GW - 199

GENERAL CORRESPONDENCE

YEAR(S):
2006 - 2003

Price, Wayne, EMNRD

From: Price, Wayne, EMNRD
Sent: Wednesday, July 26, 2006 3:51 PM
To: 'mtom@escden.com'
Cc: 'Dean.Sibert@champ-tech.com'
Subject: Champion Hobbs site GW-199 AP-14
Contacts: Manley A. Tom

Dear Gentlemen:

OCD is in receipt of the Supplemental Investigation Report dated July 12, 2006 and hereby approves of the recommendations a,b,c, and d found on page 18 with the following additional condition:

1. An additional Monitoring well be installed down gradient of MW-20. The well shall be screened the entire thickness of the saturated zone and the distance down gradient shall be determined by your modeling program to demonstrate the anticipated attenuation.

2. Please notify this office 3 working days prior to drilling the well.

Please be advised that NMOCD approval of this plan does not relieve the owner/operator of responsibility should operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

ENVIRONMENTAL STRATEGIES CONSULTING LLC
4600 South Ulster Street, Suite 930 ▪ Denver, CO 80237 ▪ (303) 850-9200 ▪ Fax (303) 850-9214

July 12, 2006

2006 JUL 13 AM 9 58

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

Re: Supplemental Investigation Report, Champion Technologies Inc. Site (AP-14)
4001 South Highway 18, Hobbs, New Mexico

Dear Mr. Price:

Please find enclosed 2 copies of the supplemental investigation report for the above-referenced site.

If you have any questions regarding this report, please contact me at (303) 517-7985 or mtom@escden.com.

Sincerely,

Manley Tom, P.E.
Technical Manager

Enclosure

cc/encl: Chris Williams – New Mexico Oil Conservation Division
Dean Sibert – Champion Technologies Inc.
Dwight Vorpahl - Champion Technologies Inc.
Brian Friedman - Champion Technologies Inc.
Juan Alvarado - Champion Technologies Inc.
John Simon – Environmental Strategies Consulting, LLC

Price, Wayne, EMNRD

From: Price, Wayne, EMNRD **nt:** Tue 10/4/2005 1:12 PM
To: Manley Tom
Cc: Williams, Chris, EMNRD; Dean Sibert; John Simon
Subject: RE: Request to Abandon Wells (AP-14)
Attachments:

Got your message about off-site well. I would like to wait and see what your results before I approve your request. Thanks for keeping us informed.

Wayne Price-Senior Environmental Engr.
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3487
Fax: 505-4763462

From: Manley Tom [mailto:mtom@escden.com]
Sent: Tue 10/4/2005 10:36 AM
To: Price, Wayne, EMNRD
Cc: Williams, Chris, EMNRD; Dean Sibert; John Simon
Subject: Request to Abandon Wells (AP-14)

Wayne,
Please find attached a request to abandon certain unused well points and to modify other monitoring wells.

Manley Tom P.E.
Technical Manager
Environmental Strategies Consulting LLC
4600 South Ulster Street, Suite 930
Denver, CO 80237
(720) 482-3615 office
(303) 517-7985 cell
(303) 850-9214 fax

Price, Wayne, EMNRD

From: Price, Wayne, EMNRD **nt:** Tue 10/4/2005 1:29 PM
To: Manley Tom
Cc: Williams, Chris, EMNRD; Dean Sibert; John Simon
Subject: RE: Request to Abandon Wells (AP-14)
Attachments:

OCD approves of the request.

Please be advised that NMOCD approval of this request does not relieve (Champion) of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (Champion) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Wayne Price-Senior Environmental Engr.
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3487
Fax: 505-4763462

From: Manley Tom [mailto:mtom@escden.com]
Sent: Tue 10/4/2005 10:36 AM
To: Price, Wayne, EMNRD
Cc: Williams, Chris, EMNRD; Dean Sibert; John Simon
Subject: Request to Abandon Wells (AP-14)

Wayne,
Please find attached a request to abandon certain unused well points and to modify other monitoring wells.

Manley Tom P.E.
Technical Manager
Environmental Strategies Consulting LLC
4600 South Ulster Street, Suite 930
Denver, CO 80237
(720) 482-3615 office
(303) 517-7985 cell
(303) 850-9214 fax

ENVIRONMENTAL STRATEGIES CONSULTING LLC
4600 South Ulster, Suite 930 • Denver, Colorado 80237 • (303) 850-9200 • Fax (303) 850-9214

October 4, 2005

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

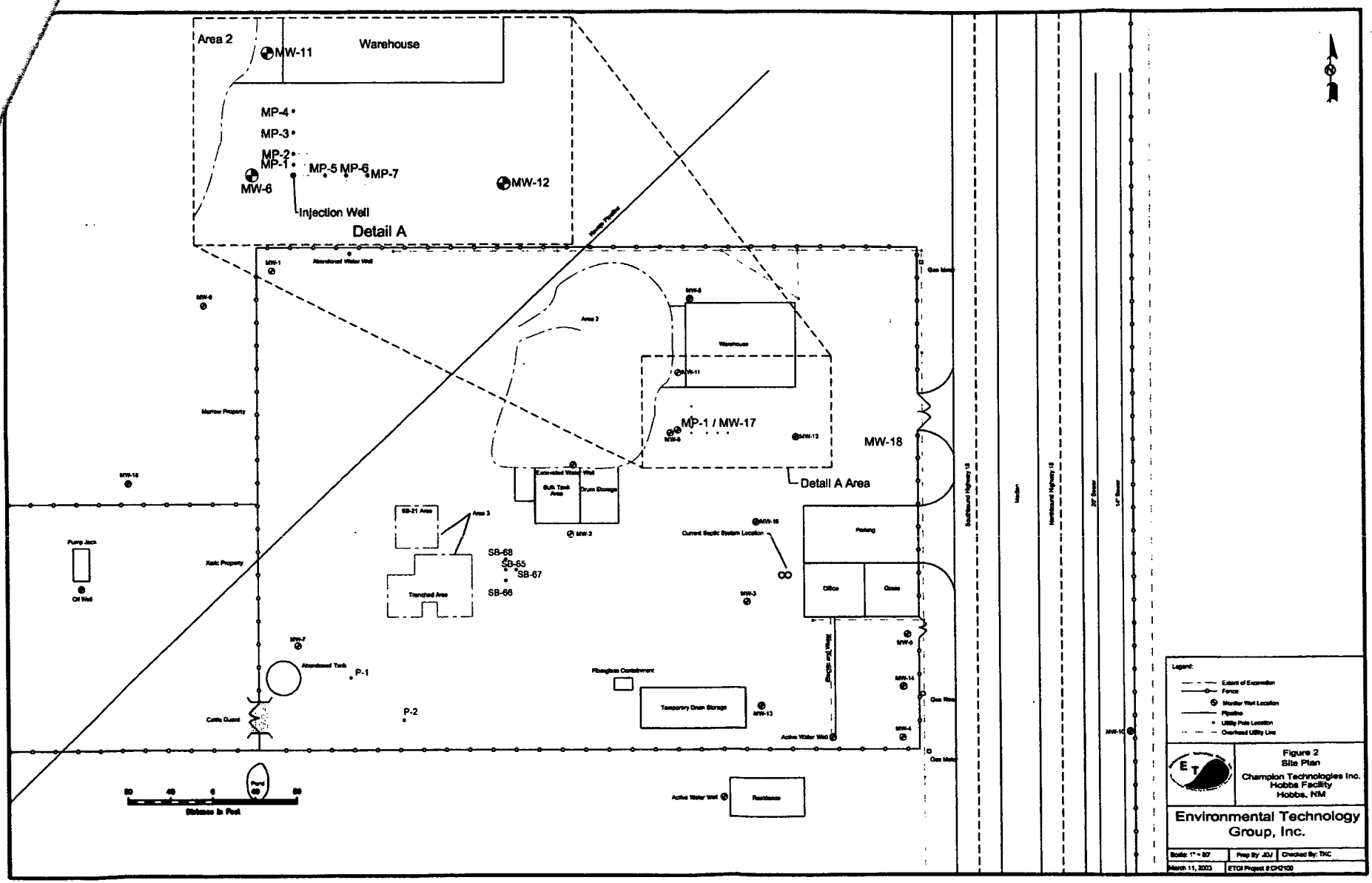
Re: Request to Abandon Selected Wells, Champion Technologies Inc. Site (AP-14)
4001 South Highway 18, Hobbs, New Mexico

Dear Mr. Price:

Environmental Strategies, on behalf of Champion Technologies Inc., is requesting NMOCD's approval to abandon seven shallow wells associated with the pilot-test referenced in the report by NOVA Safety and Environmental, dated March 24, 2005.

