophenol	ND	50.0	ug/L	02/19/99	*HE
	Phenol	ND	10.0	ug/L	02/19/99	*HE
	2,4,5-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4,6-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE
SW-846 8260B	Volatile Organics					
	Acetone	ND	50	ug/L	02/24/99	mk
	Benzene	ND	5	ug/L	02/24/99	mk
	Bromobenzene	ND	5	ug/L	02/24/99	mk
	Bromochloromethane	ND	5	ug/L	02/24/99	mk
	Bromodichloromethane	ND	5	ug/L	02/24/99	mk
	Bromoform	ND	5	ug/L	02/24/99	mk
	Bromomethane	ND	10	ug/L	02/24/99	mk
	2-Butanone (MEK)	ND	50	ug/L	02/24/99	mk
	n-Butylbenzene	ND	5	ug/L	02/24/99	mk
	sec-Butylbenzene	ND	5	ug/L	02/24/99	mk
	tert-Butylbenzene	ND	5	ug/L	02/24/99	mk
	Carbon disulfide	ND	5	ug/L	02/24/99	mk
	Carbon tetrachloride	ND	5	ug/L	02/24/99	mk
	Chlorobenzene	ND	5	ug/L	02/24/99	mk
	Chloroethane	ND	10	ug/L	02/24/99	mk

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-2 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 17:00
Sample Matrix.....: Water

Laboratory Sample ID: 990481-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	2-Chloroethylvinyl ether	ND	5	ug/L	02/24/99	mk
	Chloroform	ND	5	ug/L	02/24/99	mk
	Chloromethane	ND	10	ug/L	02/24/99	mk
	2-Chlorotoluene	ND	5	ug/L	02/24/99	mk
	4-Chlorotoluene	ND	5	ug/L	02/24/99	mk
	Dibromochloromethane	ND	5	ug/L	02/24/99	mk
	1,2-Dibromo-3-chloropropane	ND	5	ug/L	02/24/99	mk
	1,2-Dibromoethane (EDB)	ND	5	ug/L	02/24/99	mk
	Dibromomethane	ND	5	ug/L	02/24/99	mk
	1,2-Dichlorobenzene	ND	5	ug/L	02/24/99	mk
	1,3-Dichlorobenzene	ND	5	ug/L	02/24/99	mk
	1,4-Dichlorobenzene	ND	5	ug/L	02/24/99	mk
	Dichlorodifluoromethane	ND	10	ug/L	02/24/99	mk
	1,1-Dichloroethane	ND	5	ug/L	02/24/99	mk
	1,2-Dichloroethane	ND	5	ug/L	02/24/99	mk
	1,1-Dichloroethene	ND	5	ug/L	02/24/99	mk
	cis-1,2-Dichloroethene	ND	5	ug/L	02/24/99	mk
	trans-1,2-Dichloroethene	ND	5	ug/L	02/24/99	mk
	1,2-Dichloropropane	ND	5	ug/L	02/24/99	mk
	1,3-Dichloropropane	ND	5	ug/L	02/24/99	mk
	2,2-Dichloropropane	ND	5	ug/L	02/24/99	mk
	1,1-Dichloropropene	ND	5	ug/L	02/24/99	mk
	cis-1,3-Dichloropropene	ND	5	ug/L	02/24/99	mk
	trans-1,3-Dichloropropene	ND	5	ug/L	02/24/99	mk
	Ethylbenzene	ND	5	ug/L	02/24/99	mk
	Hexachlorobutadiene	ND	5	ug/L	02/24/99	mk
	2-Hexanone	ND	50	ug/L	02/24/99	mk
	Iodomethane	ND	5	ug/L	02/24/99	mk
	Isopropylbenzene	ND	5	ug/L	02/24/99	mk
	p-Isopropyltoluene	ND	5	ug/L	02/24/99	mk
	Methylene chloride	ND	10	ug/L	02/24/99	mk
	4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	02/24/99	mk
	Naphthalene	ND	10	ug/L	02/24/99	mk
	n-Propylbenzene	ND	5	ug/L	02/24/99	mk
	Styrene	ND	5	ug/L	02/24/99	mk
	1,1,1,2-Tetrachloroethane	ND	5	ug/L	02/24/99	mk
	1,1,2,2-Tetrachloroethane	ND	5	ug/L	02/24/99	mk
	Tetrachloroethene	ND	5	ug/L	02/24/99	mk
	Toluene	ND	5	ug/L	02/24/99	mk
	1,2,3-Trichlorobenzene	ND	5	ug/L	02/24/99	mk
	1,2,4-Trichlorobenzene	ND	5	ug/L	02/24/99	mk
	1,1,1-Trichloroethane	ND	5	ug/L	02/24/99	mk
	1,1,2-Trichloroethane	ND	5	ug/L	02/24/99	mk
	Trichloroethene	ND	5.0	ug/L	02/24/99	mk
	Trichlorofluoromethane	ND	5	ug/L	02/24/99	mk
	1,2,4-Trimethylbenzene	ND	5	ug/L	02/24/99	mk
	1,3,5-Trimethylbenzene	ND	5	ug/L	02/24/99	mk
	1,2,3-Trichloropropane	ND	5	ug/L	02/24/99	mk
	Vinyl acetate	ND	5	ug/L	02/24/99	mk

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-2 (A-H)
Date Sampled.....: 02/11/99
Time Sampled.....: 17:00
Sample Matrix.....: Water

Laboratory Sample ID: 990481-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Vinyl chloride	ND	10	ug/L	02/24/99	mk
	Xylenes (total)	ND	15	ug/L	02/24/99	mk

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: EPA 310.1 Batch.....: 2815 Analyst...: bt
Method Description.: Alkalinity Units.....: mg/L CaCO3
Parameter.....: Alkalinity, Total as CaCO3

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MD	990481-1		2342			1519	42.6	R	20	02/15/99 1140
MD	990481-1		1700			1600	6.6	A		03/25/99 1645

Test Method.....: SM 4500-F C Batch.....: 2883 Analyst...: cmg
Method Description.: Fluoride (Ion-Selective Electrode) Units.....: mg/L
Parameter.....: Fluoride (F)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<0.1						0.1	02/17/99 1430
LCS		WC983175	1.6		2.000000		80.0	%	90.0-110.0	02/17/99 1430
LCS	21799 -1	WC983175	1.8		2.000000		90.0	%	90.0-110.0	02/17/99 1430
MD	990481-1		1.5			1.5	0.0	R	20	02/17/99 1430
MS	990481-1	WC983175	3.5		2.000000	1.5	100.0	%	80-120	02/17/99 1430

Test Method.....: SW-846 7470 Batch.....: 2886 Analyst...: jlw
Method Description.: Mercury (CVAA) Units.....: mg/L
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		H 048-A	<0.002						0.002	02/17/99 1530
ICV		HG993427	0.0053		0.005		106.0	%	90-110	02/17/99 1534
MB		021799	<0.002						0.002	02/17/99 1538
LCS		HG993428	0.0051		0.005		102.0	%	80-120	02/17/99 1541
MS	990481-1	HG993429	0.0053		0.005	0	106.0	%	80-120	02/17/99 1549
MSD	990481-1	HG993430	0.0057	0.0053	0.005	0	114.0	%	80-120	02/17/99 1553
							7.3	R	20	
CCB		H 048-B	<0.002						0.002	02/17/99 1615
CCV		HG993431	0.0051		0.005		102.0	%	90-110	02/17/99 1619
EB		MBT 1042	<0.002						0.002	02/17/99 1630
EB		MBT 1046	<0.002						0.002	02/17/99 1634
EB		MBT 1047	<0.002						0.002	02/17/99 1638
CCB		H 048-C	<0.002						0.002	02/17/99 1641
CCV		HG993432	0.0049		0.005		98.0	%	90-110	02/17/99 1645

Test Method.....: EPA 160.1 Batch.....: 2897 Analyst...: sps
Method Description.: Solids, Total Dissolved (TDS) Units.....: mg/L
Parameter.....: Solids, Total Dissolved (TDS)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<50						50	02/15/99 1350
MD	990480-1		1162			1176	1.2	R	20	02/15/99 1350

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SM 4500-CL B Batch.....: 2945 Analyst...: cmg
Method Description.: Chloride (argentometric) Units.....: mg/L
Parameter.....: Chloride

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<2						2	02/17/99 1300
LCS		WS990703	46		50.000000		92.0	%	90.0-110.0	02/17/99 1300
MD	990481-1		28.8			28.4	1.4	R	20	02/17/99 1300
MS	990841-1	WS990703	55.3		29.999999	28.4	89.7	%	80-120	02/17/99 1300
MD	990507-1		31.1			31.6	1.6	R	20	02/17/99 1300

Test Method.....: EPA 375.4 Batch.....: 2985 Analyst...: cmg
Method Description.: Sulfate Units.....: mg/L
Parameter.....: Sulfate (SO4)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<5						10	02/23/99 1030
LCS		WS990708	9		10.000000		90.0	%	80-120	02/23/99 1030
LCS	22399 -1	WS990708	9		10.000000		90.0	%	80-120	02/23/99 1030
MD	990539-1		39.2			39.8	0.6	A	10.0	02/23/99 1030
MS	984076-1	WS990708	39.4		20.000000	39.4	97.5	%	80-120	02/23/99 1030

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.01978						0.05	02/23/99 0958
ICV		MS980436	9.82705		10.0		98.3	%	90-110	02/23/99 1016
CCB			-0.03925						0.05	02/23/99 1033
CCV		MS990040	4.74925		5.000		95.0	%	90-110	02/23/99 1045
MB			-0.01867						0.05	02/23/99 1104
LCS		3010A0217	1.97527		2.00		98.8	%	80-120	02/23/99 1119
MD	990368-1		-0.40582			-0.45896	0.05314	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	1.60193		2.00	-0.45896	103.0	%	75-125	02/23/99 1142
CCB			-0.09732						0.05	02/23/99 1423
CCV		MS990040	5.13038		5.000		102.6	%	90-110	02/23/99 1443

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.03661						0.05	02/23/99 0958
ICV		MS990099	9.71248		10.0		97.1	%	90-110	02/23/99 1007
ISB		MS990094	0.40031		0.5000		80.1	%	80-120	02/23/99 1026
CCB			-0.01988						0.05	02/23/99 1033
CCV		MS990040	4.68861		5.000		93.8	%	90-110	02/23/99 1045
MB			-0.03783						0.05	02/23/99 1104
LCS		3010A0217	2.01458		2.00		100.7	%	80-120	02/23/99 1119
MD	990368-1		0.08422			0.09298	0.00876	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	2.04770		2.00	0.09298	97.7	%	75-125	02/23/99 1142

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCB			-0.00963						0.05	02/23/99 1423
CCV		MS990040	5.19855		5.000		104.0	%	90-110	02/23/99 1443

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00000						0.05	02/23/99 0958
ICV		MS990099	9.98110		10.0		99.8	%	90-110	02/23/99 1007
ISB		MS990094	0.25035		0.25		100.1	%	80-120	02/23/99 1026
CCB			0.00236						0.05	02/23/99 1033
CCV		MS990097	4.91025		5.000		98.2	%	90-110	02/23/99 1050
MB			0.00472						0.05	02/23/99 1104
LCS		3010A0217	1.96976		2.000		98.5	%	80-120	02/23/99 1119
MD	990368-1		0.23618			0.25035	0.01417	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	2.24137		2.000	0.25035	99.6	%	75-125	02/23/99 1142
CCB			0.00708						0.05	02/23/99 1423

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Beryllium (Be)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00022						0.05	02/23/99 0958
ICV		MS990059	4.99364		5.000		99.9	%	90-110	02/23/99 1011
ISB		MS990094	0.24465		0.25		97.9	%	80-120	02/23/99 1026
CCB			0.00026						0.05	02/23/99 1033
CCV		MS990040	5.06690		5.000		101.3	%	90-110	02/23/99 1045
MB			0.00003						0.05	02/23/99 1104
LCS		3010A0217	2.04514		2.00		102.3	%	80-120	02/23/99 1119
MD	990368-1		0.00051			0.00147	0.00096	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	2.04435		2.00	0.00147	102.1	%	75-125	02/23/99 1142
CCB			-0.00050						0.05	02/23/99 1423
CCV		MS990040	5.09556		5.000		101.9	%	90-110	02/23/99 1443

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00624						0.05	02/23/99 0958
ICV		MS990099	9.92463		10.0		99.2	%	90-110	02/23/99 1007
ISB		MS990094	0.48622		0.500		97.2	%	80-120	02/23/99 1026
CCB			-0.00551						0.05	02/23/99 1033
CCV		MS990040	4.97273		5.000		99.5	%	90-110	02/23/99 1045
MB			-0.00763						0.05	02/23/99 1104

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
LCS		3010A0217	1.98221		2.00		99.1	%	80-120	02/23/99 1119
MD	990368-1		0.00019			-0.00506	0.00525	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	2.01611		2.00	-0.00506	101.1	%	75-125	02/23/99 1142
CCB			-0.00315						0.05	02/23/99 1423
CCV		MS990040	5.11909		5.000		102.4	%	90-110	02/23/99 1443

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00000						0.05	02/23/99 0958
ICV		MS990099	9.97126		10.0		99.7	%	90-110	02/23/99 1007
ISB		MS990094	0.23666		0.25		94.7	%	80-120	02/23/99 1026
CCB			-0.00339						0.05	02/23/99 1033
CCV		MS990040	4.97916		5.000		99.6	%	90-110	02/23/99 1045
MB			-0.00113						0.05	02/23/99 1104
LCS		3010A0217	2.00183		2.00		100.1	%	80-120	02/23/99 1119
MD	990368-1		0.14556			0.15037	0.00481	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	2.15364		2.00	0.15037	100.2	%	75-125	02/23/99 1142
CCB			0.00311						0.05	02/23/99 1423
CCV		MS990040	5.11114		5.000		102.2	%	90-110	02/23/99 1443

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Cobalt (Co)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00701						0.05	02/23/99 0958
ICV		MS990099	9.79206		10.0		97.9	%	90-110	02/23/99 1007
ISB		MS990094	0.23880		0.25		95.5	%	80-120	02/23/99 1026
CCB			-0.00216						0.05	02/23/99 1033
CCV		MS990040	4.69276		5.000		93.9	%	90-110	02/23/99 1045
MB			0.00603						0.05	02/23/99 1104
LCS		3010A0217	2.01582		2.00		100.8	%	80-120	02/23/99 1119
MD	990368-1		0.07934			0.08662	0.00728	A	0.05000	02/23/99 1129
MS	990368-1	3010A0217	2.05243		2.00	0.08662	98.3	%	75-125	02/23/99 1142
CCB			0.00459						0.05	02/23/99 1423
CCV		MS990040	5.08503		5.000		101.7	%	90-110	02/23/99 1443

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Copper (Cu)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00146						0.05	02/23/99 0958
ICV		MS990099	9.81211		10.0		98.1	%	90-110	02/23/99 1007

* %-% REC R-RPD A-ABS Diff. D-% Diff.

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

OMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

t Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
od Description.: Metals Analysis (ICAP) Units.....: mg/L
meter.....: Copper (Cu)

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
	MS990094	0.22256		0.25		89.0	%	80-120	02/23/99 1026
		-0.00389						0.05	02/23/99 1033
	MS990040	4.73661		5.000		94.7	%	90-110	02/23/99 1045
		-0.00389						0.05	02/23/99 1104
	3010A0217	1.95410		2.00		97.7	%	80-120	02/23/99 1119
90368-1		0.28557			0.29093	1.9	R	20	02/23/99 1129
990368-1	3010A0217	2.24211		2.00	0.29093	97.6	%	75-125	02/23/99 1142
		-0.02337						0.05	02/23/99 1423
	MS990040	5.14274		5.000		102.9	%	90-110	02/23/99 1443

st Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
thod Description.: Metals Analysis (ICAP) Units.....: mg/L
meter.....: Lead (Pb)

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
		-0.00590						0.05	02/23/99 0958
	MS990099	9.87049		10.0		98.7	%	90-110	02/23/99 1007
		-0.03227						0.05	02/23/99 1033
	MS990040	4.73484		5.000		94.7	%	90-110	02/23/99 1045
		-0.03497						0.05	02/23/99 1104
	3010A0217	2.03221		2.00		101.6	%	80-120	02/23/99 1119
90368-1		-0.05259			-0.06431	0.01172	A	0.05000	02/23/99 1129
990368-1	3010A0217	1.98547		2.00	-0.06431	102.5	%	75-125	02/23/99 1142
		0.02596						0.05	02/23/99 1423
	MS990040	5.11675		5.000		102.3	%	90-110	02/23/99 1443

est Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
ethod Description.: Metals Analysis (ICAP) Units.....: mg/L
meter.....: Manganese (Mn)

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
		0.00048						0.05	02/23/99 0958
	MS990099	9.91478		10.0		99.1	%	90-110	02/23/99 1007
	MS990094	0.24985		0.25		99.9	%	80-120	02/23/99 1026
		0.00024						0.05	02/23/99 1033
	MS990040	4.88836		5.000		97.8	%	90-110	02/23/99 1045
		-0.00000						0.05	02/23/99 1104
	3010A0217	1.97531		2.00		98.8	%	80-120	02/23/99 1119
990368-1		0.58271			0.58489	0.4	R	20	02/23/99 1129
990368-1	3010A0217	2.54762		2.00	0.58489	98.1	%	75-125	02/23/99 1142
		-0.00097						0.05	02/23/99 1423
	MS990040	5.12352		5.000		102.5	%	90-110	02/23/99 1443

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 2994 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00166						0.05	02/23/99 0958
ICV		MS990099	9.96238		10.0		99.6	%	90-110	02/23/99 1007
ISB		MS990094	0.48304		0.500		96.6	%	80-120	02/23/99 1026
CCB			-0.00411						0.05	02/23/99 1033
CCV		MS990040	5.03720		5.000		100.7	%	90-110	02/23/99 1045
MB			0.00687						0.05	02/23/99 1104
LCS		3010A0217	2.08456		2.00		104.2	%	80-120	02/23/99 1119
MD	990368-1		2.21810			2.22940	0.5	R	20	02/23/99 1129
MS	990368-1	3010A0217	4.23028		2.00	2.22940	100.0	%	75-125	02/23/99 1142
CCB			0.00481						0.05	02/23/99 1423
CCV		MS990040	5.11561		5.000		102.3	%	90-110	02/23/99 1443

Test Method.....: EPA 300.0 Batch.....: 3004 Analyst...: *HE
Method Description.: Ion Chromatography Analysis Units.....: mg/L
Parameter.....: Bromide (Br)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MS		HE022299	10.9224			1.0769	98.5	%	75-125	02/22/99 1650
MD			1.1085			1.0769	0.0316	A	1.0000	02/22/99 1650
LCS		HE022299	9.9108				99.1	%	80-120	02/22/99 1650
CCV		HE022299	9.8393				98.4	%	90-110	02/22/99 1650
CCV	22299 -2	HE022299	9.8345				98.3	%	90-110	02/22/99 1650
CCB			ND						0.1	02/22/99 1650
CCB			ND						0.1	02/22/99 1650

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Boron (B)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			[002q55						0.20	03/02/99 1043
ICV		MS990099	10.39		10.0		103.9	%	90-110	03/02/99 1050
ISB		MS990094	1.858		2.000		92.9	%	80-120	03/02/99 1110
CCB			0.0089						0.20	03/02/99 1130
CCV		MS990107	4.991		5.000		99.8	%	90-110	03/02/99 1152
MB			0.0453						0.20	03/02/99 1157
LCS		3010022799	2.111		2.000		105.5	%	80-120	03/02/99 1201
MS	990587-1	3010022799	8.444		2.000	6.352	104.6	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	8.314	8.444	2.000	6.352	98.1	%	75-125	03/02/99 1215
							1.6	R	20	
CCV		MS990107	5.010		5.000		100.2	%	90-110	03/02/99 1316
CCB			0.0087						0.20	03/02/99 1326
EB			-0.0855						0.20	03/02/99 1511
CCB			0.0088						0.20	03/02/99 1515
CCV		MS990107	5.118		5.000		102.4	%	90-110	03/02/99 1549