The purpose of abandoning the wells is two-fold: 1) the recently constructed facility expansion will lead to higher truck traffic and the stick-up wells restrict traffic patterns, and 2) Champion is not proposing any future groundwater treatment using injection technologies in the area thus retrofitting these seven wells would be an unnecessary effort. Our recent groundwater sampling indicates that there are no COCs exceeding their WQCC standards in both MW-17 and MW-18, which is consistent with the historical data from these wells as presented in NOVA's report and summarized in Appendix D of the Supplemental Investigation Workplan, dated March 29, 2005.

Attached is a map of the well locations (MP-2 through MP-7 and the injection well). We are proposing to fill the subsurface casings with a bentonite-cement grout, placed via a tremie pipe. The upper 3 ft of the casing will be drilled out or excavated and the void backfilled with on-site borrow soil, compacted in lifts. In addition to this abandonment, selected stick-up monitoring wells (MW-2, -6, -12, -16, -17 and -18) will be retrofitted with flush-mounted vaults to enable future monitoring while allowing the new traffic pattern. The casing elevations of the retrofitted wells will be resurveyed. We would like to begin this work the week of October 24, 2005.


Area 2
MW-11
Warehouse
MP-4
MP-3
MP-2
MP-1
MP-5
MP-6
MP-7
MW-6
MW-12
Injection Well
Detail A
MP-1 / MW-17
MW-18
Detail A Area
SB-68
SB-65
SB-67
SB-66
Trenched Area
Current Septic System Location
Parking
Office
Grass
Temporary Drum Storage
Fiberglass Containment
Abandoned Tank
P-1
P-2
Pond
Residence
Active Water Well
Pump Jack
Oil Well
Cattle Guard
Gas Meter
Gas Riser
Legend:
Extent of Excavation
Fence
Monitor Well Location
Pipeline
Utility Pole Location
Overhead Utility Line
Figure 2
Site Plan
Champion Technologies Inc.
Hobbs Facility
Hobbs, NM
Environmental Technology Group, Inc.
Scale: 1" = 80'
Prep By: JDJ
Checked By: TKC
March 11, 2003
ETGI Project #:CHC100

Price, Wayne

From: Price, Wayne
Sent: Tuesday, May 10, 2005 8:22 AM
To: 'Manley Tom'; Price, Wayne
Cc: Williams, Chris; Dean Sibert; John Simon
Subject: RE: Champion Technologies Hobbs, NM (AP-14)

OCD hereby approves of the investigation plan changes.

Please be advised that NMOCD approval of this plan does not relieve (Champion) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (Champion) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

-----Original Message-----
From: Manley Tom [mailto:mtom@escden.com]
Sent: Monday, May 09, 2005 3:16 PM
To: wprice@state.nm.us
Cc: cwilliams@state.nm.us; Dean Sibert; John Simon
Subject: Champion Technologies Hobbs, NM (AP-14)

Wayne,
As we discussed, here is a recap of our discussion regarding the Champion investigation.

Manley Tom P.E.
Technical Manager
Environmental Strategies Consulting LLC
4600 South Ulster Street, Suite 930
Denver, CO 80237
(720) 482-3615 office
(303) 517-7985 cell
(303) 850-9214 fax

Price, Wayne

From: Manley Tom [mtom@escden.com]
Sent: Monday, May 09, 2005 3:16 PM
To: wprice@state.nm.us
Cc: cwilliams@state.nm.us; Dean Sibert; John Simon
Subject: Champion Technologies Hobbs, NM (AP-14)

Wayne,
As we discussed, here is a recap of our discussion regarding the Champion investigation.

Manley Tom P.E.
Technical Manager
Environmental Strategies Consulting LLC
4600 South Ulster Street, Suite 930
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ENVIRONMENTAL STRATEGIES CONSULTING LLC
4600 South Ulster, Suite 930 • Denver, Colorado 80237 • (303) 850-9200 • Fax (303) 850-9214

VIA ELECTRONIC MAIL

May 9, 2005
Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

Re: Supplemental Investigation Workplan, Champion Technologies Inc. Site (AP-14)
4001 South Highway 18, Hobbs, New Mexico

Dear Mr. Price:

Thank you taking the time to review your April 29, 2005 comments on our proposed Supplemental Investigation Workplan, submitted on behalf of Champion Technologies, Inc., (Champion) on March 29, 2005. This letter serves to memorialize the discussion on May 4, 2005 and presents our understanding of the additional work to be included with the investigation program.

OCD Comment #1: One additional monitor well shall be installed due east of MW-08 located near the east side property line that runs north-south. The well shall have a minimum of 2 inch diameter and be built of similar material, constructed, developed and purged as other previously approved monitor wells on site (see July 10, 2000 approval). Due to the unusual amount of precipitation in this area, the required well mentioned above and proposed monitor wells MW-19 and MW-20 may be installed with a total screened interval of 25 feet of slotted screen with a minimum of 15 feet below and 10 feet above the current water level.

Summary of discussion: Champion will add MW-21 within the property, due east of MW-8 as close to the property line as practical. The proposed shallow wells (MW-19, -20, and -21) will be installed with 25 feet of slotted screen, with 5 feet above the water level encountered during installation. Furthermore, depending on the accessibility of land, MW-20 may be placed a reasonable distance north or south of the inferred chromium plume's longitudinal centerline. Attached is a revised version of Table 1, which supercedes the March 29, 2005, version.

OCD Comment #2: Chemicals of Concern (COC's) at this site shall be chloride, chromium, 1,1-DCA, PCE, vinyl chloride, barium and manganese.

Summary of discussion: We understand that OCD operating policy during site investigations is to monitor for all chemicals that exceed the numerical criteria listed in the Water Quality Control Commission (WQCC) regulations, in order to determine whether it poses a hazard to public health. Therefore, the COCs will be as listed in the above comment.

OCD Comment #3: Monitoring program shall include wells listed in Table 2 (attached) of the March 29, 2005 Supplemental Investigation Workplan submitted by Environmental Strategies Consultants LLC plus monitoring wells MW-03, 05, 07, 09 and new required well listed in item #1 above.

The following monitoring wells shall be sampled and analyzed quarterly:

MW-17 and MW-18 for chloride, chromium, 1,1-DCA , PCE, vinyl chloride, barium and manganese. MW-19, 13, 04,4D, 10, 20, Champion's active on-site well and Residents active off-site well for chloride, chromium, barium and manganese. All other wells for chloride, barium and manganese.

Summary of discussion: Champion will add the five monitoring wells and the chemicals requested by OCD. We understand that the purpose of the additional analyses is to confirm the results of the predictive modeling completed to date. Attached is a revised version of Table 2 which supercedes the March 29, 2005, version.