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Calcium (Ca)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.0005						0.5	03/02/99 1043
ICV		MS990099	10.41		10.0		104.1	%	90-110	03/02/99 1050
ISA		MS990095	111.3		100.0		111.3	%	80-120	03/02/99 1106
ISB		MS990094	107.0		100.0		107.0	%	80-120	03/02/99 1110
CCB			0.0220						0.5	03/02/99 1130
CCV		MS990108	4.855		5.000		97.1	%	90-110	03/02/99 1147
MB			0.0055						0.5	03/02/99 1157
LCS		3010022799	1.823		2.000		91.2	%	80-120	03/02/99 1201
MS	990587-1	3010022799	39.67		2.000	38.03	82.0	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	39.17	39.67	2.000	38.03	57.0	%	75-125	03/02/99 1215
							1.3	R	20	
CCV		MS990108	5.064		5.000		101.3	%	90-110	03/02/99 1321
CCB			-0.0068						0.5	03/02/99 1326
PDS	990587-1	MS990109	46.91		10.00	38.03	88.8	%	75-125	03/02/99 1353
PSD	990587-1	MS990109	47.97	46.91	10.00	38.03	99.4	%	75-125	03/02/99 1356
							2.2	R	20	
EB			-0.0879						0.5	03/02/99 1511
CCB			-0.0253						0.5	03/02/99 1515
CCV		MS990108	4.870		5.000		97.4	%	90-110	03/02/99 1529

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00179						0.05	03/02/99 1043
ICV		MS990099	10.27263		10.0		102.7	%	90-110	03/02/99 1050
ISA		MS990095	103.81086		100.0		103.8	%	80-120	03/02/99 1106
ISB		MS990094	100.9		100.0		100.9	%	80-120	03/02/99 1110
CCB			0.02164						0.05	03/02/99 1130
CCV		MS990108	4.86735		5.000		97.3	%	90-110	03/02/99 1147
MB			0.09953						0.05	03/02/99 1157
LCS		3010022799	2.10844		2.000		105.4	%	80-120	03/02/99 1201
MS	990587-1	3010022799	2.85850		2.000	0.75194	105.3	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	2.67198	2.85850	2.000	0.75194	96.0	%	75-125	03/02/99 1215
							6.7	R	20	
CCV		MS990108	4.98481		5.000		99.7	%	90-110	03/02/99 1321
CCB			0.00065						0.05	03/02/99 1326
EB			0.12537						0.05	03/02/99 1511
CCB			0.37802						0.05	03/02/99 1515
CCV		MS990108	4.94750		5.000		99.0	%	90-110	03/02/99 1529

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Magnesium (Mg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.0123						0.1	03/02/99 1043
ICV		MS990099	10.30		10.0		103.0	%	90-110	03/02/99 1050

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Magnesium (Mg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ISA		MS990095	113.3		100.0		113.3	%	80-120	03/02/99 1106
ISB		MS990094	110.9		100.0		110.9	%	80-120	03/02/99 1110
CCB			0.0426						0.1	03/02/99 1130
CCV		MS990108	4.876		5.000		97.5	%	90-110	03/02/99 1147
MB			0.0167						0.1	03/02/99 1157
LCS		3010022799	1.988		2.000		99.4	%	80-120	03/02/99 1201
MS	990587-1	3010022799	7.015		2.000	5.093	96.1	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	6.935	7.015	2.000	5.093	92.1	%	75-125	03/02/99 1215
							1.1	R	20	
CCV		MS990108	4.841		5.000		96.8	%	90-110	03/02/99 1321
CCB			0.0111						0.1	03/02/99 1326
EB			0.0367						0.1	03/02/99 1511
CCB			0.1208						0.1	03/02/99 1515
CCV		MS990108	5.061		5.000		101.2	%	90-110	03/02/99 1529

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Molybdenum (Mo)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00748						0.05	03/02/99 1043
ICV		MS980436	9.44413		10.0		94.4	%	90-110	03/02/99 1102
ISB		MS990109	0.40541		10.000		81.1	%	80-120	03/02/99 1125
CCB			0.00032						0.05	03/02/99 1130
CCV		MS990108	4.89585		5.000		97.9	%	90-110	03/02/99 1147
MB			0.00469						0.05	03/02/99 1157
LCS		3010022799	2.04763		2.000		102.4	%	80-120	03/02/99 1201
MS	990587-1	3010022799	71.82068		2.000	69.98162	92.0	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	70.79716	71.82068	2.000	69.98162	40.8	%	75-125	03/02/99 1215
							1.4	R	20	
CCV		MS990108	5.11369		5.000		102.3	%	90-110	03/02/99 1321
CCB			0.01670						0.05	03/02/99 1326
PDS	990587-1	MS990109	78.72290		10.000	69.98162	87.4	%	75-125	03/02/99 1334
PSD	990587-1	MS990109	79.02817	78.72290	10.000	69.98162	90.5	%	75-125	03/02/99 1337
							0.4	R	20	
EB			-0.00178						0.05	03/02/99 1511
CCB			0.01382						0.05	03/02/99 1515
CCV		MS990108	4.93514		5.000		98.7	%	90-110	03/02/99 1529

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Potassium (K)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.38903						5.0	03/02/99 1043
ICV		MS990099	103.14555		100.0		103.1	%	90-110	03/02/99 1050
ISB		MS990094	4.457		5.000		89.1	%	80-120	03/02/99 1110
CCB			0.54470						5.0	03/02/99 1130
CCV		MS990107	49.87633		50.000		99.8	%	90-110	03/02/99 1152

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Potassium (K)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			1.32322						5.0	03/02/99 1157
LCS		3010022799	20.65377		20.000		103.3	%	80-120	03/02/99 1201
MS	990587-1	3010022799	20.79974		20.000	1.08382	98.6	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	21.16997	20.79974	20.000	1.08382	100.4	%	75-125	03/02/99 1215
							1.8	R	20	
CCV		MS990107	49.30781		50.000		98.6	%	90-110	03/02/99 1316
CCB			1.06364						5.0	03/02/99 1326
EB			-41.75262						5.0	03/02/99 1511
CCB			-0.09928						5.0	03/02/99 1515
CCV		MS990107	45.22752		50.000		90.5	%	90-110	03/02/99 1549

Test Method.....: SW-846 6010B Batch.....: 3124 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00796						0.05	03/02/99 1043
ICV		MS990098	10.68040		10.000		106.8	%	90-110	03/02/99 1047
ISB		MS990094	0.4855		0.500		97.1	%	80-120	03/02/99 1110
CCB			0.00543						0.05	03/02/99 1130
CCV		MS990107	4.98765		5.000		99.8	%	90-110	03/02/99 1152
MB			0.01747						0.05	03/02/99 1157
LCS		3010022799	2.01056		2.000		100.5	%	80-120	03/02/99 1201
MS	990587-1	3010022799	1.92523		2.000	0.01677	95.4	%	75-125	03/02/99 1211
MSD	990587-1	3010022799	1.95261	1.92523	2.000	0.01677	96.8	%	75-125	03/02/99 1215
							1.4	R	20	
CCV		MS990107	4.92410		5.000		98.5	%	90-110	03/02/99 1316
CCB			0.01194						0.05	03/02/99 1326
EB			-0.00824						0.05	03/02/99 1511
CCB			0.01712						0.05	03/02/99 1515
CCV		MS990107	5.10220		5.000		102.0	%	90-110	03/02/99 1549

Test Method.....: EPA 353.3 Batch.....: 3168 Analyst...: bt
Method Description.: Nitrate-Nitrite (Cadmium Reduction) Units.....: mg/L
Parameter.....: Nitrogen, Nitrate as N (NO3-N)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<0.05						0.05	03/04/99 2120
LCS		WS990828	0.48		0.500000		96.0	%	80-120	03/04/99 2120
MD	990481-1		<0.05			<0.05	0.0	R	20	03/04/99 2120
MS	990481-1	WS990826	0.34		0.400000	<0.05	85.0	%	80-120	03/04/99 2120

* %-% REC R-RPD A-ABS Diff. D-% Diff.

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 7740 Batch.....: 3273 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/10/99 1400
ICV		MS990128	0.0258		0.0250		103.2	%	90-110	03/10/99 1506
MB			<0.01						0.005	03/10/99 1613
LCS		MS990128	0.0267		0.0250		106.8	%	80-120	03/10/99 1719
MS	990482-1	MS990128	0.0219		0.0250	<0.01	87.6	%	75-125	03/10/99 1932
MSD	990482-1	MS990128	0.0170	0.0219	0.0250	<0.01	68.0	%	75-125	03/10/99 2038
							25.2	R	20	
CCB			<0.01						0.005	03/10/99 2144
CCV		MS990128	0.0244		0.0250		97.6	%	80-120	03/10/99 2251
CCB	31099 -2		<0.01						0.005	03/11/99 0528
CCV	31099 -2	MS990128	0.0207		0.0250		82.8	%	80-120	03/11/99 0635
PDS	990842-1	MS990128	0.0246		0.0250	<0.01	98.4	%	75-125	03/11/99 0741
PSD	990842-1	MS990128	0.0231	0.0246	0.0250	<0.01	92.4	%	75-125	03/11/99 0847
							6.3	R	20	
CCB	31099 -3		<0.01						0.005	03/11/99 0954
CCV	31099 -3	MS990128	0.0264		0.0250		105.6	%	90-110	03/11/99 1100

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00867						0.10	03/15/99 1324
ICV		MS990112	9.73339		10.0		97.3	%	90-110	03/15/99 1333
ISA		MS990095	96.65311		100.0		96.7	%	80-120	03/15/99 1344
ISB		MS990094	95.51260		100.0		95.5	%	80-120	03/15/99 1349
CCB			-0.07681						0.10	03/15/99 1416
CCV		MS990107	4.84232		5.000		96.8	%	90-110	03/15/99 1429
CCV		MS990107	4.87135		5.000		97.4	%	90-110	03/15/99 1533
CCB			0.02668						0.10	03/15/99 1559
CCB			0.00653						0.10	03/15/99 1658
CCV		MS990107	4.96395		5.000		99.3	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.10994		1.000	0.01534	109.5	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.13514	1.10994	1.000	0.01534	112.0	%	75-125	03/15/99 1739
							2.2	R	20	
CCB			0.01182						0.10	03/15/99 1814
CCV		MS990107	4.92190		5.000		98.4	%	90-110	03/15/99 1819
CCB			0.00287						0.10	03/15/99 1858
CCV		MS990107	4.98147		5.000		99.6	%	90-110	03/15/99 1902
MB			0.02977						0.10	03/15/99 1937
LCS		3010030999	2.09361		2.000		104.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86649		2.000	0.01552	92.5	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.11166	1.86649	2.000	0.01552	104.8	%	75-125	03/15/99 1955
							12.3	R	20	
CCB			0.04816						0.10	03/15/99 2026
CCV		MS990107	5.13870		5.000		102.8	%	90-110	03/15/99 2039

* %-% REC R-RPD A-ABS Diff. D-% Diff.

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.01622						0.05	03/15/99 1324
ICV		MS990112	9.73699		10.0		97.4	%	90-110	03/15/99 1333
ISA		MS990095	94.41921		100.0		94.4	%	80-120	03/15/99 1344
ISB		MS990094	92.61569		100.0		92.6	%	80-120	03/15/99 1349
CCB			0.00718						0.05	03/15/99 1416
CCV		MS990108	5.08773		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.12198		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.01437						0.05	03/15/99 1559
CCB			-0.00267						0.05	03/15/99 1658
CCV		MS990108	5.07030		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.13224		1.000	0.05310	107.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.14611	1.13224	1.000	0.05310	109.3	%	75-125	03/15/99 1739
							1.2	R	20	
CCB			-0.01486						0.05	03/15/99 1814
CCV		MS990108	5.13707		5.000		102.7	%	90-110	03/15/99 1832
CCB			-0.01655						0.05	03/15/99 1858
CCV		MS990108	5.13406		5.000		102.7	%	90-110	03/15/99 1912
MB			0.06096						0.05	03/15/99 1937
LCS		3010030999	1.92146		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.87288		2.000	0.07158	90.1	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.91956	1.87288	2.000	0.07158	92.4	%	75-125	03/15/99 1955
							2.5	R	20	
CCB			0.00442						0.05	03/15/99 2026
CCV		MS990108	5.25509		5.000		105.1	%	90-110	03/15/99 2044
MB			-0.00153						0.05	03/15/99 2049
MS	990482-1	3015030999	6.16588		2.000	7.06424	-44.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	6.96977	6.16588	2.000	7.06424	-4.7	%	75-125	03/15/99 2101
							12.2	R	20	
CCB			0.31491						0.05	03/15/99 2108
CCV		MS990108	4.92815		5.000		98.6	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Sodium (Na)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00302						1	03/15/99 1324
ICV		MS990112	9.98136		10.0		99.8	%	90-110	03/15/99 1333
ISB		MS990094	4.98790		5.000		99.8	%	80-120	03/15/99 1349
CCB			-0.12253						1	03/15/99 1416
CCV		MS990107	4.97138		5.000		99.4	%	90-110	03/15/99 1429
CCV		MS990107	4.83193		5.000		96.6	%	90-110	03/15/99 1533
CCB			-0.37901						1	03/15/99 1559
CCB			0.88806						1	03/15/99 1658
CCV		MS990107	5.13731		5.000		102.7	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.37766		1.000	0.28017	109.7	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.45273	1.37766	1.000	0.28017	117.3	%	75-125	03/15/99 1739
							5.3	R	20	
CCB			-0.17080						1	03/15/99 1814
CCV		MS990107	5.06157		5.000		101.2	%	90-110	03/15/99 1819
CCB			-0.42802						1	03/15/99 1858

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Sodium (Na)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCV		MS990107	5.01403		5.000		100.3	%	90-110	03/15/99 1902
MB			-0.39382						1	03/15/99 1937
LCS		3010030999	1.85538		2.000		92.8	%	80-120	03/15/99 1941
PDS	990481-1	MT972665	157.67799		50.000000	106.78443	101.8	%	75-125	03/15/99 2017
PSD	990481-1	MT972665	154.06095	157.67799	50.000000	106.78443	94.6	%	75-125	03/15/99 2021
							2.3	R	20	
CCB			-0.77437						1	03/15/99 2026
CCV		MS990107	4.91818		5.000		98.4	%	90-110	03/15/99 2039

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00195						0.05	03/15/99 1324
ICV		MS990112	9.75665		10.0		97.6	%	90-110	03/15/99 1333
ISB		MS990094	0.22562		0.25		90.2	%	80-120	03/15/99 1349
CCB			-0.00130						0.05	03/15/99 1416
CCV		MS990108	5.08355		5.000		101.7	%	90-110	03/15/99 1446
CCV		MS990108	5.11973		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00194						0.05	03/15/99 1559
CCB			-0.00178						0.05	03/15/99 1658
CCV		MS990108	5.07307		5.000		101.5	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08019		1.000	-0.00016	108.0	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10130	1.08019	1.000	-0.00016	110.1	%	75-125	03/15/99 1739
							1.9	R	20	
CCB			-0.00147						0.05	03/15/99 1814
CCV		MS990108	5.10386		5.000		102.1	%	90-110	03/15/99 1832
CCB			-0.00147						0.05	03/15/99 1858
CCV		MS990108	5.10912		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00170						0.05	03/15/99 1937
LCS		3010030999	1.91418		2.000		95.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86398		2.000	0.01589	92.4	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.90246	1.86398	2.000	0.01589	94.3	%	75-125	03/15/99 1955
							2.0	R	20	
CCB			-0.00163						0.05	03/15/99 2026
CCV		MS990108	5.25274		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00515						0.05	03/15/99 2049
MS	990482-1	3015030999	1.81264		2.000	0.05038	88.1	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.82319	1.81264	2.000	0.05038	88.6	%	75-125	03/15/99 2101
							0.6	R	20	
CCB			0.00203						0.05	03/15/99 2108
CCV		MS990108	4.73552		5.000		94.7	%	90-110	03/15/99 2111

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 7740 Batch.....: 3339 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/15/99 1600
ICV		MS990140	0.0249		0.0250		99.6	%	90-110	03/15/99 1643
MS	990483-1	MS980135	0.02115			<0.01	84.6	%	75-125	03/15/99 2019
CCB			<0.01						0.005	03/15/99 2102
CCV		MS990140	0.02246		0.0250		89.8	%	90-110	03/15/99 2145
MSD	990483-1	MS990140	0.02032	0.02115	0.0250	<0.01	81.3	%	75-125	03/15/99 2229
							4.0	R	20	
CCB	31599 -2		<0.01						0.005	03/15/99 2312
CCV	31599 -2	MS990140	0.02155		0.0250		86.2	%	90-110	03/15/99 2355

Test Method.....: SW-846 6010B Batch.....: 3758 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00072						0.05	04/05/99 1015
ICV		MS990112	9.70297		10.0		97.0	%	95-105	04/05/99 1024
ISB		MS990094	0.24400		0.25		97.6	%	80-120	04/05/99 1038
CCB			0.00072						0.05	04/05/99 1054
CCV		MS990107	4.98351		5.000		99.7	%	95-105	04/05/99 1112
PDS	990481-1	PDS040599	1.13467		1.000	0.08337	105.1	%	75-125	04/05/99 1124
PSD	990481-1	PDS040599	1.11723	1.13467	1.000	0.08337	103.4	%	75-125	04/05/99 1128
							1.5	R	20	
CCB			0.00072						0.05	04/05/99 1201
CCV		MS990107	4.98329		5.000		99.7	%	95-105	04/05/99 1217

Test Method.....: SW-846 6010B Batch.....: 3758 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00216						0.05	04/05/99 1015
ICV		MS990112	9.73077		10.0		97.3	%	95-105	04/05/99 1024
ISB		MS990094	0.23618		0.25		94.5	%	80-120	04/05/99 1038
CCB			-0.00094						0.05	04/05/99 1054
CCV		MS990108	5.02504		5.000		100.5	%	95-105	04/05/99 1107
PDS	990481-1	PDS040599A	1.06360		1.000	-0.00127	106.5	%	75-125	04/05/99 1135
PSD	990481-1	PDS040599A	1.04709	1.06360	1.000	-0.00127	104.8	%	75-125	04/05/99 1138
							1.6	R	20	
CCB			0.00230						0.05	04/05/99 1201
CCV		MS990108	4.97031		5.000		99.4	%	95-105	04/05/99 1212

* %-% REC R-RPD A-ABS Diff. D-% Diff.

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3758 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00068						0.05	04/05/99 1015
ICV		MS990112	9.68095		10.0		96.8	%	95-105	04/05/99 1024
ISB		MS990094	0.24028		0.25		96.1	%	80-120	04/05/99 1038
CCB			0.00011						0.05	04/05/99 1054
CCV		MS990108	5.02175		5.000		100.4	%	95-105	04/05/99 1107
PDS	990481-1	PDS040599	1.05191		1.000	0.04592	100.6	%	75-125	04/05/99 1124
PSD	990481-1	PDS040599	1.03755	1.05191	1.000	0.04592	99.2	%	75-125	04/05/99 1128
							1.4	R	20	
CCB			-0.00011						0.05	04/05/99 1201
CCV		MS990108	4.87209		5.000		97.4	%	95-105	04/05/99 1212

Test Method.....: SW-846 6010B Batch.....: 3758 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Molybdenum (Mo)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.01111						0.05	04/05/99 1015
ICV		MS990134	10.00330		10.000		100.0	%	95-105	04/05/99 1032
ISB		MS990094	0.52018		0.5000		104.0	%	80-120	04/05/99 1051
CCB			0.00335						0.05	04/05/99 1054
CCV		MS990108	5.03856		5.000		100.8	%	95-105	04/05/99 1107
PDS	990481-1	PDS040599	1.17296		1.000	0.16303	101.0	%	75-125	04/05/99 1124
PSD	990481-1	PDS040599	1.15797	1.17296	1.000	0.16303	99.5	%	75-125	04/05/99 1128
							1.3	R	20	
CCB			0.00216						0.05	04/05/99 1201
CCV		MS990108	4.95809		5.000		99.2	%	95-105	04/05/99 1212

Test Method.....: SW-846 6010B Batch.....: 3758 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00904						0.05	04/05/99 1015
ICV		MS990143	9.86910		10.00		98.7	%	95-105	04/05/99 1019
ISB		MS990094	0.47096		0.500		94.2	%	80-120	04/05/99 1038
CCB			0.00711						0.05	04/05/99 1054
CCV		MS990107	4.98052		5.000		99.6	%	95-105	04/05/99 1112
PDS	990481-1	PDS040599	0.95278		1.000	-0.00043	95.3	%	75-125	04/05/99 1124
PSD	990481-1	PDS040599	0.92713	0.95278	1.000	-0.00043	92.8	%	75-125	04/05/99 1128
							2.7	R	20	
CCB			0.00562						0.05	04/05/99 1201
CCV		MS990107	4.69067		5.000		93.8	%	95-105	04/05/99 1217

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank				02/23/99	1705

Test Method.....: SW-846 8260B Batch.....: 3320 Analyst ...: mk
Method Description.: Volatile Organics Units.....: ug/L

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Acetone	ND						50
Benzene	ND						5
Bromobenzene	ND						5
Bromochloromethane	ND						5
Bromodichloromethane	ND						5
Bromoform	ND						5
Bromomethane	ND						10
2-Butanone (MEK)	ND						50
n-Butylbenzene	ND						5
sec-Butylbenzene	ND						5
tert-Butylbenzene	ND						5
Carbon disulfide	ND						5
Carbon tetrachloride	ND						5
Chlorobenzene	ND						5
Chloroethane	ND						10
2-Chloroethylvinyl ether	ND						5
Chloroform	ND						5
Chloromethane	ND						10
2-Chlorotoluene	ND						5
4-Chlorotoluene	ND						5
Dibromochloromethane	ND						5
1,2-Dibromo-3-chloropropane	ND						5
1,2-Dibromoethane (EDB)	ND						5
Dibromomethane	ND						5
1,2-Dichlorobenzene	ND						5
1,3-Dichlorobenzene	ND						5
1,4-Dichlorobenzene	ND						5
Dichlorodifluoromethane	ND						10
1,1-Dichloroethane	ND						5
1,2-Dichloroethane	ND						5
1,1-Dichloroethene	ND						5
cis-1,2-Dichloroethene	ND						5
trans-1,2-Dichloroethene	ND						5
1,2-Dichloropropane	ND						5
1,3-Dichloropropane	ND						5
2,2-Dichloropropane	ND						5
1,1-Dichloropropene	ND						5
cis-1,3-Dichloropropene	ND						5
trans-1,3-Dichloropropene	ND						5
Ethylbenzene	ND						5
Hexachlorobutadiene	ND						5
2-Hexanone	ND						50
Iodomethane	ND						5
Isopropylbenzene	ND						5
p-Isopropyltoluene	ND						5
Methylene chloride	ND						10
4-Methyl-2-pentanone (MIBK)	ND						50
Naphthalene	ND						10

* %-% REC R-RPD A-ABS Diff. D-% Diff.

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank				02/23/99	1705

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
n-Propylbenzene	ND						5
Styrene	ND						5
1,1,1,2-Tetrachloroethane	ND						5
1,1,2,2-Tetrachloroethane	ND						5
Tetrachloroethene	ND						5
Toluene	ND						5
1,2,3-Trichlorobenzene	ND						5
1,2,4-Trichlorobenzene	ND						5
1,1,1-Trichloroethane	ND						5
1,1,2-Trichloroethane	ND						5
Trichloroethene	ND						5.0
Trichlorofluoromethane	ND						5
1,2,4-Trimethylbenzene	ND						5
1,3,5-Trimethylbenzene	ND						5
1,2,3-Trichloropropane	ND						5
Vinyl acetate	ND						5
Vinyl chloride	ND						10
Xylenes (total)	ND						15

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank				02/21/99	1706

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Acetone	ND						50
Benzene	ND						5
Bromobenzene	ND						5
Bromochloromethane	ND						5
Bromodichloromethane	ND						5
Bromoform	ND						5
Bromomethane	ND						10
2-Butanone (MEK)	ND						50
n-Butylbenzene	ND						5
sec-Butylbenzene	ND						5
tert-Butylbenzene	ND						5
Carbon disulfide	ND						5
Carbon tetrachloride	ND						5
Chlorobenzene	ND						5
Chloroethane	ND						10
2-Chloroethylvinyl ether	ND						5
Chloroform	ND						5
Chloromethane	ND						10
2-Chlorotoluene	ND						5
4-Chlorotoluene	ND						5
Dibromochloromethane	ND						5
1,2-Dibromo-3-chloropropane	ND						5
1,2-Dibromoethane (EDB)	ND						5
Dibromomethane	ND						5
1,2-Dichlorobenzene	ND						5
1,3-Dichlorobenzene	ND						5
1,4-Dichlorobenzene	ND						5
Dichlorodifluoromethane	ND						10
1,1-Dichloroethane	ND						5

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank				02/21/99	1706

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
1,2-Dichloroethane	ND						5
1,1-Dichloroethene	ND						5
cis-1,2-Dichloroethene	ND						5
trans-1,2-Dichloroethene	ND						5
1,2-Dichloropropane	ND						5
1,3-Dichloropropane	ND						5
2,2-Dichloropropane	ND						5
1,1-Dichloropropene	ND						5
cis-1,3-Dichloropropene	ND						5
trans-1,3-Dichloropropene	ND						5
Ethylbenzene	ND						5
Hexachlorobutadiene	ND						5
2-Hexanone	ND						50
Iodomethane	ND						5
Isopropylbenzene	ND						5
p-Isopropyltoluene	ND						5
Methylene chloride	ND						10
4-Methyl-2-pentanone (MIBK)	ND						50
Naphthalene	ND						10
n-Propylbenzene	ND						5
Styrene	ND						5
1,1,1,2-Tetrachloroethane	ND						5
1,1,2,2-Tetrachloroethane	ND						5
Tetrachloroethene	ND						5
Toluene	ND						5
1,2,3-Trichlorobenzene	ND						5
1,2,4-Trichlorobenzene	ND						5
1,1,1-Trichloroethane	ND						5
1,1,2-Trichloroethane	ND						5
Trichloroethene	ND						5.0
Trichlorofluoromethane	ND						5
1,2,4-Trimethylbenzene	ND						5
1,3,5-Trimethylbenzene	ND						5
1,2,3-Trichloropropane	ND						5
Vinyl acetate	ND						5
Vinyl chloride	ND						10
Xylenes (total)	ND						15

LCS	Laboratory Control Sample	LCS22299A			02/23/99	1505

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	50		50.0		100	%	70-130
Chlorobenzene	50		50.0		100	%	70-130
1,1-Dichloroethene	50		50.0		100	%	70-130
Toluene	56		50.0		112	%	70-130
Trichloroethene	50		50.0		100	%	70-130

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990481 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	LCS022199			02/21/99	1506

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	47		50.0		94	%	70-130
Chlorobenzene	49		50.0		98	%	70-130
1,1-Dichloroethene	52		50.0		104	%	70-130
Toluene	54		50.0		108	%	70-130
Trichloroethene	51		50.0		102	%	70-130

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	LCS022199	990546-10		02/21/99	2242

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	46		50.0	ND	92.0	%	70-130
Chlorobenzene	50		50.0	ND	100.0	%	70-130
1,1-Dichloroethene	50		50.0	ND	100.0	%	70-130
Toluene	51		50.0	ND	102.0	%	70-130
Trichloroethene	49		50.0	ND	98.0	%	70-130

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	LCS022199	990546-10		02/21/99	2322

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	46	46	50.0	ND	92.0	%	70-130
					0.0	R	20
Chlorobenzene	50	50	50.0	ND	100.0	%	70-130
					0.0	R	20
1,1-Dichloroethene	49	50	50.0	ND	98.0	%	70-130
					2.0	R	20
Toluene	52	51	50.0	ND	104.0	%	70-130
					1.9	R	20
Trichloroethene	48	49	50.0	ND	96.0	%	70-130
					2.1	R	20

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 990481 Report Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Method.....: SW-846 8260B Batch.....: 3320
Method Code.....: 8260 Analyst.....: mk

Surrogate	Units
1,2-Dichloroethane-d4	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990481-1				57	50.00	114.0	80-120		02/24/99	0043
		MB		50	50.00	100.0	80-120		02/23/99	1705
		MB		59	50.00	118.0	80-120		02/21/99	1706
		LCS		51	50.00	102.0	80-120		02/23/99	1505
		LCS		48	50.00	96.0	80-120		02/21/99	1506
990546-10			10	47	50.00	94.0	80-120		02/21/99	2202
990546-10		MS		45	50.00	90.0	80-120		02/21/99	2242
990546-10		MSD		46	50.00	92.0	80-120		02/21/99	2322

Surrogate	Units
4-Bromofluorobenzene	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990481-1				50	50.00	100.0	86-115		02/24/99	0043
		MB		52	50.00	104.0	86-115		02/23/99	1705
		MB		51	50.00	102.0	86-115		02/21/99	1706
		LCS		48	50.00	96.0	86-115		02/23/99	1505
		LCS		49	50.00	98.0	86-115		02/21/99	1506
990546-10			10	49	50.00	98.0	86-115		02/21/99	2202
990546-10		MS		49	50.00	98.0	86-115		02/21/99	2242
990546-10		MSD		49	50.00	98.0	86-115		02/21/99	2322

Surrogate	Units
Dibromofluoromethane	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990481-1				50	50.00	100.0	86-118		02/24/99	0043
		MB		47	50.00	94.0	86-118		02/23/99	1705
		MB		45	50.00	90.0	86-118		02/21/99	1706
		LCS		49	50.00	98.0	86-118		02/23/99	1505
		LCS		48	50.00	96.0	86-118		02/21/99	1506
990546-10			10	44	50.00	88.0	86-118		02/21/99	2202
990546-10		MS		45	50.00	90.0	86-118		02/21/99	2242
990546-10		MSD		46	50.00	92.0	86-118		02/21/99	2322

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 990481 Report Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Surrogate	Units
Toluene-d8	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990481-1				49	50.00	98.0	88-110		02/24/99	0043
		MB		49	50.00	98.0	88-110		02/23/99	1705
		MB		52	50.00	104.0	88-110		02/21/99	1706
		LCS		51	50.00	102.0	88-110		02/23/99	1505
		LCS		51	50.00	102.0	88-110		02/21/99	1506
990546-10			10	51	50.00	102.0	88-110		02/21/99	2202
990546-10		MS		53	50.00	106.0	88-110		02/21/99	2242
990546-10		MSD		52	50.00	104.0	88-110		02/21/99	2322

CORELAB

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

ND = Analyte Not Detected above the quantitation limit
Numerical values expressed in the "LIMITS/*DILUTION" column are Practical Quantitation Limits (PQL). A final result of "ND" should be considered as "less than the PQL" (<PQL) unless otherwise indicated.

The detection limits and units reported in the Quality Control (QC) Report may not coincide with the values reported in the Laboratory Test Results Report because the data presented in the QC Report may not account for sample preparation and dilutions performed.

The date and time analyzed on the QC Report reflects either the actual date and/or time of sample analysis or the date and/or time of analysis completion for a sample batch.

Results for soil samples are reported on a wet weight basis (unless otherwise indicated).

Cited Test Methods are obtained from the following documents:

EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, 1986 and Updates I, II, IIA, and IIB
Standard Methods for the Examination of Water and Wastewater, 14th Ed., 1976, 15th Ed., 1981, and 18th Ed., 1992
United Oil Processors (UOP) Manual of Laboratory Test Methods
Hach Handbook of Water Analysis, 1979

SUBCONTRACTED LABORATORY LOCATIONS

For analysis performed by a subcontract laboratory, an "**" and the designated laboratory code is indicated in the "TECHN" column of the Laboratory Test Results Report.

Core Laboratories:

Anaheim	* A N	Houston Environmental	* H E
Aurora	* A U	Houston Petroleum	* H P
Carrollton	* C R	Indianapolis	* I N
Casper	* C A	Long Beach	* L B
Corpus Christi	* C C	New Orleans	* N O
Edison	* E D	Valparaiso	* V P
Hollister	* H R	Other	* X X

QUALITY ASSURANCE REPORT CODES

NC = Not Calculable due to values lower than the reporting limit

BLANKS	REFERENCE STANDARDS	SPIKES	DUPLICATES
MB = Method Blank	CS = Calibration Standard	MS = Matrix Spike	MSD = Matrix Spike Dupl.
RB = Reagent Blank	RS = Reference Standard	PDS = Post-Digest Spike	SD = Sample Duplicate
IB = Instrument Blank	ICV = Initial Calib. Verification	BS = Blank Spike	MD = Method Duplicate
ICB = Initial Calib. Blank	CCV = Continuing Calib. Verification	SS = Surrogate Spike	
CCB = Cont. Calib. Blank	LCS = Laboratory Control Standard		

For organic parameters, the blank value reported in the QC section of the report is the lowest reportable limit for the method.

3645 Beglis Pkwy
Sulphur, LA 70663
(318) 583-4926

CORE LABORATORIES, INC.

NO. 151010

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: ENSR	PROJECT NAME/NUMBER: Bowen Hobbs, 00770134 11
SEND REPORT TO: Russell Turner	**BILLING INFORMATION**
ADDRESS: 3000 Richmond Ave, Suite 400	BILL TO:
Houston, TX 77098	ADDRESS: Same
PHONE: (713) 520-5400	PHONE:
FAX: (713) 520-5602	FAX: PO NO.:

LAB JOB NO. 990481

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	PRESERV.	# CONTAINERS	VOCs	SVOCs	Metals	Cl, Br	F, Alkalinity	Nitrate	TDS, Sulfate	Selenium (Field Filtered)	REMARKS / PRECAUTIONS
	MW 2A	2/11/99	5:00	H_2O / HCl	2	✓								
	MW 2B	2/11/99	5:00	—	2		✓							
	MW-2C	2/11/99	5:00	HNO_3	1			✓						
	MW-2D	2/11/99	5:00	—	1				✓					
	MW 2E	2/11/99	5:00	—	1					✓				
	MW-2F	2/11/99	5:00	—	1						✓			
	MW-2G	2/11/99	5:00	—	1							✓		
	MW 2H	2/11/99	5:00	—	1								✓	

SAMPLER: Christa Kiker

SHIPMENT METHOD: Fed Ex

AIRBILL NO.: 497990591 0

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

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Christa Kiker	2/12/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Christa Kiker / ENSR	TIME: 10:00AM	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Shirlene Davison	2/12/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Shirlene Davison / CLE	TIME: 12:35	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA
1250 E. Gene Autry Way
Anaheim, CA 92805
(714) 937-1094 Fax (714) 937-1170

☐ Houston, TX (Env)
6310 Rothway Drive
Houston, TX 77040

☐ Aurora, CO
10703 E. Bethany Drive
Aurora, CO 80014
(303) 751-1780 Fax (303) 751-1784

☐ Houston, TX (Pet)
8210 Mosley Road
Houston, TX 77075

☐ Carson, CA
21730 S. Wilmington Ave. - Suite 201
Carson, CA 90810-1640
(310) 513-2031 Fax (310) 513-2035

☐ Indianapolis, IN
7726 Moller Road
Indianapolis, IN 46268

☐ Casper, WY
420 W. First Street
Casper, WY 82601
(307) 235-5741 Fax (307) 266-1676

☑ Lake Charles, LA
3645 Begilis Parkway
Sulphur, LA 70663

☐ Corpus Christi, TX
1733 N. Padre Island Drive
Corpus Christi, TX 78408
(512) 289-2673 Fax (512) 289-2471

☐ Valparaiso, IN
2400 Cumberland Drive
Valparaiso, IN 46383

☐ Edison, NJ
284 Raritan Center Parkway
Edison, NJ 08837
(732) 225-6700 Fax (732) 225-6777

CORELAB

REVISED

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 990482

Prepared For:

ENSR
3000 RICHMOND AVE., STE 400
HOUSTON, TX 77098

Attention: RUSSELL TURNER

Date: 04/19/99

Tina J. Davis

Signature

04/19/99

Date

Name: Tina T. Davis

Title: Laboratory Manager

3645 Beglis Parkway
Sulphur, LA 70665

Phone: 318-583-4926
Fax: 318-583-4929

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990482

The revised report reflects the following changes:

SAMPLE ID:	PARAMETER	CHANGES MADE:
990482-0001	TOTAL SELENIUM: EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L
990482-0001	DISSOLVED SELENIUM EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L

Reviewed by:

Tina Davis

Tina Davis, Laboratory Manager — 04-19-99 Date

Mary Arnold

Mary Arnold, QA/QC Coordinator — 04-19-99 Date

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990482

ANALYSIS: METALS: EPA METHOD: SW-846 6010B

The revised report reflects the addition of the following metals analysis for sample 990482-0001(Client ID:MW-3 (A-H), as requested by the client.

aluminum(dissolved and total)
iron(dissolved and total)
vanadium(dissolved and total)

Reviewed by:

Tina Davis, Laboratory Manager — Date 04/16/99

Mary Arnold, QA/QC Coordinator — Date 04/16/99

CORE LABORATORIES

SAMPLE INFORMATION
Date: 04/19/99

Job Number.: 990482
Customer ..: ENSR
Attn.....: RUSSELL TURNER

Project Number.....: 99999910
Customer Project ID....: BOWEN-HOBBS007013411
Project Description....: Walk in Project

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
990482-1	MW-3 (A-H)	Water	02/12/99	08:45	02/13/99	12:35
990482-2	TRIP BLANK	Water			02/13/99	12:35

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-3 (A-H)
Date Sampled.....: 02/12/99
Time Sampled.....: 08:45
Sample Matrix.....: Water

Laboratory Sample ID: 990482-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SM 4500-CL B	Chloride	250	20	mg/L	03/11/99	cmg
EPA 160.1	Solids, Total Dissolved (TDS)	1150	50	mg/L	02/15/99	sps
SW-846 7740	Selenium (Se)	<0.01	0.01	mg/L	03/10/99	bt
SW-846 7740	Selenium (Se), Diss.	<0.01	0.01	mg/L	03/15/99	bt
SW-846 3015	Acid Digestion, Total Metals	Complete		mg/L	03/09/99	rl
SW-846 3015	Acid Digestion, Total Metals (GFAA)	Complete		mg/L	03/09/99	rl
	Filter sample prior to analysis	Complete			02/15/99	rl
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al)	12.3	0.10	mg/L	04/15/99	bt
	Barium (Ba)	0.27	0.05	mg/L	03/15/99	bt
	Chromium (Cr)	<0.05	0.05	mg/L	03/15/99	bt
	Iron (Fe)	7.06	0.05	mg/L	03/15/99	bt
	Manganese (Mn)	0.16	0.05	mg/L	03/15/99	bt
	Vanadium (V)	0.05	0.05	mg/L	03/15/99	bt
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Barium (Ba), Diss.	0.07	0.05	mg/L	03/15/99	bt
	Chromium (Cr), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Iron (Fe), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Manganese (Mn), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Vanadium (V), Diss.	<0.05	0.05	mg/L	03/15/99	bt
SW-846 3510B	Extraction (Sep. Funnel) - Semivolatiles					
	Separatory Funnel Liq/Liq Extraction	complete			02/18/99	*HE
SW-846 8270C	Semivolatile Organics					
	Acenaphthene	ND	10.0	ug/L	02/19/99	*HE
	Acenaphthylene	ND	10.0	ug/L	02/19/99	*HE
	Anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(b)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(k)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(ghi)perylene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Butyl benzyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethoxy)methane	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroisopropyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-ethylhexyl)phthalate	ND	10.0	ug/L	02/19/99	*HE
	4-Bromophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-3 (A-H)
Date Sampled.....: 02/12/99
Time Sampled.....: 08:45
Sample Matrix.....: Water