OCD Comment #4: No current monitor well shall be plugged or abandoned without OCD approval.

Duly noted.

OCD Comment #5: Notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

Duly noted.

OCD Comment #6: Area "3". Please provide the chloride content of the backfill or collect representative samples in this area and analyze for chlorides. Please take a soil core sample and perform a permeability test.

Summary of discussion: Champion will add one soil boring in the central part of Area 3 to document the concentrations of chloride in the backfill soil and the in-place hydraulic conductivity. We agree that the former criterion of 1×10^{-5} cm/s was arbitrarily selected, but is not necessarily applicable. This soil boring and proposed soil samples are presented in the revised version of Table 1 (attached) which supercedes the March 29, 2005, version

OCD Comment #7 Area "5" shall be delineated horizontally and vertically for chlorides.

Summary of discussion: Soil borings ESCSB-02 and -03, as originally proposed in the Workplan, serve to complete the delineation of chlorides in Area 5 vertically and horizontally.

OCD Comment #8 Submit the results of the investigation and remediation efforts to the OCD Santa Fe Office ***by July 15, 2006*** *with a copy provided to the OCD Hobbs District Office and shall include the following investigative information:*

a. *A description of all investigation, remediation and monitoring activities, which have occurred including conclusions and recommendations.*

b. *A geologic/lithologic log and well completion diagram for each monitor well.*

c. *A water table potentiometric map showing the location of all pertinent site features as well as the elevation, direction and magnitude of the hydraulic gradient of the groundwater.*

d. *Isopleth maps for contaminants of concern, which were observed during the investigations.*

e. *Summary tables of all ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC data taken within the past year.*

f. *The quantity and disposition of all recovered product and/or wastes generated. All waste shall be disposed of at an approved OCD site.*

g. *Address any issues concerning "Density Gradient" contamination.*

Summary of discussion: Bullets "a" through "f" are duly noted. To address bullet "g", Champion will analyze selected samples from selected shallow and deep wells for total dissolved solids, which is likely the overriding factor relating to water density. The report will present our findings with regard to inferred water density variation and reiterate the discussion on the very low potential for non-aqueous phase chlorinated solvents at the site, as presented in Appendix D of the Workplan.

OCD Comment #9: Future contamination found at or beyond the most down gradient monitoring system that exceeds the Water Quality Control Commission Regulation (WQCC) groundwater standards shall require immediate corrective action. A corrective action plan shall be submitted within 15 days of discovery.

Duly noted.

In summary, we understand that OCD is looking forward to terminating the abatement activities at this site and are pleased to conduct this supplemental investigation to collect adequate site characterization data to allow OCD to make a sound decision to do so.

Please contact me at your earliest convenience if you have any questions regarding this matter, at (303) 517-7985 or by email mtom@escden.com.

Sincerely,

Manley Tom, P.E.
Technical Manager

Attachments

cc: Chris Williams – New Mexico Oil Conservation Division
Dean Sibert – Champion Technologies Inc.
John Simon – Environmental Strategies Consulting, LLC

Table 1 (Revised May 4, 2005)
Summary of Proposed Soil Borings and Monitoring Wells
Champion Technologies, Inc. Site
Hobbs, New Mexico

Designation	Approximate Depth (feet bgs)	Soil Sample Depth (feet bgs)	Soil Analyses/Method
ESCSB-1/MW-19	50/80	1, 5, 10, 15, 25, 35 and 50 [a]	Chloride EPA 9056 Chromium EPA 6010 pH EPA 9045
ESCSB-2	50		
ESCSB-3	50		
ESCSB-4	20	1, 5, 10, 15 and 20	Chloride EPA 9056 Hydraulic Conductivity [b]
MW-4D	120	--	--
MW-20	80	--	--
MW-21	80	--	--

[a] The deepest sample will be collected as close to the top of the saturated zone as practical.

[b] Select one representative undisturbed sample for analysis by ASTM D2434 for granular soils or ASTM D5084 for silty or clayey soils. Initial degree of saturation will be inferred from the initial moisture content and density of each sample. If an undisturbed sample cannot be obtained, remold the sample at the laboratory to a target dry density of 103.4 to 106.8 pcf at an initial moisture content of 9.5 to 11.5%, based on in-place compaction reports (NOVA, 2005)

Table 2 (Revised May 4, 2005)
Summary of Groundwater Monitoring Program
Champion Technologies, Inc. Site
Hobbs, New Mexico

Designation	Field Parameters	Quarterly Lab Analyses	Additional Lab Analyses (First Two Quarters)
MW-1	pH ORP Dissolved Oxygen Ferrous Iron [a]	Barium, Chromium, and Manganese EPA 6010 [b] Chloride EPA 300.0	Iron EPA 6010 [b] Sulfide EPA 9030 Sulfate EPA 9035 Total Organic Carbon EPA 9060 Total Dissolved Solids EPA 160.1 [c]
MW-4			
MW-4D			
MW-8			
MW-10			
MW-13			
MW-19			
MW-20			
Onsite Supply Well			
Offsite Supply Well			
MW-17		Barium, Chromium, and Manganese EPA 6010 [b] Chloride EPA 300.0 Chlorinated VOCs EPA 8260	
MW-18			
MW-3		Chloride EPA 300.0 Barium and Manganese EPA 6010 [b]	--
MW-5			
MW-7			
MW-9			
MW-21			

a) Ferrous iron, using a HACH kit, is to be completed for the first two quarters of monitoring only.

b) All metals samples shall be filtered through a new 0.45 micron filter prior to placing in an acid-preserved container.

c) Samples from MW-4, -4D, -8, -9, and the Onsite Supply Well will be analyzed for Total Dissolved Solids for the first two quarters of monitoring.

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor

Joanna Prukop
Cabinet Secretary
Mark Fesmire
Director
Oil Conservation Division

April 29, 2005

Dean Sibert
Global Director, QHSE Affairs
Champion Technologies
3355 West Alabama #400
Houston, TX 77098

Re: Champion Hobbs Facility GW-199 (AP-14)
March 29, 2005 Supplemental Investigation Workplan

Dear Mr. Sibert:

The New Mexico Oil Conservation Division (OCD) is in receipt of the March 29, 2005 Supplemental Investigation Workplan submitted by Environmental Strategies Consultants LLC on behalf of Champion Technologies and the NOVA Safety and Environmental Status Update Letter to Comprehensive Status Report. OCD understands that Environmental Strategies Consultants LLC is now the lead consultant on this project. OCD hereby approves of the plan with the following conditions:

1. One additional monitor well shall be installed due east of MW-08 located near the east side property line that runs north-south. The well shall have a minimum of 2 inch diameter and be built of similar material, constructed, developed and purged as other previously approved monitor wells on site (see July 10, 2000 approval). Due to the unusual amount of precipitation in this area, the required well mentioned above and proposed monitor wells MW-19 and MW-20 may be installed with a total screened interval of 25 feet of slotted screen with a minimum of 15 feet below and 10 feet above the current water level.

2. Chemicals of Concern (COC's) at this site shall be chloride, chromium, 1,1-DCA, PCE, vinyl chloride, barium and manganese.

3. Monitoring program shall include wells listed in Table 2 (attached) of the March 29, 2005 Supplemental Investigation Workplan submitted by Environmental Strategies Consultants LLC plus monitoring wells MW-03, 05, 07, 09 and new required well listed in item #1 above.