Laboratory Sample ID: 990482-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Carbazole	ND	10.0	ug/L	02/19/99	*HE
	4-Chloroaniline	ND	10.0	ug/L	02/19/99	*HE
	2-Chloronaphthalene	ND	10.0	ug/L	02/19/99	*HE
	4-Chlorophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE
	Chrysene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzo(a,h)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzofuran	ND	10.0	ug/L	02/19/99	*HE
	1,2-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,3-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,4-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	3,3-Dichlorobenzidine	ND	20.0	ug/L	02/19/99	*HE
	Diethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Dimethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-butyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-octyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	2,6-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	Fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Fluorene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobutadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorocyclopentadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachloroethane	ND	10.0	ug/L	02/19/99	*HE
	Indeno(1,2,3-cd)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Isophorone	ND	10.0	ug/L	02/19/99	*HE
	2-Methylnaphthalene	ND	10.0	ug/L	02/19/99	*HE
	Naphthalene	ND	10.0	ug/L	02/19/99	*HE
	o-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	m-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	p-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	Nitrobenzene	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodi-n-propylamine	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodiphenylamine	ND	10.0	ug/L	02/19/99	*HE
	Phenanthrene	ND	10.0	ug/L	02/19/99	*HE
	Pyrene	ND	10.0	ug/L	02/19/99	*HE
	1,2,4-Trichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	4-Chloro-3-methylphenol	ND	10.0	ug/L	02/19/99	*HE
	2-Chlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dichlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dimethylphenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methyl-4,6-dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methylphenol (o-cresol)	ND	10.0	ug/L	02/19/99	*HE
	3 & 4 Methylphenol (m&p cresol)	ND	10.0	ug/L	02/19/99	*HE
	2-Nitrophenol	ND	10.0	ug/L	02/19/99	*HE
	4-Nitrophenol	ND	50.0	ug/L	02/19/99	*HE
	Pentachlorophenol	ND	50.0	ug/L	02/19/99	*HE
	Phenol	ND	10.0	ug/L	02/19/99	*HE
	2,4,5-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-3 (A-H)
Date Sampled.....: 02/12/99
Time Sampled.....: 08:45
Sample Matrix.....: Water

Laboratory Sample ID: 990482-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	2,4,6-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: EPA 160.1 Batch.....: 2897 Analyst...: sps
Method Description.: Solids, Total Dissolved (TDS) Units.....: mg/L
Parameter.....: Solids, Total Dissolved (TDS)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<50						50	02/15/99 1350
MD	990480-1		1162			1176	1.2	R	20	02/15/99 1350

Test Method.....: SM 4500-CL B Batch.....: 3269 Analyst...: cmg
Method Description.: Chloride (argentometric) Units.....: mg/L
Parameter.....: Chloride

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<2						2	03/11/99 1400
LCS		WS990703	47		50.000000		94.0	%	90.0-110.0	03/11/99 1400
MD	990660-2		76			76	0.0	R	20	03/11/99 1400
MS	990660-2	WS990703	165		100.000000	76	89.0	%	80-120	03/11/99 1400

Test Method.....: SW-846 7740 Batch.....: 3273 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/10/99 1400
ICV		MS990128	0.0258		0.0250		103.2	%	90-110	03/10/99 1506
MB			<0.01						0.005	03/10/99 1613
LCS		MS990128	0.0267		0.0250		106.8	%	80-120	03/10/99 1719
MS	990482-1	MS990128	0.0219		0.0250	<0.01	87.6	%	75-125	03/10/99 1932
MSD	990482-1	MS990128	0.0170	0.0219	0.0250	<0.01	68.0	%	75-125	03/10/99 2038
							25.2	R	20	
CCB			<0.01						0.005	03/10/99 2144
CCV		MS990128	0.0244		0.0250		97.6	%	80-120	03/10/99 2251
CCB	31099 -2		<0.01						0.005	03/11/99 0528
CCV	31099 -2	MS990128	0.0207		0.0250		82.8	%	80-120	03/11/99 0635
PDS	990842-1	MS990128	0.0246		0.0250	<0.01	98.4	%	75-125	03/11/99 0741
PSD	990842-1	MS990128	0.0231	0.0246	0.0250	<0.01	92.4	%	75-125	03/11/99 0847
							6.3	R	20	
CCB	31099 -3		<0.01						0.005	03/11/99 0954
CCV	31099 -3	MS990128	0.0264		0.0250		105.6	%	90-110	03/11/99 1100

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00867						0.10	03/15/99 1324
ICV		MS990112	9.73339		10.0		97.3	%	90-110	03/15/99 1333
ISA		MS990095	96.65311		100.0		96.7	%	80-120	03/15/99 1344
ISB		MS990094	95.51260		100.0		95.5	%	80-120	03/15/99 1349
CCB			-0.07681						0.10	03/15/99 1416
CCV		MS990107	4.84232		5.000		96.8	%	90-110	03/15/99 1429
CCV		MS990107	4.87135		5.000		97.4	%	90-110	03/15/99 1533

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS00701341.1 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCB			0.02668						0.10	03/15/99 1559
CCB			0.00653						0.10	03/15/99 1658
CCV		MS990107	4.96395		5.000		99.3	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.10994		1.000	0.01534	109.5	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.13514	1.10994	1.000	0.01534	112.0	%	75-125	03/15/99 1739
							2.2	R	20	
CCB			0.01182						0.10	03/15/99 1814
CCV		MS990107	4.92190		5.000		98.4	%	90-110	03/15/99 1819
CCB			0.00287						0.10	03/15/99 1858
CCV		MS990107	4.98147		5.000		99.6	%	90-110	03/15/99 1902
MB			0.02977						0.10	03/15/99 1937
LCS		3010030999	2.09361		2.000		104.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86649		2.000	0.01552	92.5	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.11166	1.86649	2.000	0.01552	104.8	%	75-125	03/15/99 1955
							12.3	R	20	
CCB			0.04816						0.10	03/15/99 2026
CCV		MS990107	5.13870		5.000		102.8	%	90-110	03/15/99 2039

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00642						0.05	03/15/99 1324
ICV		MS990112	9.97749		10.0		99.8	%	90-110	03/15/99 1333
ISB		MS990094	0.23572		0.25		94.3	%	80-120	03/15/99 1349
CCB			-0.00642						0.05	03/15/99 1416
CCV		MS990107	4.88481		5.000		97.7	%	90-110	03/15/99 1429
CCV		MS990107	4.94053		5.000		98.8	%	90-110	03/15/99 1533
CCB			-0.00750						0.05	03/15/99 1559
CCB			-0.00750						0.05	03/15/99 1658
CCV		MS990107	5.01982		5.000		100.4	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.06718		1.000	-0.00428	107.1	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.07896	1.06718	1.000	-0.00428	108.3	%	75-125	03/15/99 1739
							1.1	R	20	
CCB			-0.00750						0.05	03/15/99 1814
CCV		MS990107	4.97696		5.000		99.5	%	90-110	03/15/99 1819
CCB			-0.00642						0.05	03/15/99 1858
CCV		MS990107	5.01875		5.000		100.4	%	90-110	03/15/99 1902
MB			-0.00642						0.05	03/15/99 1937
LCS		3010030999	1.98114		2.000		99.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	2.12150		2.000	0.37608	87.3	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.36151	2.12150	2.000	0.37608	99.3	%	75-125	03/15/99 1955
							10.7	R	20	
CCB			-0.00428						0.05	03/15/99 2026
CCV		MS990107	5.15482		5.000		103.1	%	90-110	03/15/99 2039
CCB			0.01068						0.05	03/15/99 2108
CCV		MS990107	5.04000		5.000		100.8	%	90-110	03/15/99 2115
MB			0.01091						0.05	03/15/99 2118
LCS		301503099	1.97208		2.00		98.6	%	80-120	03/15/99 2120
MS	990482-1	3015030999	2.22954		2.000	0.27144	97.9	%	75-125	03/15/99 2122

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MSD	990482-1	3015030999	2.16286	2.22954	2.000	0.27144	94.6	%	75-125	03/15/99 2124
							3.0	R	20	
CCB			0.02322						0.05	03/15/99 2129
CCV		MS990107	5.05793		5.000		101.2	%	90-110	03/15/99 2134

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00215						0.05	03/15/99 1324
ICV		MS990112	9.83657		10.0		98.4	%	90-110	03/15/99 1333
ISB		MS990094	0.23483		0.25		93.9	%	80-120	03/15/99 1349
CCB			-0.00372						0.05	03/15/99 1416
CCV		MS990108	5.08831		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.11872		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00600						0.05	03/15/99 1559
CCB			-0.00439						0.05	03/15/99 1658
CCV		MS990108	5.07135		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08548		1.000	-0.00351	108.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10097	1.08548	1.000	-0.00351	110.4	%	75-125	03/15/99 1739
							1.4	R	20	
CCB			-0.00410						0.05	03/15/99 1814
CCV		MS990108	5.11774		5.000		102.4	%	90-110	03/15/99 1832
CCB			-0.00292						0.05	03/15/99 1858
CCV		MS990108	5.11315		5.000		102.3	%	90-110	03/15/99 1912
MB			-0.00418						0.05	03/15/99 1937
LCS		3010030999	1.92115		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.85837		2.000	0.02183	91.8	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.89063	1.85837	2.000	0.02183	93.4	%	75-125	03/15/99 1955
							1.7	R	20	
CCB			-0.00610						0.05	03/15/99 2026
CCV		MS990108	5.27246		5.000		105.4	%	90-110	03/15/99 2044
MB			0.00252						0.05	03/15/99 2049
LCS		301503099	1.83784		2.00		91.9	%	80-120	03/15/99 2054
MS	990482-1	3015030999	1.83631		2.000	0.01572	91.0	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.84468	1.83631	2.000	0.01572	91.4	%	75-125	03/15/99 2101
							0.5	R	20	
CCB			-0.00238						0.05	03/15/99 2108
CCV		MS990108	4.90665		5.000		98.1	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.01622						0.05	03/15/99 1324
ICV		MS990112	9.73699		10.0		97.4	%	90-110	03/15/99 1333
ISA		MS990095	94.41921		100.0		94.4	%	80-120	03/15/99 1344

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ISB		MS990094	92.61569		100.0		92.6	%	80-120	03/15/99 1349
CCB			0.00718						0.05	03/15/99 1416
CCV		MS990108	5.08773		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.12198		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.01437						0.05	03/15/99 1559
CCB			-0.00267						0.05	03/15/99 1658
CCV		MS990108	5.07030		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.13224		1.000	0.05310	107.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.14611	1.13224	1.000	0.05310	109.3	%	75-125	03/15/99 1739
							1.2	R	20	
CCB			-0.01486						0.05	03/15/99 1814
CCV		MS990108	5.13707		5.000		102.7	%	90-110	03/15/99 1832
CCB			-0.01655						0.05	03/15/99 1858
CCV		MS990108	5.13406		5.000		102.7	%	90-110	03/15/99 1912
MB			0.06096						0.05	03/15/99 1937
LCS		3010030999	1.92146		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.87288		2.000	0.07158	90.1	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.91956	1.87288	2.000	0.07158	92.4	%	75-125	03/15/99 1955
							2.5	R	20	
CCB			0.00442						0.05	03/15/99 2026
CCV		MS990108	5.25509		5.000		105.1	%	90-110	03/15/99 2044
MB			-0.00153						0.05	03/15/99 2049
MS	990482-1	3015030999	6.16588		2.000	7.06424	-44.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	6.96977	6.16588	2.000	7.06424	-4.7	%	75-125	03/15/99 2101
							12.2	R	20	
CCB			0.31491						0.05	03/15/99 2108
CCV		MS990108	4.92815		5.000		98.6	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00329						0.05	03/15/99 1324
ICV		MS990112	9.81722		10.0		98.2	%	90-110	03/15/99 1333
ISB		MS990094	0.23854		0.25		95.4	%	80-120	03/15/99 1349
CCB			-0.00329						0.05	03/15/99 1416
CCV		MS990108	5.08862		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.11434		5.000		102.3	%	90-110	03/15/99 1548
CCB			-0.00290						0.05	03/15/99 1559
CCB			-0.00256						0.05	03/15/99 1658
CCV		MS990108	5.07150		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08456		1.000	-0.00097	108.6	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.09897	1.08456	1.000	-0.00097	110.0	%	75-125	03/15/99 1739
							1.3	R	20	
CCB			-0.00312						0.05	03/15/99 1814
CCV		MS990108	5.11117		5.000		102.2	%	90-110	03/15/99 1832
CCB			-0.00246						0.05	03/15/99 1858
CCV		MS990108	5.11126		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00219						0.05	03/15/99 1937
LCS		3010030999	1.91199		2.000		95.6	%	80-120	03/15/99 1941

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MS	990671-1	3010030999	2.02940		2.000	0.21127	90.9	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.06858	2.02940	2.000	0.21127	92.9	%	75-125	03/15/99 1955
							1.9	R	20	
CCB			-0.00284						0.05	03/15/99 2026
CCV		MS990108	5.25330		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00507						0.05	03/15/99 2049
LCS		301503099	1.81550		2.00		90.8	%	80-120	03/15/99 2054
MS	990482-1	3015030999	1.93977		2.000	0.16204	88.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.95457	1.93977	2.000	0.16204	89.6	%	75-125	03/15/99 2101
							0.8	R	20	
CCB			0.00460						0.05	03/15/99 2108
CCV		MS990108	4.85252		5.000		97.1	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00195						0.05	03/15/99 1324
ICV		MS990112	9.75665		10.0		97.6	%	90-110	03/15/99 1333
ISB		MS990094	0.22562		0.25		90.2	%	80-120	03/15/99 1349
CCB			-0.00130						0.05	03/15/99 1416
CCV		MS990108	5.08355		5.000		101.7	%	90-110	03/15/99 1446
CCV		MS990108	5.11973		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00194						0.05	03/15/99 1559
CCB			-0.00178						0.05	03/15/99 1658
CCV		MS990108	5.07307		5.000		101.5	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08019		1.000	-0.00016	108.0	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10130	1.08019	1.000	-0.00016	110.1	%	75-125	03/15/99 1739
							1.9	R	20	
CCB			-0.00147						0.05	03/15/99 1814
CCV		MS990108	5.10386		5.000		102.1	%	90-110	03/15/99 1832
CCB			-0.00147						0.05	03/15/99 1858
CCV		MS990108	5.10912		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00170						0.05	03/15/99 1937
LCS		3010030999	1.91418		2.000		95.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86398		2.000	0.01589	92.4	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.90246	1.86398	2.000	0.01589	94.3	%	75-125	03/15/99 1955
							2.0	R	20	
CCB			-0.00163						0.05	03/15/99 2026
CCV		MS990108	5.25274		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00515						0.05	03/15/99 2049
MS	990482-1	3015030999	1.81264		2.000	0.05038	88.1	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.82319	1.81264	2.000	0.05038	88.6	%	75-125	03/15/99 2101
							0.6	R	20	
CCB			0.00203						0.05	03/15/99 2108
CCV		MS990108	4.73552		5.000		94.7	%	90-110	03/15/99 2111

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990482 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 7740 Batch.....: 3339 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/15/99 1600
ICV		MS990140	0.0249		0.0250		99.6	%	90-110	03/15/99 1643
MS	990483-1	MS980135	0.02115			<0.01	84.6	%	75-125	03/15/99 2019
CCB			<0.01						0.005	03/15/99 2102
CCV		MS990140	0.02246		0.0250		89.8	%	90-110	03/15/99 2145
MSD	990483-1	MS990140	0.02032	0.02115	0.0250	<0.01	81.3	%	75-125	03/15/99 2229
							4.0	R	20	
CCB	31599 -2		<0.01						0.005	03/15/99 2312
CCV	31599 -2	MS990140	0.02155		0.0250		86.2	%	90-110	03/15/99 2355

Test Method.....: SW-846 6010B Batch.....: 3955 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.0183							04/15/99 0950
ICV		MS990112	9.795		10.0		98.0	%	90-110	04/15/99 0959
ISA		MS990095	97.06		100.0		97.1	%	80-120	04/15/99 1013
ISB		MS990094	96.86		100.0		96.9	%	80-120	04/15/99 1017
ISB		MS990094	95.76		100.0		95.8	%	80-120	04/15/99 1025
CCV		MS990107	4.779		5.000		95.6	%	90-110	04/15/99 1036
MB			0.0364							04/15/99 1044
LCS		3015030999	2.019		2.000		101.0	%	80-120	04/15/99 1050
MS	990482-1	3015030999	11.70		2.000	12.30	-30.0	%	75-125	04/15/99 1057
MSD	990482-1	3015030999	10.19	11.70	2.000	12.30	-105.5	%	75-125	04/15/99 1101
							13.8	R	20	
PDS	990482-1	PDS041599	15.79		4.000	12.30	87.2	%	75-125	04/15/99 1107
PSD	990482-1	PDS041599	15.99	15.79	4.000	12.30	92.2	%	75-125	04/15/99 1111
							1.3	R	20	
CCB			0.0046							04/15/99 1131
CCV		MS990107	4.601		5.000			%		04/15/99 1135

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

ND = Analyte Not Detected above the quantitation limit
Numerical values expressed in the "LIMITS/"DILUTION" column are Practical Quantitation Limits (PQL). A final result of "ND" should be considered as "less than the PQL" (<PQL) unless otherwise indicated.

The detection limits and units reported in the Quality Control (QC) Report may not coincide with the values reported in the Laboratory Test Results Report because the data presented in the QC Report may not account for sample preparation and dilutions performed.

The date and time analyzed on the QC Report reflects either the actual date and/or time of sample analysis or the date and/or time of analysis completion for a sample batch.

Results for soil samples are reported on a wet weight basis (unless otherwise indicated).

Cited Test Methods are obtained from the following documents:

EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, 1986 and Updates I, II, IIA, and IIB
Standard Methods for the Examination of Water and Wastewater, 14th Ed., 1976, 15th Ed., 1981, and 18th Ed., 1992
United Oil Processors (UOP) Manual of Laboratory Test Methods
Hach Handbook of Water Analysis, 1979

SUBCONTRACTED LABORATORY LOCATIONS

For analysis performed by a subcontract laboratory, an "*" and the designated laboratory code is indicated in the "TECHN" column of the Laboratory Test Results Report.

Core Laboratories:

Anaheim	* A N	Houston Environmental	* H E
Aurora	* A U	Houston Petroleum	* H P
Carrollton	* C R	Indianapolis	* I N
Casper	* C A	Long Beach	* L B
Corpus Christi	* C C	New Orleans	* N O
Edison	* E D	Valparaiso	* V P
Hollister	* H R	Other	* X X

QUALITY ASSURANCE REPORT CODES

NC = Not Calculable due to values lower than the reporting limit

BLANKS	REFERENCE STANDARDS	SPIKES	DUPLICATES
MB = Method Blank	CS = Calibration Standard	MS = Matrix Spike	MSD = Matrix Spike Dupl.
RB = Reagent Blank	RS = Reference Standard	PDS = Post-Digest Spike	SD = Sample Duplicate
IB = Instrument Blank	ICV = Initial Calib. Verification	BS = Blank Spike	MD = Method Duplicate
ICB = Initial Calib. Blank	CCV = Continuing Calib. Verification	SS = Surrogate Spike	
CCB = Cont. Calib. Blank	LCS = Laboratory Control Standard		

For organic parameters, the blank value reported in the QC section of the report is the lowest reportable limit for the method.

3645 Beglis Pkwy
Sulphur, LA 70663
(318) 583-4926

CHAIN OF CUSTODY RECORD

CORE LAB

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: NSR	PROJECT NAME/NUMBER: Bowen-Hobbs 007703.411
SEND REPORT TO: Russell Turner	BILLING INFORMATION
ADDRESS: 3300 Richmond Ave. Suite 400	BILL TO:
Houston, TX 77098	ADDRESS: Same
PHONE: (713)520-9100	PHONE:
FAX: (713) 520-6802	FAX: PO NO.:

LAB JOB NO. 010482

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	VOCs	SVOCs	Metals	Cl, Br	F, Alkalinity	Nitrate	TDS, Sulfate	Selenium (Field Filtered)	REMARKS / PRECAUTIONS
	MW 3A	2/12/99	8:45	H_2O		HCl	2	✓								Hold
	MW 3B	2/12/99	8:45			—	2		✓							Run SVOCs
	MW 3C	2/12/99	8:45			HNO_3	1			✓						Hold
	MW 3D	2/12/99	8:45			—	1				✓					Hold
	MW 3E	2/12/99	8:45			—	1					✓				Hold
	MW 3F	2/12/99	8:45			—	1						✓			Hold
	MW 3G	2/12/99	8:45			—	1							✓		Hold
	MW 3H	2/12/99	8:45			—	1								✓	Hold

SAMPLER: Christi Kiker

SHIPMENT METHOD: Fed Ex

AIRBILL NO: 802735010807

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

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Christi Kiker	2/12/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Christi Kiker / ENSR	TIME: 10:00AM	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Shalena Graham	2-13-99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Shalena Traham / Core	TIME: 1235	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA
1250 E. Gene Autry Way
Anaheim, CA 92805
(714) 937-1094 Fax (714) 937-1170

☐ Aurora, CO
10703 E. Bethany Drive
Aurora, CO 80014
(303) 751-1780 Fax (303) 751-1784

☐ Carson, CA
21730 S. Wilmington Ave. - Suite 201
Carson, CA 90810-1640
(310) 513-2031 Fax (310) 513-2035

☐ Casper, WY
420 W. First Street
Casper, WY 82601
(307) 235-5741 Fax (307) 266-1676

☐ Corpus Christi, TX
1733 N. Padre Island Drive
Corpus Christi, TX 78408
(512) 289-2673 Fax (512) 289-2471

☐ Edison, NJ
284 Raritan Center Parkway
Edison, NJ 08837
(732) 225-6700 Fax (732) 225-6777

☐ Houston, TX (Env)
6310 Rothway Drive
Houston, TX 77040
(713) 690-4444 Fax (713) 690-5646

☐ Houston, TX (Pet)
6210 Mosley Road
Houston, TX 77075
(713) 943-9776 Fax (713) 943-3846

☐ Indianapolis, IN
7726 Moller Road
Indianapolis, IN 46268
(317) 875-5894 Fax (317) 872-6189

☑ Lake Charles, LA
3645 Beglis Parkway
Sulphur, LA 70663
(318) 583-4926 Fax (318) 583-4929

☐ Valparaiso, IN
2400 Cumberland Drive
Valparaiso, IN 46383
(219) 464-2389 Fax (219) 462-2953

LAB COPY

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 990481

Prepared For:

ENSR
3000 RICHMOND AVE., STE 400
HOUSTON, TX 77098

Attention: RUSSELL TURNER

Date: 04/19/99

Tina T. Davis
Signature

04/19/99
Date

Name: Tina T. Davis

Title: Laboratory Manager

3645 Beglis Parkway
Sulphur, LA 70665

Phone: 318-583-4926
Fax: 318-583-4929

CORELAB

REVISED

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 990483

Prepared For:

ENSR
3000 RICHMOND AVE., STE 400
HOUSTON, TX 77098

Attention: RUSSELL TURNER

Date: 04/19/99

Tina T. Davis

Signature

04/19/99

Date

Name: Tina T. Davis

Title: Laboratory Manager

3645 Beglis Parkway
Sulphur, LA 70665

Phone: 318-583-4926
Fax: 318-583-4929

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990483

The revised report reflects the following changes:

SAMPLE ID:	PARAMETER	CHANGES MADE:
990483-0001	TOTAL SELENIUM: EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L
990483-0001	DISSOLVED SELENIUM EPA METHOD 7740	Detection limit changed from 0.005 to 0.01mg/L

Reviewed by:

Tina Davis

Tina Davis, Laboratory Manager — Date: 04/19/99

Mary Arnold

Mary Arnold, QA/QC Coordinator — Date: 04-19-99

CORE LABORATORIES

CASE NARRATIVE

CLIENT ID: ENSR

JOB NUMBER: 990483

ANALYSIS: METALS: EPA METHOD: SW-846 6010B

The revised report reflects the addition of the following metals analysis for sample 990483-0001(Client ID:MW-4 (A-H), as requested by the client.

aluminum(dissolved and total)
iron(dissolved and total)
vanadium(dissolved and total)

Reviewed by:

Tina Davis, Laboratory Manager — Date: 04/16/99

Mary Arnold, QA/QC Coordinator — Date: 04/16/99

CORELAB

REVISED

CORE LABORATORIES

SAMPLE INFORMATION
Date: 04/19/99

Job Number.: 990483
Customer ..: ENSR
Attn.....: RUSSELL TURNER

Project Number.....: 99999910
Customer Project ID....: BOWEN-HOBBS007013411
Project Description....: Walk in Project

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
990483-1	MW-4 (A-H)	Water	02/12/99	08:00	02/13/99	12:35
990483-2	TRIP BLANK	Water			02/13/99	12:35

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-4 (A-H)
Date Sampled.....: 02/12/99
Time Sampled.....: 08:00
Sample Matrix.....: Water

Laboratory Sample ID: 990483-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SM 4500-CL B	Chloride	300	20	mg/L	03/11/99	cmg
EPA 160.1	Solids, Total Dissolved (TDS)	1100	50	mg/L	02/15/99	sps
SW-846 7740	Selenium (Se)	<0.01	0.01	mg/L	03/11/99	bt
SW-846 7740	Selenium (Se), Diss.	<0.01	0.01	mg/L	03/15/99	bt
SW-846 3015	Acid Digestion, Total Metals	Complete		mg/L	03/09/99	rl
SW-846 3015	Acid Digestion, Total Metals (GFAA)	Complete		mg/L	03/09/99	rl
	Filter sample prior to analysis	Complete			02/15/99	rl
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al)	246	0.10	mg/L	04/15/99	bt
	Barium (Ba)	5.24	0.05	mg/L	03/15/99	bt
	Chromium (Cr)	0.30	0.05	mg/L	03/15/99	bt
	Iron (Fe)	131	0.05	mg/L	04/15/99	bt
	Manganese (Mn)	2.45	0.05	mg/L	03/15/99	bt
	Vanadium (V)	0.78	0.05	mg/L	03/15/99	bt
SW-846 6010B	Metals Analysis (ICAP)					
	Aluminum (Al), Diss.	0.08	0.05	mg/L	03/15/99	bt
	Barium (Ba), Diss.	0.07	0.05	mg/L	03/15/99	bt
	Chromium (Cr), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Iron (Fe), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Manganese (Mn), Diss.	<0.05	0.05	mg/L	03/15/99	bt
	Vanadium (V), Diss.	<0.05	0.05	mg/L	03/15/99	bt
SW-846 3510B	Extraction (Sep. Funnel) - Semivolatiles					
	Separatory Funnel Liq/Liq Extraction	complete			02/18/99	*HE
SW-846 8270C	Semivolatile Organics					
	Acenaphthene	ND	10.0	ug/L	02/19/99	*HE
	Acenaphthylene	ND	10.0	ug/L	02/19/99	*HE
	Anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(b)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(k)fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(ghi)perylene	ND	10.0	ug/L	02/19/99	*HE
	Benzo(a)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Butyl benzyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethoxy)methane	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroethyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-chloroisopropyl)ether	ND	10.0	ug/L	02/19/99	*HE
	Bis(2-ethylhexyl)phthalate	ND	10.0	ug/L	02/19/99	*HE
	4-Bromophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-4 (A-H)
Date Sampled.....: 02/12/99
Time Sampled.....: 08:00
Sample Matrix.....: Water

Laboratory Sample ID: 990483-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Carbazole	ND	10.0	ug/L	02/19/99	*HE
	4-Chloroaniline	ND	10.0	ug/L	02/19/99	*HE
	2-Chloronaphthalene	ND	10.0	ug/L	02/19/99	*HE
	4-Chlorophenyl phenyl ether	ND	10.0	ug/L	02/19/99	*HE
	Chrysene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzo(a,h)anthracene	ND	10.0	ug/L	02/19/99	*HE
	Dibenzofuran	ND	10.0	ug/L	02/19/99	*HE
	1,2-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,3-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	1,4-Dichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	3,3-Dichlorobenzidine	ND	20.0	ug/L	02/19/99	*HE
	Diethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Dimethyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-butyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	Di-n-octyl phthalate	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	2,6-Dinitrotoluene	ND	10.0	ug/L	02/19/99	*HE
	Fluoranthene	ND	10.0	ug/L	02/19/99	*HE
	Fluorene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorobutadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachlorocyclopentadiene	ND	10.0	ug/L	02/19/99	*HE
	Hexachloroethane	ND	10.0	ug/L	02/19/99	*HE
	Indeno(1,2,3-cd)pyrene	ND	10.0	ug/L	02/19/99	*HE
	Isophorone	ND	10.0	ug/L	02/19/99	*HE
	2-Methylnaphthalene	ND	10.0	ug/L	02/19/99	*HE
	Naphthalene	ND	10.0	ug/L	02/19/99	*HE
	o-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	m-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	p-Nitroaniline	ND	10.0	ug/L	02/19/99	*HE
	Nitrobenzene	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodi-n-propylamine	ND	10.0	ug/L	02/19/99	*HE
	n-Nitrosodiphenylamine	ND	10.0	ug/L	02/19/99	*HE
	Phenanthrene	ND	10.0	ug/L	02/19/99	*HE
	Pyrene	ND	10.0	ug/L	02/19/99	*HE
	1,2,4-Trichlorobenzene	ND	10.0	ug/L	02/19/99	*HE
	4-Chloro-3-methylphenol	ND	10.0	ug/L	02/19/99	*HE
	2-Chlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dichlorophenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dimethylphenol	ND	10.0	ug/L	02/19/99	*HE
	2,4-Dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methyl-4,6-dinitrophenol	ND	50.0	ug/L	02/19/99	*HE
	2-Methylphenol (o-cresol)	ND	10.0	ug/L	02/19/99	*HE
	3 & 4 Methylphenol (m&p cresol)	ND	10.0	ug/L	02/19/99	*HE
	2-Nitrophenol	ND	10.0	ug/L	02/19/99	*HE
	4-Nitrophenol	ND	50.0	ug/L	02/19/99	*HE
	Pentachlorophenol	ND	50.0	ug/L	02/19/99	*HE
	Phenol	ND	10.0	ug/L	02/19/99	*HE
	2,4,5-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Customer Sample ID: MW-4 (A-H)
Date Sampled.....: 02/12/99
Time Sampled.....: 08:00
Sample Matrix.....: Water

Laboratory Sample ID: 990483-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	2,4,6-Trichlorophenol	ND	10.0	ug/L	02/19/99	*HE

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: EPA 160.1 Batch.....: 2897 Analyst...: sps
Method Description.: Solids, Total Dissolved (TDS) Units.....: mg/L
Parameter.....: Solids, Total Dissolved (TDS)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<50						50	02/15/99 1350
MD	990480-1		1162			1176	1.2	R	20	02/15/99 1350

Test Method.....: SM 4500-CL B Batch.....: 3269 Analyst...: cmg
Method Description.: Chloride (argentometric) Units.....: mg/L
Parameter.....: Chloride

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<2						2	03/11/99 1400
LCS		WS990703	47		50.000000		94.0	%	90.0-110.0	03/11/99 1400
MD	990660-2		76			76	0.0	R	20	03/11/99 1400
MS	990660-2	WS990703	165		100.000000	76	89.0	%	80-120	03/11/99 1400

Test Method.....: SW-846 7740 Batch.....: 3273 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/10/99 1400
ICV		MS990128	0.0258		0.0250		103.2	%	90-110	03/10/99 1506
MB			<0.01						0.005	03/10/99 1613
LCS		MS990128	0.0267		0.0250		106.8	%	80-120	03/10/99 1719
MS	990482-1	MS990128	0.0219		0.0250	<0.01	87.6	%	75-125	03/10/99 1932
MSD	990482-1	MS990128	0.0170	0.0219	0.0250	<0.01	68.0	%	75-125	03/10/99 2038
							25.2	R	20	
CCB			<0.01						0.005	03/10/99 2144
CCV		MS990128	0.0244		0.0250		97.6	%	80-120	03/10/99 2251
CCB	31099 -2		<0.01						0.005	03/11/99 0528
CCV	31099 -2	MS990128	0.0207		0.0250		82.8	%	80-120	03/11/99 0635
PDS	990842-1	MS990128	0.0246		0.0250	<0.01	98.4	%	75-125	03/11/99 0741
PSD	990842-1	MS990128	0.0231	0.0246	0.0250	<0.01	92.4	%	75-125	03/11/99 0847
							6.3	R	20	
CCB	31099 -3		<0.01						0.005	03/11/99 0954
CCV	31099 -3	MS990128	0.0264		0.0250		105.6	%	90-110	03/11/99 1100

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00867						0.10	03/15/99 1324
ICV		MS990112	9.73339		10.0		97.3	%	90-110	03/15/99 1333
ISA		MS990095	96.65311		100.0		96.7	%	80-120	03/15/99 1344
ISB		MS990094	95.51260		100.0		95.5	%	80-120	03/15/99 1349
CCB			-0.07681						0.10	03/15/99 1416
CCV		MS990107	4.84232		5.000		96.8	%	90-110	03/15/99 1429
CCV		MS990107	4.87135		5.000		97.4	%	90-110	03/15/99 1533

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCB			0.02668						0.10	03/15/99 1559
CCB			0.00653						0.10	03/15/99 1658
CCV		MS990107	4.96395		5.000		99.3	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.10994		1.000	0.01534	109.5	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.13514	1.10994	1.000	0.01534	112.0	%	75-125	03/15/99 1739
							2.2	R	20	
CCB			0.01182						0.10	03/15/99 1814
CCV		MS990107	4.92190		5.000		98.4	%	90-110	03/15/99 1819
CCB			0.00287						0.10	03/15/99 1858
CCV		MS990107	4.98147		5.000		99.6	%	90-110	03/15/99 1902
MB			0.02977						0.10	03/15/99 1937
LCS		3010030999	2.09361		2.000		104.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86649		2.000	0.01552	92.5	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.11166	1.86649	2.000	0.01552	104.8	%	75-125	03/15/99 1955
							12.3	R	20	
CCB			0.04816						0.10	03/15/99 2026
CCV		MS990107	5.13870		5.000		102.8	%	90-110	03/15/99 2039

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00642						0.05	03/15/99 1324
ICV		MS990112	9.97749		10.0		99.8	%	90-110	03/15/99 1333
ISB		MS990094	0.23572		0.25		94.3	%	80-120	03/15/99 1349
CCB			-0.00642						0.05	03/15/99 1416
CCV		MS990107	4.88481		5.000		97.7	%	90-110	03/15/99 1429
CCV		MS990107	4.94053		5.000		98.8	%	90-110	03/15/99 1533
CCB			-0.00750						0.05	03/15/99 1559
CCB			-0.00750						0.05	03/15/99 1658
CCV		MS990107	5.01982		5.000		100.4	%	90-110	03/15/99 1703
MS	990799-1	PDS031599	1.06718		1.000	-0.00428	107.1	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.07896	1.06718	1.000	-0.00428	108.3	%	75-125	03/15/99 1739
							1.1	R	20	
CCB			-0.00750						0.05	03/15/99 1814
CCV		MS990107	4.97696		5.000		99.5	%	90-110	03/15/99 1819
CCB			-0.00642						0.05	03/15/99 1858
CCV		MS990107	5.01875		5.000		100.4	%	90-110	03/15/99 1902
MB			-0.00642						0.05	03/15/99 1937
LCS		3010030999	1.98114		2.000		99.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	2.12150		2.000	0.37608	87.3	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.36151	2.12150	2.000	0.37608	99.3	%	75-125	03/15/99 1955
							10.7	R	20	
CCB			-0.00428						0.05	03/15/99 2026
CCV		MS990107	5.15482		5.000		103.1	%	90-110	03/15/99 2039
CCB			0.01068						0.05	03/15/99 2108
CCV		MS990107	5.04000		5.000		100.8	%	90-110	03/15/99 2115
MB			0.01091						0.05	03/15/99 2118
LCS		301503099	1.97208		2.00		98.6	%	80-120	03/15/99 2120
MS	990482-1	3015030999	2.22954		2.000	0.27144	97.9	%	75-125	03/15/99 2122

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MSD	990482-1	3015030999	2.16286	2.22954	2.000	0.27144	94.6	%	75-125	03/15/99 2124
							3.0	R	20	
CCB			0.02322						0.05	03/15/99 2129
CCV		MS990107	5.05793		5.000		101.2	%	90-110	03/15/99 2134

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00215						0.05	03/15/99 1324
ICV		MS990112	9.83657		10.0		98.4	%	90-110	03/15/99 1333
ISB		MS990094	0.23483		0.25		93.9	%	80-120	03/15/99 1349
CCB			-0.00372						0.05	03/15/99 1416
CCV		MS990108	5.08831		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.11872		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00600						0.05	03/15/99 1559
CCB			-0.00439						0.05	03/15/99 1658
CCV		MS990108	5.07135		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08548		1.000	-0.00351	108.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10097	1.08548	1.000	-0.00351	110.4	%	75-125	03/15/99 1739
							1.4	R	20	
CCB			-0.00410						0.05	03/15/99 1814
CCV		MS990108	5.11774		5.000		102.4	%	90-110	03/15/99 1832
CCB			-0.00292						0.05	03/15/99 1858
CCV		MS990108	5.11315		5.000		102.3	%	90-110	03/15/99 1912
MB			-0.00418						0.05	03/15/99 1937
LCS		3010030999	1.92115		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.85837		2.000	0.02183	91.8	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.89063	1.85837	2.000	0.02183	93.4	%	75-125	03/15/99 1955
							1.7	R	20	
CCB			-0.00610						0.05	03/15/99 2026
CCV		MS990108	5.27246		5.000		105.4	%	90-110	03/15/99 2044
MB			0.00252						0.05	03/15/99 2049
LCS		301503099	1.83784		2.00		91.9	%	80-120	03/15/99 2054
MS	990482-1	3015030999	1.83631		2.000	0.01572	91.0	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.84468	1.83631	2.000	0.01572	91.4	%	75-125	03/15/99 2101
							0.5	R	20	
CCB			-0.00238						0.05	03/15/99 2108
CCV		MS990108	4.90665		5.000		98.1	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.01622						0.05	03/15/99 1324
ICV		MS990112	9.73699		10.0		97.4	%	90-110	03/15/99 1333
ISA		MS990095	94.41921		100.0		94.4	%	80-120	03/15/99 1344