   The following monitoring wells shall be sampled and analyzed quarterly:

   MW-17 and MW-18 for chloride, chromium, 1,1-DCA , PCE, vinyl chloride, barium and manganese. MW-19, 13, 04,4D, 10, 20, Champion's active on-site well and Residents active off-site well for chloride, chromium, barium and manganese. All other wells for chloride, barium and manganese.

4. No current monitor well shall be plugged or abandoned without OCD approval.

5. Notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

6. Area "3". Please provide the chloride content of the backfill or collect representative samples in this area and analyze for chlorides. Please take a soil core sample and perform a permeability test.

7. Area "5" shall be delineated horizontally and vertically for chlorides.

8. Submit the results of the investigation and remediation efforts to the OCD Santa Fe Office **by July 15, 2006** with a copy provided to the OCD Hobbs District Office and shall include the following investigative information:

   a. A description of all investigation, remediation and monitoring activities, which have occurred including conclusions and recommendations.

   b. A geologic/lithologic log and well completion diagram for each monitor well.

   c. A water table potentiometric map showing the location of all pertinent site features as well as the elevation, direction and magnitude of the hydraulic gradient of the groundwater.

   d. Isopleth maps for contaminants of concern, which were observed during the investigations.

   e. Summary tables of all ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC data taken within the past year.

   f. The quantity and disposition of all recovered product and/or wastes generated. All waste shall be disposed of at an approved OCD site.

   g. Address any issues concerning "Density Gradient" contamination.

9. Future contamination found at or beyond the most down gradient monitoring system that exceeds the Water Quality Control Commission Regulation (WQCC) groundwater standards shall require immediate corrective action. A corrective action plan shall be submitted within 15 days of discovery.

Please be advised that NMOCD approval of this plan does not relieve Champion Technologies of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Champion Technologies of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price-Pet. Engr. Spec.

cc: OCD Hobbs Office

attachments-1

Table 2
Summary of Groundwater Monitoring Program

Designation	Field Parameters [a]	Quarterly Lab Analyses [b]	Additional Lab Analyses (First Two Quarters) [b]
MW-1	pH ORP Dissolved Oxygen Ferrous Iron	Chromium EPA 6010 Chloride EPA 300.0	Sulfide EPA 9030 Sulfate EPA 9035 Iron EPA 6010 Total Organic Carbon EPA 9060
MW-8			
MW-17			
MW-18			
MW-4			
MW-4D			
MW-10			
MW-13			
MW-19			
MW-20			
Onsite Supply Well			
Offsite Supply Well			

a) Ferrous iron, using a HACH kit, is to be completed for the first two quarters of monitoring only.

b) All metals samples shall be filtered through a new 0.45 micron filter prior to placing in an acid-preserved container.

ENVIRONMENTAL STRATEGIES CONSULTING LLC
4600 South Ulster Street, Suite 930 ▪ Denver, CO 80237 ▪ (303) 850-9200 ▪ Fax (303) 850-9214

March 29, 2005

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

Re: Supplemental Investigation Workplan, Champion Technologies Inc. Site (AP-14)
4001 South Highway 18, Hobbs, New Mexico

Dear Mr. Price:

Please find enclosed 2 copies of the proposed supplemental investigation workplan for the above-referenced site.

If you have any questions regarding this workplan, please contact me at (303) 517-7985 or mtom@escden.com.

Sincerely,

Manley Tom, P.E.
Technical Manager

Enclosure

cc/encl: Chris Williams – New Mexico Oil Conservation Division
Dean Sibert – Champion Technologies Inc.
Dwight Vorpahl - Champion Technologies Inc.
John Simon – Environmental Strategies Consulting, LLC

ENVIRONMENTAL STRATEGIES CONSULTING LLC
4600 South Ulster Street, Suite 930 ▪ Denver, CO 80237 ▪ (303) 850-9200 ▪ Fax (303) 850-9214

March 29, 2005

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

Re: Record of Transmittal, Status Update Letter, Champion Technologies Inc. Site (AP-14)
4001 South Highway 18, Hobbs, New Mexico

Dear Mr. Price:

On behalf of Champion Technologies, Inc., Environmental Strategies Consulting LLC is enclosing 2 copies of NOVA Safety and Environmental's "Stage 2 Abatement Plan, Status Update Letter to Comprehensive Status Report", dated March 24, 2005, for the above-referenced site.

Sincerely,

Manley Tom, P.E.
Technical Manager

Enclosure

cc/encl: Chris Williams – New Mexico Oil Conservation Division
cc w/o encl: Dean Sibert – Champion Technologies Inc.
Dwight Vorpahl - Champion Technologies Inc.
John Simon – Environmental Strategies Consulting, LLC

Price, Wayne

From: Price, Wayne
Sent: Thursday, March 10, 2005 10:08 AM
To: 'Brad Phillips'; Price, Wayne
Subject: RE: Champion Technologies, Inc. - Hobbs, NM Facility

GW-199

OCD hereby approves of the new containment devices with the following conditions:

1. Shall be designed and meet the requirements pursuant to your current discharge plan conditions.
2. Please be advised that NMOCD approval of this plan does not relieve (Champion) of liability should their new containment operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (Champion) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

-----Original Message-----
From: Brad Phillips [mailto:BradP@syaeng.com]
Sent: Monday, February 28, 2005 2:51 PM
To: WPrice@state.nm.us
Subject: Champion Technologies, Inc. - Hobbs, NM Facility

Mr. Price,

Today, I forwarded the drum storage containment drawing and site map to your attention via overnight delivery. This package, coupled with the previous correspondence dated 2/17/2005 from Schreiber, Yonley & Associates, completes the project construction drawings and specifications for the two new containment structures to be installed at the Champion Technologies facility located in Hobbs, New Mexico.

Once you have had a chance to review the packages, please feel free to contact me if you have any questions.

Regards,

Brad Phillips
Associate Engineer
Schreiber, Yonley & Associates
(636) 349-8399
bradp@syaeng.com

SCHREIBER & YONLEY ASSOCIATES
ENVIRONMENTAL ENGINEERS
271 Wolfner Drive • Fenton, Missouri 63026
636/349-8399 • Fax 636/349-8384

February 28, 2005

Mr. Wayne Price
New Mexico Environmental Department
Oil Conservation Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Champion Technologies, Inc.
Hobbs, New Mexico Facility
Drawing for the Drum Storage Containment Structure

Dear Mr. Price:

As a follow-up to my letter dated February 17, 2005, Schreiber, Yonley & Associates is forwarding the drawing for the new drum storage containment structure to be constructed at the Champion Technologies, Inc., Hobbs, NM operation located at 4001 Highway 18. In addition, the site map referenced in the previous letter showing the location of the two new containment structures is included as a reference.

If you have any questions or if additional information is needed, please feel free to contact me at 636-349-8399.

Sincerely,

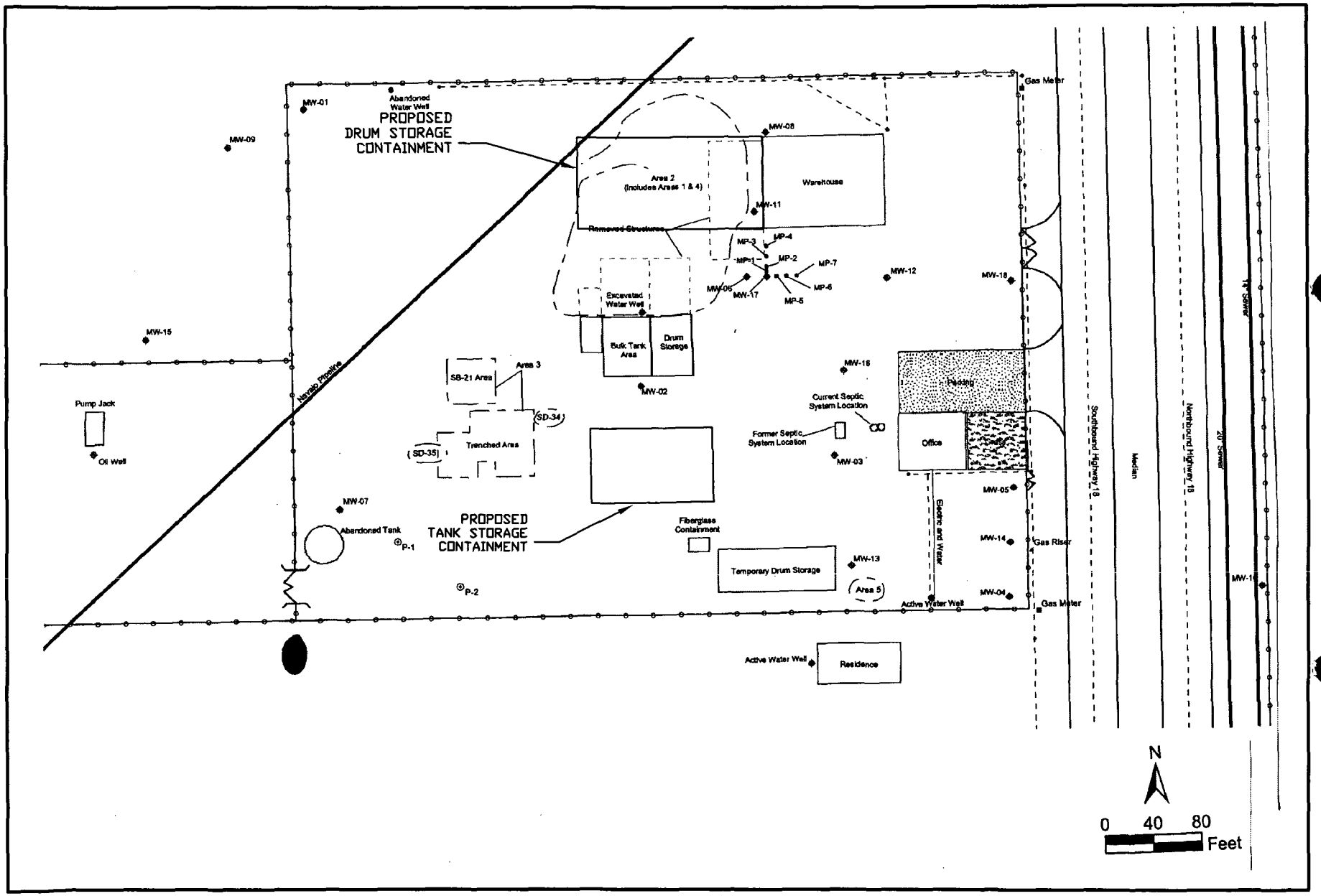
SCHREIBER, YONLEY & ASSOCIATES

Brad Phillips
Associate Engineer

BSP:bah
Enclosures

cc: Bryan Phillips – Champion Technologies, Inc. w/enclosures

X:\CHPHOB\040176\Correspondence\nmed ltr 2-28-05.doc



NEW CONTAINMENT LOCATIONS CHAMPION TECHNOLOGIES, INC. HOBBS, NEW MEXICO SITE				FIGURE 1
				SCALE: AS SHOWN
CHECKED BY:	DRAWN BY:	DATE DRAWN:	PROJECT #:	REVISION:
BSP	WKS	02/28/05	040176	

SCHREIBER & YONLEY ASSOCIATES
ENVIRONMENTAL ENGINEERS

SCHREIBER & YONLEY ASSOCIATES
ENVIRONMENTAL ENGINEERS
271 Wolfner Drive • Fenton, Missouri 63026
636/349-8399 • Fax 636/349-8384

February 18, 2005

Mr. Wayne Price
New Mexico Environmental Department
Oil Conservation Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Champion Technologies, Inc.
Hobbs, New Mexico Facility
Drawings and Specifications for the Storage Tank Containment Structure

Dear Mr. Price:

On behalf of Champion Technologies, Inc., Schreiber, Yonley & Associates is forwarding the drawings and specifications for the new storage tank containment structure to be constructed at their Hobbs, NM operation located at 4001 Highway 18. In addition, a site map showing the location of this containment structure is also included as a reference.

The second phase of this project will include the design and construction of a drum storage containment structure located near the current warehouse, also shown on the enclosed site map. The drawings and specifications for this structure are being developed and will be forwarded to your attention under separate cover.

If you have any questions or if additional information is needed, please feel free to contact me at 636-349-8399.

Sincerely,

SCHREIBER, YONLEY & ASSOCIATES

Brad Phillips
Associate Engineer

BSP:bah
Enclosures
cc: Bryan Phillips – Champion Technologies, Inc.
X:\CHPHOB\040176\Correspondence\nmed ltr 2-17-05.doc

SECTION NO. 03200

REVISION 0

CONCRETE REINFORCEMENT

PENTA PROJECT NO. 20050112

SCHREIBER, YONLEY & ASSOCIATES
CHAMPION TECHNOLOGIES, INC.

TANK FARM AND DRUM STORAGE AREA
HOBBS, NEW MEXICO

January 24, 2005

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1.00 GENERAL

1.01 DESCRIPTION

A. Work under this section consist of furnishing everything necessary for and incidental to the execution and completion of concrete reinforcement work as indicated on the drawings and specified herein, it includes fabrication and placement of reinforcement for all cast-in-place concrete, including bars, welded wire fabric, ties and supports.

B. The extent of concrete reinforcement is shown on the drawings and in schedules.

C. Related work specified elsewhere.
   1. Cast-in-Place Concrete: Section 03300

1.02 QUALITY ASSURANCE

A. Codes and Standards: Comply with requirements of the latest edition of the following codes and standards, except as herein modified:
   1. American Welding Society, AWS D1.4, "Structural Welding Code-Reinforcing Steel".
   2. Concrete Reinforcing Steel Institute, "Recommended Practice for Placing Reinforcing Bars".
   3. Concrete Reinforcing Steel Institute, "Manual of Standard Practice for Reinforced Concrete Construction".
   4. American Concrete Institute, ACI 318, "Building Code Requirements for Reinforced Concrete".
   5. American Concrete Institute, ACI 315, "Manual of Standard Practice for Detailing Reinforced Concrete Structures".
   6. ASTM A615, "Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement".
   7. ACI 301, Structural Concrete for Buildings.
   8. AWS D12.1, Welding Reinforcement Steel, Metal Inserts and Connections in Reinforced Concrete Construction.
   9. ACI SP – 66, American Concrete Institute – Detailing Manual.
   10. ANSI/ASTM A82, Cold Drawn Steel Wire for Concrete Reinforcement.

B. Qualifications for Welding Work:
   1. Qualify welding processes and welding operators in accordance with the AWS "Standard Qualification Procedure."
   2. Provide certification that welders to be employed in the work have satisfactorily passed AWS qualification tests within the previous 12 months. Submit certification to Owner a minimum of 15 days prior to performing any welding.
   3. If recertification of welders is required, retesting will be the Contractor's responsibility.

1.03 SUBMITTALS

A. Manufacturer's Data: Submit copies of specifications and installation instructions for proprietary materials and reinforcement accessories if requested by Owner.

B. Mill Test Reports: Furnish test reports or an affidavit certifying that the materials or product delivered to the job meet specified requirements if requested by Owner.

1.04 PRODUCT DELIVERY, HANDLING AND STORAGE

A. Deliver reinforcement to the project site bundled, tagged and marked. Use weatherproof tags indicating bar size, lengths and other information corresponding to markings shown on placement diagrams. Deliver reinforcement clean and free from loose mill and rust scale, dirt and other coatings.