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ISB		MS990094	92.61569		100.0		92.6	%	80-120	03/15/99 1349
CCB			0.00718						0.05	03/15/99 1416
CCV		MS990108	5.08773		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.12198		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.01437						0.05	03/15/99 1559
CCB			-0.00267						0.05	03/15/99 1658
CCV		MS990108	5.07030		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.13224		1.000	0.05310	107.9	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.14611	1.13224	1.000	0.05310	109.3	%	75-125	03/15/99 1739
							1.2	R	20	
CCB			-0.01486						0.05	03/15/99 1814
CCV		MS990108	5.13707		5.000		102.7	%	90-110	03/15/99 1832
CCB			-0.01655						0.05	03/15/99 1858
CCV		MS990108	5.13406		5.000		102.7	%	90-110	03/15/99 1912
MB			0.06096						0.05	03/15/99 1937
LCS		3010030999	1.92146		2.000		96.1	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.87288		2.000	0.07158	90.1	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.91956	1.87288	2.000	0.07158	92.4	%	75-125	03/15/99 1955
							2.5	R	20	
CCB			0.00442						0.05	03/15/99 2026
CCV		MS990108	5.25509		5.000		105.1	%	90-110	03/15/99 2044
MB			-0.00153						0.05	03/15/99 2049
MS	990482-1	3015030999	6.16588		2.000	7.06424	-44.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	6.96977	6.16588	2.000	7.06424	-4.7	%	75-125	03/15/99 2101
							12.2	R	20	
CCB			0.31491						0.05	03/15/99 2108
CCV		MS990108	4.92815		5.000		98.6	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00329						0.05	03/15/99 1324
ICV		MS990112	9.81722		10.0		98.2	%	90-110	03/15/99 1333
ISB		MS990094	0.23854		0.25		95.4	%	80-120	03/15/99 1349
CCB			-0.00329						0.05	03/15/99 1416
CCV		MS990108	5.08862		5.000		101.8	%	90-110	03/15/99 1446
CCV		MS990108	5.11434		5.000		102.3	%	90-110	03/15/99 1548
CCB			-0.00290						0.05	03/15/99 1559
CCB			-0.00256						0.05	03/15/99 1658
CCV		MS990108	5.07150		5.000		101.4	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08456		1.000	-0.00097	108.6	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.09897	1.08456	1.000	-0.00097	110.0	%	75-125	03/15/99 1739
							1.3	R	20	
CCB			-0.00312						0.05	03/15/99 1814
CCV		MS990108	5.11117		5.000		102.2	%	90-110	03/15/99 1832
CCB			-0.00246						0.05	03/15/99 1858
CCV		MS990108	5.11126		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00219						0.05	03/15/99 1937
LCS		3010030999	1.91199		2.000		95.6	%	80-120	03/15/99 1941

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MS	990671-1	3010030999	2.02940		2.000	0.21127	90.9	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	2.06858	2.02940	2.000	0.21127	92.9	%	75-125	03/15/99 1955
							1.9	R	20	
CCB			-0.00284						0.05	03/15/99 2026
CCV		MS990108	5.25330		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00507						0.05	03/15/99 2049
LCS		301503099	1.81550		2.00		90.8	%	80-120	03/15/99 2054
MS	990482-1	3015030999	1.93977		2.000	0.16204	88.9	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.95457	1.93977	2.000	0.16204	89.6	%	75-125	03/15/99 2101
							0.8	R	20	
CCB			0.00460						0.05	03/15/99 2108
CCV		MS990108	4.85252		5.000		97.1	%	90-110	03/15/99 2111

Test Method.....: SW-846 6010B Batch.....: 3319 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			-0.00195						0.05	03/15/99 1324
ICV		MS990112	9.75665		10.0		97.6	%	90-110	03/15/99 1333
ISB		MS990094	0.22562		0.25		90.2	%	80-120	03/15/99 1349
CCB			-0.00130						0.05	03/15/99 1416
CCV		MS990108	5.08355		5.000		101.7	%	90-110	03/15/99 1446
CCV		MS990108	5.11973		5.000		102.4	%	90-110	03/15/99 1548
CCB			-0.00194						0.05	03/15/99 1559
CCB			-0.00178						0.05	03/15/99 1658
CCV		MS990108	5.07307		5.000		101.5	%	90-110	03/15/99 1715
MS	990799-1	PDS031599	1.08019		1.000	-0.00016	108.0	%	75-125	03/15/99 1734
MSD	990799-1	PDS031599	1.10130	1.08019	1.000	-0.00016	110.1	%	75-125	03/15/99 1739
							1.9	R	20	
CCB			-0.00147						0.05	03/15/99 1814
CCV		MS990108	5.10386		5.000		102.1	%	90-110	03/15/99 1832
CCB			-0.00147						0.05	03/15/99 1858
CCV		MS990108	5.10912		5.000		102.2	%	90-110	03/15/99 1912
MB			-0.00170						0.05	03/15/99 1937
LCS		3010030999	1.91418		2.000		95.7	%	80-120	03/15/99 1941
MS	990671-1	3010030999	1.86398		2.000	0.01589	92.4	%	75-125	03/15/99 1950
MSD	990671-1	3010030999	1.90246	1.86398	2.000	0.01589	94.3	%	75-125	03/15/99 1955
							2.0	R	20	
CCB			-0.00163						0.05	03/15/99 2026
CCV		MS990108	5.25274		5.000		105.1	%	90-110	03/15/99 2044
MB			0.00515						0.05	03/15/99 2049
MS	990482-1	3015030999	1.81264		2.000	0.05038	88.1	%	75-125	03/15/99 2059
MSD	990482-1	3015030999	1.82319	1.81264	2.000	0.05038	88.6	%	75-125	03/15/99 2101
							0.6	R	20	
CCB			0.00203						0.05	03/15/99 2108
CCV		MS990108	4.73552		5.000		94.7	%	90-110	03/15/99 2111

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 7740 Batch.....: 3339 Analyst...: bt
Method Description.: Selenium (GFAA) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			<0.01						0.005	03/15/99 1600
ICV		MS990140	0.0249		0.0250		99.6	%	90-110	03/15/99 1643
MS	990483-1	MS980135	0.02115			<0.01	84.6	%	75-125	03/15/99 2019
CCB			<0.01						0.005	03/15/99 2102
CCV		MS990140	0.02246		0.0250		89.8	%	90-110	03/15/99 2145
MSD	990483-1	MS990140	0.02032	0.02115	0.0250	<0.01	81.3	%	75-125	03/15/99 2229
							4.0	R	20	
CCB	31599 -2		<0.01						0.005	03/15/99 2312
CCV	31599 -2	MS990140	0.02155		0.0250		86.2	%	90-110	03/15/99 2355

Test Method.....: SW-846 6010B Batch.....: 3952 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.00126						0.1	04/15/99 0950
ICV		MS990112	9.75853		10.0		97.6	%	90-110	04/15/99 0959
ISA		MS990095	94.38322		100.0		94.4	%	80-120	04/15/99 1013
ISB		MS990094	94.29694		100.0		94.3	%	80-120	04/15/99 1017
ISB		MS990094	91.16670		100.0		91.2	%	80-120	04/15/99 1025
CCV		MS990108	5.02595		5.000		100.5	%	90-110	04/15/99 1040
MB			0.01158						0.1	04/15/99 1044
LCS		3015030999	1.97941		2.000		99.0	%	80-120	04/15/99 1050
MS	990482-1	3015030999	7.16600		2.000	7.32795	-8.1	%	75-125	04/15/99 1057
MSD	990482-1	3015030999	6.42611	7.16600	2.000	7.32795	-45.1	%	75-125	04/15/99 1101
							10.9	R	20	
PDS	990482-1	PDS041599	10.78719		4.000	7.32795	86.5	%	75-125	04/15/99 1107
PSD	990482-1	PDS041599	11.00492	10.78719	4.000	7.32795	91.9	%	75-125	04/15/99 1111
							2.0	R	20	
CCB			0.00867						0.1	04/15/99 1131
CCV		MS990108	4.91976		5.000		98.4	%	90-110	04/15/99 1140
LCS		3051040199	4.33078		5.000		86.6	%	80-120	04/15/99 1148
CCB			-0.00021						0.1	04/15/99 1353
CCB			-0.00021						0.1	04/15/99 1353
CCV		MS990108	4.93068		5.000		98.6	%	90-110	04/15/99 1450
MB			0.04007						0.1	04/15/99 1454
LCS		3010040699	2.04458		2.000		102.2	%	80-120	04/15/99 1458
MS	991030-1	3010040699	1.87727		2.000	0.11527	88.1	%	75-125	04/15/99 1507
MSD	991030-1	3010040699	1.90949	1.87727	2.000	0.11527	89.7	%	75-125	04/15/99 1511
							1.7	R	20	
EB			0.05812						0.1	04/15/99 1522
CCB			0.00163						0.1	04/15/99 1526
CCV		MS990108	4.78351		5.000		95.7	%	90-110	04/15/99 1535
CCB			0.07029						0.1	04/15/99 1556
CCV		MS990108	4.85325		5.000		97.1	%	90-110	04/15/99 1618

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990483 Date: 04/19/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBBS007013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 3955 Analyst...: bt
Method Description.: Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Aluminum (Al)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB			0.0183							04/15/99 0950
ICV		MS990112	9.795		10.0		98.0	%	90-110	04/15/99 0959
ISA		MS990095	97.06		100.0		97.1	%	80-120	04/15/99 1013
ISB		MS990094	96.86		100.0		96.9	%	80-120	04/15/99 1017
ISB		MS990094	95.76		100.0		95.8	%	80-120	04/15/99 1025
CCV		MS990107	4.779		5.000		95.6	%	90-110	04/15/99 1036
MB			0.0364							04/15/99 1044
LCS		3015030999	2.019		2.000		101.0	%	80-120	04/15/99 1050
MS	990482-1	3015030999	11.70		2.000	12.30	-30.0	%	75-125	04/15/99 1057
MSD	990482-1	3015030999	10.19	11.70	2.000	12.30	-105.5	%	75-125	04/15/99 1101
							13.8	R	20	
PDS	990482-1	PDS041599	15.79		4.000	12.30	87.2	%	75-125	04/15/99 1107
PSD	990482-1	PDS041599	15.99	15.79	4.000	12.30	92.2	%	75-125	04/15/99 1111
							1.3	R	20	
CCB			0.0046							04/15/99 1131
CCV		MS990107	4.601		5.000			%		04/15/99 1135

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

ND = Analyte Not Detected above the quantitation limit
Numerical values expressed in the "LIMITS/*DILUTION" column are Practical Quantitation Limits (PQL). A final result of "ND" should be considered as "less than the PQL" (<PQL) unless otherwise indicated.

The detection limits and units reported in the Quality Control (QC) Report may not coincide with the values reported in the Laboratory Test Results Report because the data presented in the QC Report may not account for sample preparation and dilutions performed.

The date and time analyzed on the QC Report reflects either the actual date and/or time of sample analysis or the date and/or time of analysis completion for a sample batch.

Results for soil samples are reported on a wet weight basis (unless otherwise indicated).

Cited Test Methods are obtained from the following documents:
EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, 1986 and Updates I, II, IIA, and IIB
Standard Methods for the Examination of Water and Wastewater, 14th Ed., 1976, 15th Ed., 1981, and 18th Ed., 1992
United Oil Processors (UOP) Manual of Laboratory Test Methods
Hach Handbook of Water Analysis, 1979

SUBCONTRACTED LABORATORY LOCATIONS

For analysis performed by a subcontract laboratory, an "*" and the designated laboratory code is indicated in the "TECHN" column of the Laboratory Test Results Report.

Core Laboratories:

Anaheim	* A N	Houston Environmental	* H E
Aurora	* A U	Houston Petroleum	* H P
Carrollton	* C R	Indianapolis	* I N
Casper	* C A	Long Beach	* L B
Corpus Christi	* C C	New Orleans	* N O
Edison	* E D	Valparaiso	* V P
Hollister	* H R	Other	* X X

QUALITY ASSURANCE REPORT CODES

NC = Not Calculable due to values lower than the reporting limit

BLANKS	REFERENCE STANDARDS	SPIKES	DUPLICATES
MB = Method Blank	CS = Calibration Standard	MS = Matrix Spike	MSD = Matrix Spike Dupl.
RB = Reagent Blank	RS = Reference Standard	PDS = Post-Digest Spike	SD = Sample Duplicate
IB = Instrument Blank	ICV = Initial Calib. Verification	BS = Blank Spike	MD = Method Duplicate
ICB = Initial Calib. Blank	CCV = Continuing Calib. Verification	SS = Surrogate Spike	
CCB = Cont. Calib. Blank	LCS = Laboratory Control Standard		

For organic parameters, the blank value reported in the QC section of the report is the lowest reportable limit for the method.

3645 Beglis Pkwy
Sulphur, LA 70663
(318) 583-4926

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION
COMPANY: ENSR	PROJECT NAME/NUMBER: Bowen-Hobbs 007703-416	
SEND REPORT TO: Russell Turner	**BILLING INFORMATION**	
ADDRESS: 3000 Richmond Ave Suite 400 Houston, TX 77098	BILL TO: ADDRESS: Same	
PHONE: (713) 520-7100	PHONE:	
FAX: (713) 520-6802	FAX: PO NO.:	

LAB JOB NO. 991483

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRESERV.	NUMBER OF CONTAINERS	VOCs	SVOCs	Metals	Cl, Br	F, Alkalinity	Nitrate	TDS, sulfate	Selenium (field filtered)	REMARKS / PRECAUTIONS
	MW-4A	2/12/99	8:00 AM	H_2O	HCl	2	✓								Hold
	MW-4B	2/12/99	8:00		—	2		✓							Run SVOCs
	MW-4C	2/12/99	8:00		HNO_3	1			✓						Hold
	MW-4D	2/12/99	8:00		—	1				✓					Hold
	MW-4E	2/12/99	8:00		—	1					✓				Hold
	MW-4F	2/12/99	8:00		—	1						✓			Hold
	MW-4G	2/12/99	8:00		—	1							✓		Hold
	MW-4H	2/12/99	8:00		—	1								✓	Hold

SAMPLER: Christi Kiker

SHIPMENT METHOD: Fed Ex

AIRBILL NO.: 802735010878

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

1. RELINQUISHED BY: SIGNATURE: Christi Kiker	DATE: 2/12/99	2. RELINQUISHED BY: SIGNATURE:	DATE	3. RELINQUISHED BY: SIGNATURE:	DATE
PRINTED NAME/COMPANY: Christi Kiker/ENSR	TIME: 10:00AM	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY: SIGNATURE: Melanie Jackson	DATE: 2/13/99	2. RECEIVED BY: SIGNATURE:	DATE	3. RECEIVED BY: SIGNATURE:	DATE
PRINTED NAME/COMPANY: Melanie Jackson/Fed Ex	TIME: 1235	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA
1250 E. Gene Autry Way
Anaheim, CA 92805
(714) 937-1094 Fax (714) 937-1170

☐ Aurora, CO
10703 E. Bethany Drive
Aurora, CO 80014
(303) 751-1780 Fax (303) 751-1784

☐ Carson, CA
21730 S. Wilmington Ave. - Suite 201
Carson, CA 90810-1640
(310) 513-2031 Fax (310) 513-2035

☐ Casper, WY
420 W. First Street
Casper, WY 82601
(307) 235-5741 Fax (307) 266-1676

☐ Corpus Christi, TX
1733 N. Padre Island Drive
Corpus Christi, TX 78408
(512) 289-2673 Fax (512) 289-2471

☐ Edison, NJ
284 Raritan Center Parkway
Edison, NJ 08837
(732) 225-6700 Fax (732) 225-6777

☐ Houston, TX (Env)
6310 Rothway Drive
Houston, TX 77040
(713) 690-4444 Fax (713) 690-5646

☐ Houston, TX (Pet)
8210 Mosley Road
Houston, TX 77075
(713) 943-9776 Fax (713) 943-3846

☐ Indianapolis, IN
7726 Moller Road
Indianapolis, IN 46268
(317) 875-5894 Fax (317) 872-6189

☑ Lake Charles, LA
3645 Beglis Parkway
Sulphur, LA 70663
(318) 583-4926 Fax (318) 583-4929

☐ Valparaiso, IN
2400 Cumberland Drive
Valparaiso, IN 46383
(219) 464-2389 Fax (219) 462-2953

LAB COPY

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 990484

Prepared For:

ENSR
3000 RICHMOND AVE., STE 400
HOUSTON, TX 77098

Attention: RUSSELL TURNER

Date: 03/22/99

Tina Davis

Signature

03-22-99

Date

Name: Tina Davis

Title: Laboratory Manager

3645 Beglis Parkway
Sulphur, LA 70665

Phone: 318-583-4926
Fax: 318-583-4929

CORE LABORATORIES

SAMPLE INFORMATION
Date: 03/22/99

Job Number.: 990484
Customer ..: ENSR
Attn.....: RUSSELL TURNER

Project Number.....: 99999910
Customer Project ID....: BOWEN-HOBB0077013411
Project Description....: Walk in Project

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
990484-1	DC-1A	Soil	02/12/99	07:00	02/13/99	12:35
990484-2	DC-1B	Soil	02/12/99	07:00	02/13/99	12:35
990484-3	DC-1C	Soil	02/12/99	07:00	02/13/99	12:35
990484-4	DC-2	Water	02/12/99	07:00	02/13/99	12:35

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Customer Sample ID: DC-1A
Date Sampled.....: 02/12/99
Time Sampled.....: 07:00
Sample Matrix.....: Soil

Laboratory Sample ID: 990484-1
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 418.1	Total Recoverable Petroleum Hydrocarbons, Solid	40	10	mg/Kg	02/16/99	cmg

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Customer Sample ID: DC-1B
Date Sampled.....: 02/12/99
Time Sampled.....: 07:00
Sample Matrix.....: Soil

Laboratory Sample ID: 990484-2
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 418.1	Total Recoverable Petroleum Hydrocarbons, Solid	40	10	mg/Kg	02/16/99	cmg

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Customer Sample ID: DC-1C
Date Sampled.....: 02/12/99
Time Sampled.....: 07:00
Sample Matrix.....: Soil

Laboratory Sample ID: 990484-3
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 418.1	Total Recoverable Petroleum Hydrocarbons, Solid	40	10	mg/Kg	02/16/99	cmg

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Customer Sample ID: DC-2
Date Sampled.....: 02/12/99
Time Sampled.....: 07:00
Sample Matrix.....: Water

Laboratory Sample ID: 990484-4
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 9010A	Reactivity, Cyanide	<0.1	0.1	mg/Kg	02/16/99	cmg
SW-846 9030	Reactivity, Sulfide	<20	20	mg/Kg	02/16/99	cmg
SW-846 3010	Acid Digestion, Total Metals	Complete			02/19/99	rl
SW-846 1311	TCLP Nonvolatile Extraction	Complete			02/16/99	rl
SW-846 1311	TCLP Volatile ZHE Extraction	Complete			02/16/99	rl
SW-846 9040	Corrosivity (pH-Liquids)	7.6	0.1	pH Units	02/16/99	sps
SW-846 1010	Ignitability	Negative		Pos/Neg	02/19/99	jlw
SW-846 6010B	TCLP Metals Analysis (ICAP)					
	Arsenic (As)	<0.05	0.05	mg/L	02/19/99	bt
	Barium (Ba)	<0.5	0.5	mg/L	02/19/99	bt
	Cadmium (Cd)	<0.05	0.05	mg/L	02/19/99	bt
	Chromium (Cr)	<0.05	0.05	mg/L	02/19/99	bt
	Lead (Pb)	<0.05	0.05	mg/L	02/19/99	bt
	Selenium (Se)	<0.1	0.1	mg/L	02/19/99	bt
	Silver (Ag)	<0.05	0.05	mg/L	02/19/99	bt
SW-846 7470	TCLP Mercury (CVAA)					
	Mercury (Hg)	<0.002	0.002	mg/L	02/17/99	jlw
SW-846 1311	TCLP Physical Characterization					
	% Solids	< 0.5	0.5	%	02/16/99	rl
	% Aqueous	100	0.5	%	02/16/99	rl
	% Non-aqueous	< 0.5	0.5	%	02/16/99	rl
SW-846 3510B	Extraction (Sep. Funnel) - TCLP SVOCs					
	Separatory Funnel Liq/Liq Extraction	complete			02/22/99	td
SW-846 8270C	Semivolatile Organics (TCLP)					
	2,4-Dinitrotoluene	ND	20	ug/L	02/23/99	*HE
	Hexachlorobenzene	ND	20	ug/L	02/23/99	*HE
	Hexachlorobutadiene	ND	20	ug/L	02/23/99	*HE
	Hexachloroethane	ND	20	ug/L	02/23/99	*HE
	Nitrobenzene	ND	20	ug/L	02/23/99	*HE
	Pyridine	ND	20	ug/L	02/23/99	*HE
	2-Methylphenol (o-cresol)	ND	20	ug/L	02/23/99	*HE
	3 & 4 Methylphenol (m&p cresol)	ND	20	ug/L	02/23/99	*HE
	Pentachlorophenol	ND	100	ug/L	02/23/99	*HE
	2,4,5-Trichlorophenol	ND	20	ug/L	02/23/99	*HE
	2,4,6-Trichlorophenol	ND	20	ug/L	02/23/99	*HE
SW-846 8260B	Volatile Organics (TCLP)					
	Benzene	ND	0.05	mg/L	02/21/99	mk

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Customer Sample ID: DC-2
Date Sampled.....: 02/12/99
Time Sampled.....: 07:00
Sample Matrix.....: Water

Laboratory Sample ID: 990484-4
Date Received.....: 02/13/99
Time Received.....: 12:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Carbon tetrachloride	ND	0.05	mg/L	02/21/99	mk
	Chlorobenzene	ND	0.05	mg/L	02/21/99	mk
	Chloroform	ND	0.05	mg/L	02/21/99	mk
	1,2-Dichloroethane	ND	0.05	mg/L	02/21/99	mk
	1,1-Dichloroethene	ND	0.05	mg/L	02/21/99	mk
	Methyl ethyl ketone (2-Butanone)	ND	0.50	mg/L	02/21/99	mk
	Tetrachloroethene	ND	0.05	mg/L	02/21/99	mk
	Trichloroethene	ND	0.05	mg/L	02/21/99	mk
	Vinyl chloride	ND	0.10	mg/L	02/21/99	mk
	1,4-Dichlorobenzene	ND	0.05	ug/L	02/21/99	mk

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 9040 Batch.....: 2816 Analyst...: sps
Method Description.: Corrosivity (pH-Liquids) Units.....: pH Units
Parameter.....: Corrosivity (pH-Liquids)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
RS		WC983183	7.0		7.0		100.0	%	90-110	02/16/99 0900
MD	990456-1		7.0			7.0	0.0	R	20	02/16/99 0900

Test Method.....: EPA 418.1 Batch.....: 2850 Analyst...: cmg
Method Description.: Total Recoverable Petroleum Hydrocarbons Units.....: mg/L
Parameter.....: Total Recoverable Petroleum Hydrocarbons

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<10						1	02/16/99 1100
LCS		WS990776	444		410		108.3	%	80-120	02/16/99 1100
MD	990484-3		41			41	0.0	R	20	02/16/99 1100
MS	990484-3	WS990776	405		410	41	88.8	%	75-125	02/16/99 1100

Test Method.....: SW-846 9030 Batch.....: 2857 Analyst...: cmg
Method Description.: Sulfide, Total Units.....: mg/L
Parameter.....: Reactivity, Sulfide

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<20						20	02/16/99 0830
MD	990484-4		<20			<20	0.0	R	20	02/16/99 0830

Test Method.....: SW-846 9010A Batch.....: 2859 Analyst...: cmg
Method Description.: Cyanide (Colorimetric, Manual) Units.....: mg/L
Parameter.....: Reactivity, Cyanide

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
MB			<0.1						0.1	02/16/99 0830
MD	990484-4		<0.1			<0.1	0.0	R	20	02/16/99 0830

Test Method.....: SW-846 7470 Batch.....: 2886 Analyst...: jlw
Method Description.: TCLP Mercury (CVAA) Units.....: mg/L
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		H 048-A	<0.002						0.002	02/17/99 1530
ICV		HG993427	0.0053		0.005		106.0	%	90-110	02/17/99 1534
MB		021799	<0.002						0.002	02/17/99 1538
LCS		HG993428	0.0051		0.005		102.0	%	80-120	02/17/99 1541
MS	990481-1	HG993429	0.0053		0.005	0	106.0	%	80-120	02/17/99 1549
MSD	990481-1	HG993430	0.0057	0.0053	0.005	0	114.0	%	80-120	02/17/99 1553
							7.3	R	20	
CCB		H 048-B	<0.002						0.002	02/17/99 1615
CCV		HG993431	0.0051		0.005		102.0	%	90-110	02/17/99 1619
EB		MBT 1042	<0.002						0.002	02/17/99 1630
EB		MBT 1046	<0.002						0.002	02/17/99 1634

* %-% REC R-RPD A-ABS Diff. D-% Diff. .

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 7470 Batch.....: 2886 Analyst...: jlw
Method Description.: TCLP Mercury (CVAA) Units.....: mg/L
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
EB		MBT 1047	<0.002						0.002	02/17/99 1638
CCB		H 048-C	<0.002						0.002	02/17/99 1641
CCV		HG993432	0.0049		0.005		98.0	%	90-110	02/17/99 1645

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	-0.00715						0.05	02/19/99 1345
ICV		MS990099	9.40183		10.0		94.0	%		02/19/99 1351
ISB		MS990094	0.41007		0.5000		82.0	%	80-120	02/19/99 1414
CCB		CB050	-0.00439						0.05	02/19/99 1422
CCV		MS990040	4.61018		5.000		92.2	%	90-110	02/19/99 1427
MB		3010021799	-0.00990		2.000				0.05	02/19/99 1446
LCS		3010021799	1.99430		2.000		99.7	%	80-120	02/19/99 1459
MD	990368-1	3010021799	0.07601		2.000	0.06468	0.01133	A	0.05000	02/19/99 1509
MS	990368-1	3010021799	1.70323		2.000	0.06468	81.9	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	1.87645	1.70323	2.000	0.06468	90.6	%	75-125	02/19/99 1530
							9.7	R	20	
CCB		CB050	-0.00148						0.05	02/19/99 1553
CCV		MS990040	4.85175		5.000		97.0	%	90-110	02/19/99 1558
EB		MBT1042	0.00916						0.05	02/19/99 1624
EB		MBT1046	-0.00011						0.05	02/19/99 1628
EB		MBT1047	0.00915						0.05	02/19/99 1632
CCB		CCB050	0.00545						0.05	02/19/99 1636
CCV		MS990040	4.83101		5.000		96.6	%	90-110	02/19/99 1640

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	0.00000						0.5	02/19/99 1345
ICV		MS990099	9.89341		10.0		98.9	%		02/19/99 1351
ISB		MS990094	0.25017		0.25		100.1	%	80-120	02/19/99 1414
CCB		CB050	0.00000						0.5	02/19/99 1422
CCV		MS990097	4.96828		5.000		99.4	%	90-110	02/19/99 1432
MB		3010021799	0.00440		2.000				0.5	02/19/99 1446
LCS		3010021799	1.94238		2.000		97.1	%	80-120	02/19/99 1459
MD	990368-1	3010021799	0.21141		2.000	0.22198	0.01057	A	0.50000	02/19/99 1509
MS	990368-1	3010021799	1.72216		2.000	0.22198	75.0	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	1.94238	1.72216	2.000	0.22198	86.0	%	75-125	02/19/99 1530
							12.0	R	20	
CCB		CB050	0.00000						0.5	02/19/99 1553
CCV		MS990097	4.62473		5.000		92.5	%	90-110	02/19/99 1608
EB		MBT1042	0.01233						0.5	02/19/99 1624
EB		MBT1046	0.01145						0.5	02/19/99 1628
EB		MBT1047	0.01145						0.5	02/19/99 1632

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCB		CCB050	0.00088						0.5	02/19/99 1636
CCV		MS990097	4.54633		5.000		90.9	%	90-110	02/19/99 1645

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	-0.00219						0.05	02/19/99 1345
ICV		MS990099	10.14676		10.0		101.5	%		02/19/99 1351
ISB		MS990094	0.50089		0.500		100.2	%	80-120	02/19/99 1414
CCB		CB050	-0.00221						0.05	02/19/99 1422
CCV		MS990040	5.12952		5.000		102.6	%	90-110	02/19/99 1427
MB		3010021799	-0.00355		2.000				0.05	02/19/99 1446
LCS		3010021799	2.05072		2.000		102.5	%	80-120	02/19/99 1459
MD	990368-1	3010021799	-0.00328		2.000	-0.00203	0.00125	A	0.05000	02/19/99 1509
MS	990368-1	3010021799	1.58054		2.000	-0.00203	79.1	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	1.75561	1.58054	2.000	-0.00203	87.9	%	75-125	02/19/99 1530
							10.5	R	20	
CCB		CB050	-0.00325						0.05	02/19/99 1553
CCV		MS990040	4.92117		5.000		98.4	%	90-110	02/19/99 1558
EB		MBT1042	-0.00296						0.05	02/19/99 1624
EB		MBT1046	-0.00274						0.05	02/19/99 1628
EB		MBT1047	-0.00244						0.05	02/19/99 1632
CCB		CCB050	-0.00414						0.05	02/19/99 1636
CCV		MS990040	4.94496		5.000		98.9	%	90-110	02/19/99 1640

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	-0.00192						0.05	02/19/99 1345
ICV		MS990099	9.91913		10.0		99.2	%		02/19/99 1351
ISB		MS990094	0.24278		0.25		97.1	%	80-120	02/19/99 1414
CCB		CB050	-0.00164						0.05	02/19/99 1422
CCV		MS990040	4.96039		5.000		99.2	%	90-110	02/19/99 1427
MB		3010021799	-0.00109		2.000				0.05	02/19/99 1446
LCS		3010021799	1.98286		2.000		99.1	%	80-120	02/19/99 1459
MD	990368-1	3010021799	0.12846		2.000	0.13396	0.00550	A	0.05000	02/19/99 1509
MS	990368-1	3010021799	1.73720		2.000	0.13396	80.2	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	1.89552	1.73720	2.000	0.13396	88.1	%	75-125	02/19/99 1530
							8.7	R	20	
CCB		CB050	0.00055						0.05	02/19/99 1553
CCV		MS990040	4.69959		5.000		94.0	%	90-110	02/19/99 1558
EB		MBT1042	0.00275						0.05	02/19/99 1624
EB		MBT1046	-0.00137						0.05	02/19/99 1628
EB		MBT1047	0.00192						0.05	02/19/99 1632
CCB		CCB050	-0.00054						0.05	02/19/99 1636

* %-% REC R-RPD A-ABS Diff. D-% Diff. .

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
CCV		MS990040	4.68530		5.000		93.7	%	90-110	02/19/99 1640

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	0.01372						0.05	02/19/99 1345
ICV		MS990099	9.55885		10.0		95.6	%		02/19/99 1351
ISB		MS990094	0.48397		0.500		96.8	%	80-120	02/19/99 1414
CCB		CB050	0.00311						0.05	02/19/99 1422
CCV		MS990040	4.75146		5.000		95.0	%	90-110	02/19/99 1427
MB		3010021799	0.01328		2.000				0.05	02/19/99 1446
LCS		3010021799	2.14824		2.000		107.4	%	80-120	02/19/99 1459
MD	990368-1	3010021799	0.01959		2.000	0.01480	0.00479	A	0.05000	02/19/99 1509
MS	990368-1	3010021799	1.71507		2.000	0.01480	85.0	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	1.89144	1.71507	2.000	0.01480	93.8	%	75-125	02/19/99 1530
							9.8	R	20	
CCB		CB050	0.03297						0.05	02/19/99 1553
CCV		MS990040	5.16357		5.000		103.3	%	90-110	02/19/99 1558
EB		MBT1042	0.00102						0.05	02/19/99 1624
EB		MBT1046	0.01217						0.05	02/19/99 1628
EB		MBT1047	0.01911						0.05	02/19/99 1632
CCB		CCB050	-0.00551						0.05	02/19/99 1636
CCV		MS990040	5.09852		5.000		102.0	%	90-110	02/19/99 1640

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	0.01245						0.1	02/19/99 1345
ICV		MS990099	9.64321		10.0		96.4	%		02/19/99 1351
ISB		MS990094	0.43678		0.5000		87.4	%	80-120	02/19/99 1414
CCB		CB050	0.00062						0.1	02/19/99 1422
CCV		MS990040	4.76161		5.000		95.2	%	90-110	02/19/99 1427
MB		3010021799	0.01681		2.000				0.1	02/19/99 1446
LCS		3010021799	1.98540		2.000		99.3	%	80-120	02/19/99 1459
MD	990368-1	3010021799	0.01966		2.000	0.01452	0.00514	A	0.10000	02/19/99 1509
MS	990368-1	3010021799	1.89821		2.000	0.01452	94.2	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	2.06845	1.89821	2.000	0.01452	102.7	%	75-125	02/19/99 1530
							8.6	R	20	
CCB		CB050	0.01617						0.1	02/19/99 1553
CCV		MS990040	4.85714		5.000		97.1	%	90-110	02/19/99 1558
EB		MBT1042	-0.00125						0.1	02/19/99 1624
EB		MBT1046	-0.01121						0.1	02/19/99 1628
EB		MBT1047	-0.01930						0.1	02/19/99 1632
CCB		CCB050	-0.00996						0.1	02/19/99 1636
CCV		MS990040	4.85220		5.000		97.0	%	90-110	02/19/99 1640

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Test Method.....: SW-846 6010B Batch.....: 2935 Analyst...: bt
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date/Time
ICB		CB050	-0.00032						0.05	02/19/99 1345
ICV		MS990099	9.84630		10.0		98.5	%		02/19/99 1351
ICV		MS990098	9.80695		10.000		98.1	%		02/19/99 1356
ISB		MS990094	0.48542		0.500		97.1	%	80-120	02/19/99 1414
CCB		CB050	-0.00000						0.05	02/19/99 1422
CCV		MS990097	4.65831		5.000		93.2	%	90-110	02/19/99 1432
MB		3010021799	0.00251		2.000				0.05	02/19/99 1446
LCS		3010021799	1.87247		2.000		93.6	%	80-120	02/19/99 1459
MD	990368-1	3010021799	0.01041		2.000	0.00043	0.00998	A	0.05000	02/19/99 1509
MS	990368-1	3010021799	1.50802		2.000	0.00043	75.4	%	75-125	02/19/99 1525
MSD	990368-1	3010021799	1.52749	1.50802	2.000	0.00043	76.4	%	75-125	02/19/99 1530
							1.3	R	20	
CCB		CB050	0.00063						0.05	02/19/99 1553
CCV		MS990097	5.02074		5.000		100.4	%	90-110	02/19/99 1608
EB		MBT1042	-0.00355						0.05	02/19/99 1624
EB		MBT1046	-0.00071						0.05	02/19/99 1628
EB		MBT1047	0.00144						0.05	02/19/99 1632
CCB		CCB050	-0.00000						0.05	02/19/99 1636
CCV		MS990097	5.13848		5.000		102.8	%	90-110	02/19/99 1645

* %-% REC R-RPD A-ABS Diff. D-% Diff. .

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8260B Batch.....: 3027 Analyst ...: mk
Method Description.: Volatile Organics (TCLP) Units.....: mg/L

MB	Method Blank				02/21/99	1706

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						0.005
Carbon tetrachloride	ND						0.005
Chlorobenzene	ND						0.005
Chloroform	ND						0.005
1,2-Dichloroethane	ND						0.005
1,1-Dichloroethene	ND						0.005
Methyl ethyl ketone (2-Butanone)	ND						0.050
Tetrachloroethene	ND						0.005
Trichloroethene	ND						0.005
Vinyl chloride	ND						0.010
1,4-Dichlorobenzene	ND						0.005

MB	Method Blank				02/22/99	1525

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						0.005
Carbon tetrachloride	ND						0.005
Chlorobenzene	ND						0.005
Chloroform	ND						0.005
1,2-Dichloroethane	ND						0.005
1,1-Dichloroethene	ND						0.005
Methyl ethyl ketone (2-Butanone)	ND						0.050
Tetrachloroethene	ND						0.005
Trichloroethene	ND						0.005
Vinyl chloride	ND						0.010
1,4-Dichlorobenzene	ND						0.005

MB	Method Blank				02/23/99	1705

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						0.005
Carbon tetrachloride	ND						0.005
Chlorobenzene	ND						0.005
Chloroform	ND						0.005
1,2-Dichloroethane	ND						0.005
1,1-Dichloroethene	ND						0.005
Methyl ethyl ketone (2-Butanone)	ND						0.050
Tetrachloroethene	ND						0.005
Trichloroethene	ND						0.005
Vinyl chloride	ND						0.010
1,4-Dichlorobenzene	ND						0.005

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time
LCS	Laboratory Control Sample	LCS022199			02/21/99 1506

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	47		50.0		94	%	70-130
Carbon tetrachloride	50		50.0		100	%	70-130
Chlorobenzene	49		50.0		98	%	70-130
Chloroform	46		50.0		92	%	70-130
1,2-Dichloroethane	47		50.0		94	%	70-130
1,1-Dichloroethene	52		50.0		104	%	70-130
Methyl ethyl ketone (2-Butanone)	191		200.00		96	%	70-130
Tetrachloroethene	51		50.0		102	%	70-130
Trichloroethene	51		50.0		102	%	70-130
Vinyl chloride	54		50.00		108	%	70-130

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time
LCS	Laboratory Control Sample	LCS022299			02/22/99 1405

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	48		50.0		96	%	70-130
Carbon tetrachloride	50		50.0		100	%	70-130
Chlorobenzene	50		50.0		100	%	70-130
Chloroform	47		50.0		94	%	70-130
1,2-Dichloroethane	47		50.0		94	%	70-130
1,1-Dichloroethene	50		50.0		100	%	70-130
Methyl ethyl ketone (2-Butanone)	188		200.00		94	%	70-130
Tetrachloroethene	49		50.0		98	%	70-130
Trichloroethene	49		50.0		98	%	70-130
Vinyl chloride	49		50.00		98	%	70-130

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time
LCS	Laboratory Control Sample	LCS022399			02/23/99 1505

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	49		50.0		98	%	70-130
Carbon tetrachloride	48		50.0		96	%	70-130
Chlorobenzene	50		50.0		100	%	70-130
Chloroform	47		50.0		94	%	70-130
1,2-Dichloroethane	50		50.0		100	%	70-130
1,1-Dichloroethene	50		50.0		100	%	70-130
Methyl ethyl ketone (2-Butanone)	202		200.00		101	%	70-130
Tetrachloroethene	47		50.0		94	%	70-130
Trichloroethene	50		50.0		100	%	70-130
Vinyl chloride	48		50.00		96	%	70-130

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time
MS	Matrix Spike	LCS022299	990546-6		02/22/99 2310

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	49		50.0	ND	98.0	%	70-130
Carbon tetrachloride	45		50.0	ND	90.0	%	70-130
Chlorobenzene	49		50.0	ND	98.0	%	70-130
Chloroform	46		50.0	ND	92.0	%	70-130
1,2-Dichloroethane	46		50.0	ND	92.0	%	70-130

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	LCS022299	990546-6		02/22/99	2310

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
1,1-Dichloroethene	47		50.0	ND	94.0	%	70-130
Methyl ethyl ketone (2-Butanone)	153		200.00	ND	76.5	%	70-130
Tetrachloroethene	49		50.0	ND	98.0	%	70-130
Trichloroethene	49		50.0	ND	98.0	%	70-130
Vinyl chloride	50		50.00	ND	100.0	%	70-130

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	LCS022299	990546-6		02/22/99	2230

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	48	49	50.0	ND	96.0	%	70-130
					2.1	R	20
Carbon tetrachloride	45	45	50.0	ND	90.0	%	70-130
					0.0	R	20
Chlorobenzene	50	49	50.0	ND	100.0	%	70-130
					2.0	R	20
Chloroform	46	46	50.0	ND	92.0	%	70-130
					0.0	R	20
1,2-Dichloroethane	46	46	50.0	ND	92.0	%	70-130
					0.0	R	20
1,1-Dichloroethene	48	47	50.0	ND	96.0	%	70-130
					2.1	R	20
Methyl ethyl ketone (2-Butanone)	160	153	200.00	ND	80.0	%	70-130
					4.5	R	20
Tetrachloroethene	49	49	50.0	ND	98.0	%	70-130
					0.0	R	20
Trichloroethene	49	49	50.0	ND	98.0	%	70-130
					0.0	R	20
Vinyl chloride	49	50	50.00	ND	98.0	%	70-130
					2.0	R	20

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank				02/25/99	1406

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						0.005
Carbon tetrachloride	ND						0.005
Chlorobenzene	ND						0.005
Chloroform	ND						0.005
1,2-Dichloroethane	ND						0.005
1,1-Dichloroethene	ND						0.005
Methyl ethyl ketone (2-Butanone)	ND						0.050
Tetrachloroethene	ND						0.005
Trichloroethene	ND						0.005
Vinyl chloride	ND						0.010
1,4-Dichlorobenzene	ND						0.005

* %-% REC R-RPD A-ABS Diff. D-% Diff. .