B. Store concrete reinforcement materials at the site to prevent damage and accumulation of dirt, excessive rust and grease. Store materials to permit easy access for inspection and identification.

C. Exercise care to prevent damage to steel reinforcement during delivery and storage.

2.00 PRODUCTS

2.01 MATERIALS

A. Reinforcing Bars (rebar): ASTM A615, Grade 60 (420 MPa).

B. Supports for Reinforcement: Bolsters, chairs spacers and other devices for spacing, supporting and fastening reinforcement in place.

1. Over waterproof membranes, use precast-concrete brick bar supports to prevent penetration of the membrane.

C. Tie Wire: 16 gauge minimum and in sufficient quantity to hold reinforcement accurately in place during concrete placement operations.

2.02 FABRICATION

A. General: Fabricate reinforcing bars to conform to required shapes and dimensions, with fabrication tolerances complying with CRSI "Manual of Standard Practice", ACI SP-66, ACI 318, and ANSI/ASTM A 184. In case of fabricating errors, do not rebend or straighten reinforcement in a manner that will injure or weaken the material.

B. Locate reinforcement splices not indicated on drawings at point of minimum stress. Review location with Owner's Engineer.

C. Unacceptable Materials: Reinforcement with any of the following defects will not be permitted in the work:
   1. Bar lengths, depths and bends exceeding specified fabrication tolerances.
   2. Bend or kinks not indicated on drawings or final shop drawings.
   3. Bars with reduced cross section due to excessive rusting or other cause.

D. Weld reinforcement in accordance with ANSI/AWS D1.4, ANSI/AWS D12.1.

3.00 EXECUTION

3.01 INSTALLATION

A. Comply with the specified codes and Standards and Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for details and methods of reinforcement placement and support and as herein specified.

B. Clean reinforcement to remove loose rust and mill scale, earth, ice and other materials that reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by form work, construction or concrete placement operations.

D. Place reinforcement to obtain the minimum coverages for concrete protection as per ACI 318. Arrange, space and securely tie bars and bar supports together with 16-gauge wire to hold reinforcement accurately in position during concrete placement operations. Set wire ties so that twisted ends are directed away from exposed concrete surfaces.

E. Provide sufficient number of supports to carry reinforcement. Do not place reinforcing bars more than 2" (50 mm) beyond the last leg of any continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.

F. Splices: Provide standard reinforcement splices by lapping ends, placing bars in contact and tightly wire tying. Comply with requirements of ACI 318 for minimum lap of spliced bars. In the absence of splice locations shown on the drawings, splice top bars at midspan and bottom bars at supports.

END OF SECTION

SECTION NO. 03300

REVISION 0

CAST-IN-PLACE CONCRETE

PENTA PROJECT NO. 20050112

SCHREIBER, YONLEY & ASSOCIATES
CHAMPION TECHNOLOGIES, INC.

TANK FARM AND DRUM STORAGE AREA
HOBBS, NEW MEXICO

January 24, 2005

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1.00 GENERAL

1.01 DESCRIPTION

A. Work under this section consists of furnishing everything necessary for and incidental to the execution and completion of all cast-in-place concrete work, as indicated on the drawings and specified herein.

B. Related Work Specified Elsewhere
   1. Concrete Reinforcement: Section 03200

1.02 QUALITY ASSURANCE

A. Reference Standards
   1. American Society for Testing and Materials (ASTM).
   2. American Concrete Institute (ACI).

1.03 JOB CONDITIONS

A. Environmental Requirements
   1. In cold weather the concrete shall have a temperature of at least 50°F (10°C), but not more than 90°F (32°C). It shall be kept at a temperature of at least 50°F (10°C) for not less than 72 hours after placing, or until it has thoroughly set. Approved methods of keeping the required uniform temperature through the curing period, using canvas, heaters, etc., shall be employed. The Contractor shall provide adequate fire protection accessible at all times on each floor where heating is in progress, and shall maintain qualified personnel to keep the heating units in continued operation. Heating appliances shall not be placed in such a manner as to endanger formwork or expose any area of concrete to rapid drying action or other injury due to excessive heat. Where heat is required for protection of concrete in pits, heaters used must be of a type that will not permit accumulation of CO_2 in the pit from the combustion gases. See ACI 306R for other requirements for cold weather concreting.
   2. Comply with ACI 305R requirements for hot weather concreting whenever the air temperature exceeds 80°F (27°C). Make provisions for such expected conditions in advance to placing concrete. Sprinkle all formwork, reinforcing, subgrade, and general area around the work with cool water just before placing concrete. Place concrete as quickly as possible. Do not place concrete whose temperature exceeds 90°F (32°C).

B. Protection

1. Immediately after placing or finishing, protect concrete surface that is not covered by forms from loss of surface moisture for at least five days when average daily temperature is at least 70°F (21°C), and for longer periods when average daily temperature falls below 70°F (21°C).
2. Protect surfaces from which forms are removed before curing period has elapsed as specified for surfaces not covered by forms. Do not use membrane curing on surfaces required to receive additional concrete, concrete fill, or floor hardener.

C. Curing

1. Curing of concrete shall comply with ACI 308. Provision shall be made for maintaining concrete in a moist condition for a period of at least 7 days after placement. For high-early-strength concrete, however, moist curing shall be provided for at least the first three days, when concrete and air temperature are above 50°F (10°C). Longer periods of curing shall be required when temperatures are below 50°F (10°C)
2. The water saturation curing method using waterproof paper or polyethylene film or an impervious membrane curing compound may be used to keep concrete in a moist condition. Impervious membrane curing compound shall be an approved non-bituminous colorless liquid sealing compound applied in atomized form so as to preserve natural color of concrete. Apply curing compound as soon as surface water has disappeared from concrete surfaces, using approved pressure spraying equipment as per Manufacturer's directions in sufficient thickness to form effective water seal.

2.00 PRODUCTS

2.01 MATERIALS

A. Cement

1. Shall be ASTM C150 Portland Cement Type I or Ia, or type III or IIIa, conforming to Specification 3.2 of the latest ACI Standard 318 unless noted on the drawings.

B. Aggregates

1. Shall conform to ASTM C33 and Specification 3.3 of the latest ACI Standard 318 for normal weight concrete.

C. Water

1. Shall be clean and not detrimental to concrete, and shall conform to Specification 3.4 of the latest ACI Standard 318.

D. Formwork
1. Form design, construction, and removal shall conform to Specifications 6.1 and 6.2 of the latest ACI Standard 318.

2.02 MIXES

A. The concrete quality shall conform to the latest ACI Standard 318, Chapter 4, and in accordance with design stresses as shown on the drawings.

B. All concrete shall have at 28 days a minimum compressive strength as follows:
1. Lean concrete fill: 1500 psi (10 MPa).
2. Exterior slab and curbs: 4000 psi (28 MPa).

2.03 FABRICATION AND MANUFACTURE

A. Concrete
1. Equipment shall be prepared and concrete mixed, in accordance with Specifications 5.1, 5.2, and 5.3 of the latest ACI Standard 318.
2. Concrete shall be purchased from pre-qualified concrete suppliers approved by the Owner's Representative.

B. Mixture
1. Concrete shall be mixed and preparation made for its deposit in accordance with Specifications 5.1, 5.2, and 5.3 of the latest ACI Standard 318, as well as ACI 304.

2.04 CONCRETE ADMIXTURES

A. Provide admixtures produced by established reputable manufacturers and use in compliance with the Manufacturer's printed directions. Do not use admixtures that have not been incorporated and tested in the accepted mixes, unless otherwise authorized in writing by the Owner's Representative.

B. Air-Entraining Admixture: ASTM C 260. Use air-entraining admixture as noted on the design drawings. Add air-entraining admixture at the Manufacturer's prescribed rate to result in concrete at the point of placement having air content within the following limits:
1. 4% for maximum 2" (50mm) aggregate
2. 6% for maximum ¾" (19mm) aggregate
3. 7% for maximum ½ (12mm) aggregate

Air content should be measured using the pressure method described in ASTM C231 for normal weight concrete.

C. Water-Reducing Admixture: ASTM C 494, Type A. Use admixtures for water-reducing and set-control in strict compliance with the Manufacturer's directions.

D. Set-Control Admixtures: ASTM C 494, as follows:
1. Type B, Retarding
2. Type C, Accelerating
3. Type D, Water-Reducing and Retarding
4. Type E, Water-Reducing and Accelerating

E. Superplasticizers: The superplasticizer to produce rheoplastic concrete shall conform to ASTM-C-494, Type F or G. The admixture shall be free of chlorides and alkalis, and be of the synthesized sulfonated complex polymer type that shall be added to the concrete mixer at the central batch plant. Dosage as recommended by the manufacturer.

F. Fly Ash: Fly ash (ASTM C618, Class C) may be used to reduce cement content. Fly ash may replace up to 20 percent of cement by the use of 125 pounds (57 kg) of fly ash for each 100 pounds (45 kg) of cement removed. Submit mix design and test reports verifying compliance.

G. Calcium chloride or admixtures containing calcium chloride will not be permitted in concrete.

3.00 EXECUTION

3.01 INSTALLATION

A. Examination
1. Verify that anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.
2. Verify requirements for concrete cover over reinforcement in accordance with Section 7.7 of the latest ACI 318.

B. Preparation
1. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with Manufacturer's instructions.

C. Placing Concrete

1. Concrete shall be conveyed and deposited in accordance with Specifications 5.9 and 5.10 of the latest ACI Standard 318 and ACI 304.
2. No concrete shall be placed until dewatering, where required, has been accomplished.
3. Free fall height for concrete placement shall not exceed 4'-0" (1.2m).
4. Apply fog sprays as soon as possible to all slabs after placing, to guard against plastic shrinkage cracks.
5. Install vapor barrier under slabs on grade. Repair vapor barrier damages during placement of concrete reinforcing.
6. Place concrete continuously between predetermined expansion, control, and construction joints.
7. Notify Owner's Representative a minimum of 24 hours before placing concrete.
8. Maintain records of concrete placement, including date, location, quantity, air temperature, and samples taken.

D. Finishes

1. All exposed concrete surfaces shall be finished in accordance with ACI 301. These shall be rubbed with cement or carborundum blocks and water until hollows, lines, form marks and surplus material have been removed. The surface shall be uniformly smooth and shall be washed clean.
2. The Contractor shall patch all form tie holes and minor defective or honeycombed areas by cutting back to solid concrete and then filling with cement mortar consisting of one part cement to three parts sand before concrete is thoroughly dry. Concrete around metal form ties shall be cut back to a depth of ½" (12mm) and then the holes pointed up. The area to be patched shall be thoroughly wetted, prior to placing patching mortar.
3. Concrete floors shall be steel trowel finished. Outside walkways and stairs shall have a sand float finish. All finish surfaces shall be monolithic to indicated elevation and no additional grout or dry topping will be permitted.
4. Chemical hardener shall be applied to concrete surfaces as indicated on the drawings, and only when the ambient temperature is 50°F (10°C) and rising. Follow manufacturer's instructions regarding method of application.

3.02 FIELD QUALITY CONTROL

A. Concrete Compressive Strength Tests

1. ASTM C 31, "Practice for Making and Curing Concrete Test Specimens in the Field."
2. ASTM C 39, "Test Method for Compressive Strength of Cylindrical Concrete Specimens."
3. ASTM C 172 "Practice for Sampling Freshly Mixed Concrete."

4. ACI 318-95, Section 5.6.
5. At least six (6) specimens shall be made for each test, and not less than one (1) test shall be made for each 150 yd^3 (115m^3) [100 yd^3 (76m^3) for cold weather concreting] of concrete. In no case shall there be less than one (1) test for each eight (8) hour shift of concreting. Copies of test reports are to submitted to the Owner's Representative.

B. Concrete Slump Tests
1. Slump testing shall conform to ASTM C 143, "Test Method for Slump of Hydraulic Cement Concrete."
2. The following table lists the slump ranges for various types of construction. In no case shall slump exceed 6" (150mm) unless superplasticizers have been used. Concrete without superplasticizers or high-range water reducers with a slump in excess of 6" (150mm) shall be rejected. Only the Owner's Representative may authorize adding water to concrete with low slumps at the rate of ½ gal. per yd^3 (2.5 liter per m^3) up to 2 gal. per yd^3 (10 liter per m^3) total. If slump is still insufficient after max. allowable amount of water is added, concrete shall be rejected, and shall be removed from the job site at the Contractor's expense.

TYPES OF SLUMP, CONSTRUCTION	MAXIMUM	MINIMUM
Reinforced slabs and walls	5" (125mm)	2" (50mm)

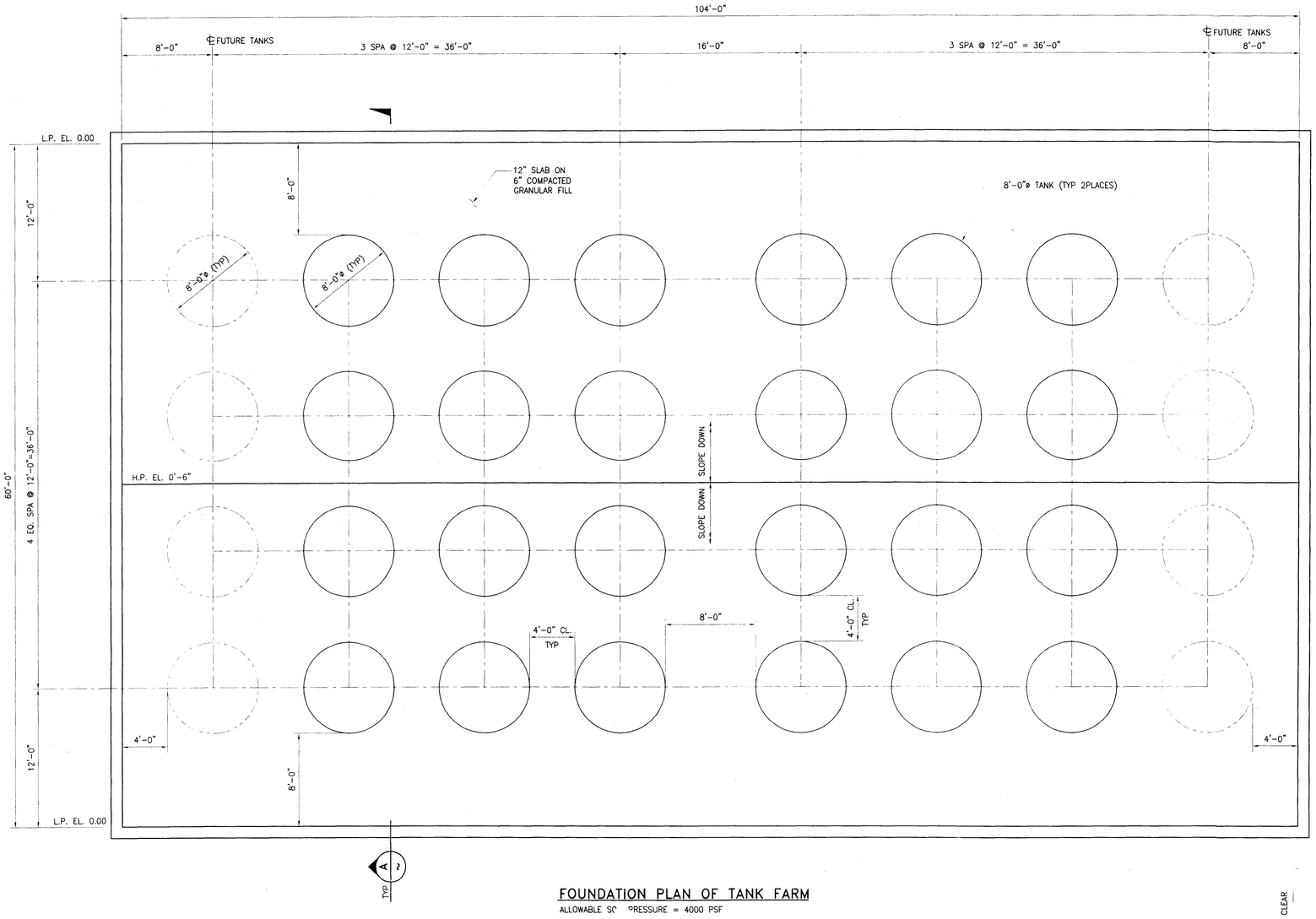
3. Slump tests shall be performed at the same time compressive strength cylinders are made or at anytime requested by the Owner's Representative.