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 990484 Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	LCS022299			02/25/99	1205

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	46		50.0		92	%	70-130
Carbon tetrachloride	48		50.0		96	%	70-130
Chlorobenzene	53		50.0		106	%	70-130
Chloroform	45		50.0		90	%	70-130
1,2-Dichloroethane	46		50.0		92	%	70-130
1,1-Dichloroethene	48		50.0		96	%	70-130
Methyl ethyl ketone (2-Butanone)	190		200.00		95	%	70-130
Tetrachloroethene	54		50.0		108	%	70-130
Trichloroethene	47		50.0		94	%	70-130
Vinyl chloride	47		50.00		94	%	70-130

* %-% REC R-RPD A-ABS Diff. D-% Diff.

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 990484 Report Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Method.....: SW-846 8260B Batch.....: 3027
Method Code.....: 8260TC Analyst.....: mk

Surrogate	Units
1,2-Dichloroethane-d4	mg/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990458-1			10	45	50.00	90.0	80-120		02/21/99	1946
990484-4			10	49	50.00	98.0	80-120		02/21/99	2026
990496-1			10	47	50.00	94.0	80-120		02/21/99	2106
990497-1			10	47	50.00	94.0	80-120		02/22/99	1749
990540-2			10	46	50.00	92.0	80-120		02/22/99	1910
990546-1			10	45	50.00	90.0	80-120		02/22/99	1950
990546-2			10	58	50.00	116.0	80-120		02/22/99	2030
990546-3			10	48	50.00	96.0	80-120		02/22/99	2110
990546-4			10	46	50.00	92.0	80-120		02/23/99	1921
990546-5			10	45	50.00	90.0	80-120		02/23/99	2002
990546-6			10	46	50.00	92.0	80-120		02/22/99	2150
990546-7			10	48	50.00	96.0	80-120		02/23/99	2042
990546-8			10	46	50.00	92.0	80-120		02/23/99	2122
990546-9			10	47	50.00	94.0	80-120		02/24/99	0002
990546-10			10	47	50.00	94.0	80-120		02/23/99	2202
990540-1			10	47	50.00	94.0	80-120		02/22/99	1929
		MB		46	50.00	92.0	80-120		02/21/99	1706
		MB		50	50.00	100.0	80-120		02/22/99	1525
		MB		50	50.00	100.0	80-120		02/23/99	1705
		LCS		48	50.00	96.0	80-120		02/21/99	1506
		LCS		50	50.00	100.0	80-120		02/22/99	1405
		LCS		51	50.00	102.0	80-120		02/23/99	1505
990546-6			10	46	50.00	92.0	80-120		02/22/99	2150
990546-6		MS		47	50.00	94.0	80-120		02/22/99	2310
990546-6		MSD		47	50.00	94.0	80-120		02/22/99	2230
990582-1			10	46	50.00	92.0	80-120		02/25/99	1446
		MB		49	50.00	98.0	80-120		02/25/99	1406
		LCS		49	50.00	98.0	80-120		02/25/99	1205

Surrogate	Units
4-Bromofluorobenzene	mg/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990458-1			10	50	50.00	100.0	86-115		02/21/99	1946
990484-4			10	50	50.00	100.0	86-115		02/21/99	2026
990496-1			10	51	50.00	102.0	86-115		02/21/99	2106
990497-1			10	48	50.00	96.0	86-115		02/22/99	1749
990540-2			10	50	50.00	100.0	86-115		02/22/99	1910
990546-1			10	49	50.00	98.0	86-115		02/22/99	1950
990546-2			10	50	50.00	100.0	86-115		02/22/99	2030
990546-3			10	49	50.00	98.0	86-115		02/22/99	2110
990546-4			10	48	50.00	96.0	86-115		02/23/99	1921
990546-5			10	48	50.00	96.0	86-115		02/23/99	2002
990546-6			10	49	50.00	98.0	86-115		02/22/99	2150

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 990484 Report Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Surrogate	Units
4-Bromofluorobenzene	mg/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990546-7			10	51	50.00	102.0	86-115		02/23/99	2042
990546-8			10	50	50.00	100.0	86-115		02/23/99	2122
990546-9			10	48	50.00	96.0	86-115		02/24/99	0002
990546-10			10	49	50.00	98.0	86-115		02/23/99	2202
990540-1			10	51	50.00	102.0	86-115		02/22/99	1929
		MB		49	50.00	98.0	86-115		02/21/99	1706
		MB		50	50.00	100.0	86-115		02/22/99	1525
		MB		52	50.00	104.0	86-115		02/23/99	1705
		LCS		49	50.00	98.0	86-115		02/21/99	1506
		LCS		50	50.00	100.0	86-115		02/22/99	1405
		LCS		48	50.00	96.0	86-115		02/23/99	1505
990546-6			10	49	50.00	98.0	86-115		02/22/99	2150
990546-6		MS		50	50.00	100.0	86-115		02/22/99	2310
990546-6		MSD		49	50.00	98.0	86-115		02/22/99	2230
990582-1			10	49	50.00	98.0	86-115		02/25/99	1446
		MB		51	50.00	102.0	86-115		02/25/99	1406
		LCS		50	50.00	100.0	86-115		02/25/99	1205

Surrogate	Units
Dibromofluoromethane	mg/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990458-1			10	45	50.00	90.0	86-118		02/21/99	1946
990484-4			10	47	50.00	94.0	86-118		02/21/99	2026
990496-1			10	46	50.00	92.0	86-118		02/21/99	2106
990497-1			10	45	50.00	90.0	86-118		02/22/99	1749
990540-2			10	45	50.00	90.0	86-118		02/22/99	1910
990546-1			10	45	50.00	90.0	86-118		02/22/99	1950
990546-2			10	44	50.00	88.0	86-118		02/22/99	2030
990546-3			10	45	50.00	90.0	86-118		02/22/99	2110
990546-4			10	43	50.00	86.0	86-118		02/23/99	1921
990546-5			10	44	50.00	88.0	86-118		02/23/99	2002
990546-6			10	44	50.00	88.0	86-118		02/22/99	2150
990546-7			10	45	50.00	90.0	86-118		02/23/99	2042
990546-8			10	45	50.00	90.0	86-118		02/23/99	2122
990546-9			10	44	50.00	88.0	86-118		02/24/99	0002
990546-10			10	44	50.00	88.0	86-118		02/23/99	2202
990540-1			10	42.68	50.00	85.4	86-118	X	02/22/99	1929
		MB		48	50.00	96.0	86-118		02/21/99	1706
		MB		48	50.00	96.0	86-118		02/22/99	1525
		MB		47	50.00	94.0	86-118		02/23/99	1705
		LCS		48	50.00	96.0	86-118		02/21/99	1506
		LCS		52	50.00	104.0	86-118		02/22/99	1405
		LCS		49	50.00	98.0	86-118		02/23/99	1505
990546-6			10	44	50.00	88.0	86-118		02/22/99	2150
990546-6		MS		48	50.00	96.0	86-118		02/22/99	2310
990546-6		MSD		45	50.00	90.0	86-118		02/22/99	2230
990582-1			10	43	50.00	86.0	86-118		02/25/99	1446

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 990484 Report Date: 03/22/99

CUSTOMER: ENSR PROJECT: BOWEN-HOBB0077013411 ATTN: RUSSELL TURNER

Surrogate	Units
Dibromofluoromethane	mg/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		45	50.00	90.0	86-118		02/25/99	1406
		LCS		46	50.00	92.0	86-118		02/25/99	1205

Surrogate	Units
Toluene-d8	mg/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
990458-1			10	51	50.00	102.0	88-110		02/21/99	1946
990484-4			10	52	50.00	104.0	88-110		02/21/99	2026
990496-1			10	50	50.00	100.0	88-110		02/21/99	2106
990497-1			10	51	50.00	102.0	88-110		02/22/99	1749
990540-2			10	52	50.00	104.0	88-110		02/22/99	1910
990546-1			10	50	50.00	100.0	88-110		02/22/99	1950
990546-2			10	51	50.00	102.0	88-110		02/22/99	2030
990546-3			10	51	50.00	102.0	88-110		02/22/99	2110
990546-4			10	53	50.00	106.0	88-110		02/23/99	1921
990546-5			10	50	50.00	100.0	88-110		02/23/99	2002
990546-6			10	52	50.00	104.0	88-110		02/22/99	2150
990546-7			10	51	50.00	102.0	88-110		02/23/99	2042
990546-8			10	50	50.00	100.0	88-110		02/23/99	2122
990546-9			10	50	50.00	100.0	88-110		02/24/99	0002
990546-10			10	51	50.00	102.0	88-110		02/23/99	2202
990540-1			10	51	50.00	102.0	88-110		02/22/99	1929
		MB		52	50.00	104.0	88-110		02/21/99	1706
		MB		48	50.00	96.0	88-110		02/22/99	1525
		MB		49	50.00	98.0	88-110		02/23/99	1705
		LCS		51	50.00	102.0	88-110		02/21/99	1506
		LCS		49	50.00	98.0	88-110		02/22/99	1405
		LCS		51	50.00	102.0	88-110		02/23/99	1505
990546-6			10	52	50.00	104.0	88-110		02/22/99	2150
990546-6		MS		52	50.00	104.0	88-110		02/22/99	2310
990546-6		MSD		52	50.00	104.0	88-110		02/22/99	2230
990582-1			10	53	50.00	106.0	88-110		02/25/99	1446
		MB		52	50.00	104.0	88-110		02/25/99	1406
		LCS		53	50.00	106.0	88-110		02/25/99	1205

Core Lab-Gulf States Analytical
Daily QC Batching Data
Data Released for Reporting

03/19/99
16:35:49
Group: 46829

Analysis Batch Number: 0949 -02/23/99-1265-1
Test Identification : 0949 -Semivolatiles, TCLP, TCLP Extract Units: ug/l Sequence: s054a.bQ
Number of Samples : 4
Batch Data-Date/Time : 02/24/99 / 09:42:45

BLANK#	ANALYTE	CONC FOUND #	LMT OF QUANTITATION
SBLKT-02/22	none detected		
SBLKT-02/22-2	none detected		

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCS-02/22	Pyridine	55.5600	100.0000	55.6	36.0	90.0
	o-Cresol (2-Methylphenol)	95.7600	100.0000	95.8	37.0	96.0
	m+p Cresol	77.8800	100.0000	77.9	29.0	98.0
	Hexachloroethane	85.5200	100.0000	85.5	36.0	114.0
	Nitrobenzene	103.9200	100.0000	103.9	42.0	124.0
	Hexachloro-1,3-butadiene	90.3400	100.0000	90.3	24.0	123.0
	2,4,6-Trichlorophenol	98.0800	100.0000	98.1	56.0	117.0
	2,4,5-Trichlorophenol	97.5600	100.0000	97.6	49.0	117.0
	2,4-Dinitrotoluene	111.0600	100.0000	111.1(K1)	56.0	105.0
	Hexachlorobenzene	97.1000	100.0000	97.1	54.0	157.0
	Pentachlorophenol	95.6800	100.0000	95.7	20.0	134.0

SURG #:35-0949 -S-SU

SAMPLE#	2FP #	PHL #	NBZ #	FBP #	TBP #	TPH #
SAMPLE 46829-245586	51	41	96	88	112	105
SAMPLE 46829-245587	50	39	83	87	114	101
SAMPLE 46829-245588	54	40	84	84	113	95
SAMPLE 46849-245675	54	38	101	91	95	117
BLK 1 SBLKT-02/22	57	40	91	93	124(G)	99
BLK 2 SBLKT-02/22	55	44	86	86	103	103
CTL 1 LCS-02/22	60	44	94	87	107	113

35-0949 -S-SU - SEMIVOLATILE TCLP SURROGATES SRG ABRV =	SURROGATE DESCRIPTION	QC LIMITS LOWER	QC LIMITS UPPER
2FP	2-Fluorophenol	21.0	100.0
PHL	Phenol-d6	10.0	94.0
NBZ	Nitrobenzene-d5	35.0	114.0
FBP	2-Fluorobiphenyl	43.0	116.0
TBP	2,4,6-Tribromophenol	10.0	123.0
TPH	Terphenyl-d14	33.0	141.0

---------- Result Footnotes ----------
(K1) - See comment for explanation
(G) - Marginal Outlier

---------- Batch Notes ----------
High recovery does not affect reported results. ki

Groups & Samples

46829-245586 46829-245587 46829-245588 46849-245675

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

ND = Analyte Not Detected above the quantitation limit
Numerical values expressed in the "LIMITS/*DILUTION" column are Practical Quantitation Limits (PQL). A final result of "ND" should be considered as "less than the PQL" (<PQL) unless otherwise indicated.

The detection limits and units reported in the Quality Control (QC) Report may not coincide with the values reported in the Laboratory Test Results Report because the data presented in the QC Report may not account for sample preparation and dilutions performed.

The date and time analyzed on the QC Report reflects either the actual date and/or time of sample analysis or the date and/or time of analysis completion for a sample batch.

Results for soil samples are reported on a wet weight basis (unless otherwise indicated).

Cited Test Methods are obtained from the following documents:

EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, 1986 and Updates I, II, IIA, and IIB
Standard Methods for the Examination of Water and Wastewater, 14th Ed., 1976, 15th Ed., 1981, and 18th Ed., 1992
United Oil Processors (UOP) Manual of Laboratory Test Methods
Hach Handbook of Water Analysis, 1979

SUBCONTRACTED LABORATORY LOCATIONS

For analysis performed by a subcontract laboratory, an "*" and the designated laboratory code is indicated in the "TECHN" column of the Laboratory Test Results Report.

Core Laboratories:

Anaheim	* A N	Houston Environmental	* H E
Aurora	* A U	Houston Petroleum	* H P
Carrollton	* C R	Indianapolis	* I N
Casper	* C A	Long Beach	* L B
Corpus Christi	* C C	New Orleans	* N O
Edison	* E D	Valparaiso	* V P
Hollister	* H R	Other	* X X

QUALITY ASSURANCE REPORT CODES

NC = Not Calculable due to values lower than the reporting limit

BLANKS	REFERENCE STANDARDS	SPIKES	DUPLICATES
MB = Method Blank	CS = Calibration Standard	MS = Matrix Spike	MSD = Matrix Spike Dupl.
RB = Reagent Blank	RS = Reference Standard	PDS = Post-Digest Spike	SD = Sample Duplicate
IB = Instrument Blank	ICV = Initial Calib. Verification	BS = Blank Spike	MD = Method Duplicate
ICB = Initial Calib. Blank	CCV = Continuing Calib. Verification	SS = Surrogate Spike	
CCB = Cont. Calib. Blank	LCS = Laboratory Control Standard		

For organic parameters, the blank value reported in the QC section of the report is the lowest reportable limit for the method.

3645 Beglis Pkwy
Sulphur, LA 70663
(318) 583-4926

CORE LAB

CORE LABORATORIES, INC.

No. 151041

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: ENSR	PROJECT NAME/NUMBER: Bowen-Hobbs 007613-411
SEND REPORT TO: Russell Turner	**BILLING INFORMATION**
ADDRESS: 3000 Richmond Ave, Suite 400 Houston, TX 77098	BILL TO: ADDRESS: Same
PHONE: (713) 520-9900	PHONE:
FAX: (713) 520-6802	FAX: PO NO.:

LAB JOB NO. 990484

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS / METHOD REQUEST: TPH 418.1	TCLP	Metals	VOCs	SVOCs	RCI	REMARKS / PRECAUTIONS
	DC-1A	2/12/99	7:00AM	Soil		—	2	✓						Run TPH & hold for further analysis
	DC-1B	2/12/99	7:00AM	Soil		—	2	✓						Run TPH & hold
	DC-1C	2/12/99	7:00AM	Soil		—	1	✓						Run TPH & hold
	DC-2	2/12/99	7:00AM	H_2O		-	2		✓	✓	✓	✓	✓	

SAMPLER: Christi Kiker

SHIPMENT METHOD: Fed Ex

AIRBILL NO.: 802735016878

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

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Christi Kiker	2/12/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Christi Kiker/ENSR	TIME 10:00AM	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Shalane Trahan	2/13/99	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Shalane Trahan/Core	TIME 1235	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ **Anaheim, CA** 1250 E. Gene Autry Way, Anaheim, CA 92805 (714) 937-1094 Fax (714) 937-1170

☐ **Aurora, CO** 10703 E. Bethany Drive, Aurora, CO 80014 (303) 751-1780 Fax (303) 751-1784

☐ **Carson, CA** 21730 S. Wilmington Ave. - Suite 201, Carson, CA 90810-1640 (310) 513-2031 Fax (310) 513-2035

☐ **Casper, WY** 420 W. First Street, Casper, WY 82601 (307) 235-5741 Fax (307) 266-1676

☐ **Corpus Christi, TX** 1733 N. Padre Island Drive, Corpus Christi, TX 78408 (512) 289-2673 Fax (512) 289-2471

☐ **Edison, NJ** 284 Raritan Center Parkway, Edison, NJ 08837 (732) 225-6700 Fax (732) 225-6777

☐ **Houston, TX (Env)** 6310 Rothway Drive, Houston, TX 77040

☐ **Houston, TX (Pet)** 8210 Mosley Road, Houston, TX 77075

☐ **Indianapolis, IN** 7726 Moller Road, Indianapolis, IN 46268

☑ **Lake Charles, LA** 3645 Begis Parkway, Sulphur, LA 70663

☐ **Valparaiso, IN** 2400 Cumberland Drive, Valparaiso, IN 46383