C. Enforcement of Strength Requirements
1. Should the strength shown by the test specimen fall below the design strength specified, the Owner's Representative shall have the right to require changes in concrete proportions to apply on the remainder of the work. The Owner's Representative shall further have the right to require additional curing on those portions of the structure represented by such test specimens. In the event that such additional curing does not give the required strength, the Owner's Representative shall have the right to require strengthening or replacement of those portions of the structure which failed to develop the required strength at no additional expense.

D. Additional Curing
1. When additional curing on portions of the structure is ordered, it shall be done at the Contractor's expense and no claims for extra compensation for such curing shall be allowed.

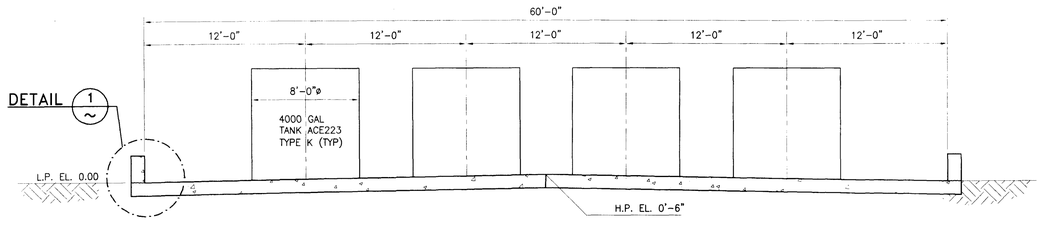
2. Such additional curing shall consist of an extension of the periods specified as may be necessary. Curing shall be continued until cores drilled from portions of the structure involved show an average strength equal to that specified. Cores for this purpose shall be secured and tested in accordance with ASTM C 42.

END OF SECTION

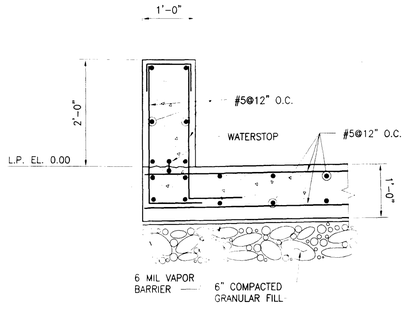


FOUNDATION PLAN OF TANK FARM

ALLOWABLE SOIL PRESSURE = 4000 PSF



SECTION A



DETAIL 1
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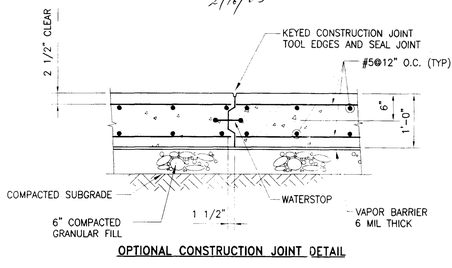
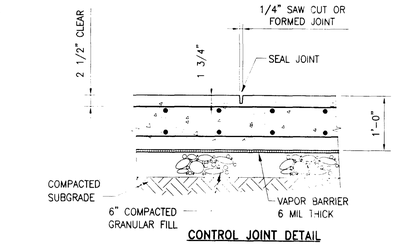


OPTIONAL CONSTRUCTION JOINT DETAIL



CONTROL JOINT DETAIL

GENERAL:

1. THE DESIGN, DETAILING, FABRICATION, AND ERECTION OF ALL STRUCTURES SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING CODES:
   a. AMERICAN CONCRETE INSTITUTE – "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318–XX)
   b. "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315–XX) AND "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" (ACI 315R–XX)

2. DESIGN CRITERIA:
   a. ALLOWABLE SOIL PRESSURE = 4000 PSF
   b. BASIN VOLUME HAS BEEN SIZED FOR 10% OF VOLUME OF 32 TANKS

BACKFILL:

1. ALL BACKFILL SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 95% OF IT'S MODIFIED PROCTER DENSITY AS DETERMINED BY ASTM D–1557 UNLESS NOTED OTHERWISE.

CONCRETE:

1. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, UNLESS OTHERWISE NOTED:
   a. LEAN CONCRETE FILL 1000 psi
   b. FOOTINGS AND FOUNDATION WALLS, PILE CAPS & CURBS 4000 psi
2. CONCRETE SHALL BE AIR ENTRAINED.
3. CONCRETE PROTECTIVE COVER FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH A.C.I. CODE, UNLESS OTHERWISE NOTED OR DETAILED ON DRAWING. IN GENERAL CONCRETE COVER SHALL BE AS FOLLOWS:
   a. 3" – FOR CONCRETE DEPOSITED AGAINST THE GROUND
   b. 2" – FOR FORMED SURFACES EXPOSED TO WEATHER
4. EXPOSED EDGES OF CONCRETE ABOVE GRADE AND EXPOSED EXTERNAL CORNERS OF ALL COLUMNS AND BEAMS SHALL HAVE 3/4" x 45 DEGREE CHAMFERS, UNLESS OTHERWISE NOTED.
5. CONCRETE FINISHES:
   a. EXTERIOR SURFACES SHALL HAVE A BROOM FINISH

REINFORCEMENT:

1. REINFORCING BARS SHALL CONFORM TO ASTM SPECIFICATIONS A615 GRADE 60 UNLESS NOTED.
2. ALL SPLICES AND DEVELOPMENT LENGTHS TO BE PER ACI 318 CLASS "A" MINIMUM UNLESS NOTED.
3. ALL REINFORCEMENT SPLICES SHALL BE STAGGERED.
4. CONTRACTOR TO PROVIDE ADEQUATE SUPPORT OF REINFORCEMENT TO PREVENT SAGGING OF THE REINFORCEMENT.

CONSTRUCTION & CONTROL JOINTS.

1. SLAB CONTROL JOINTS SHALL BE SPACED AT MAXIMUM OF 20'–0" O.C. EACH WAY.
2. WATERSTOPS SHALL BE 3/16" x 6" EXTRUDED MULTI–RIB CENTER BULB TYPE UNLESS NOTED OTHERWISE.

ISSUED FOR CONSTRUCTION
DATE: 14FEB05 BY: PEER

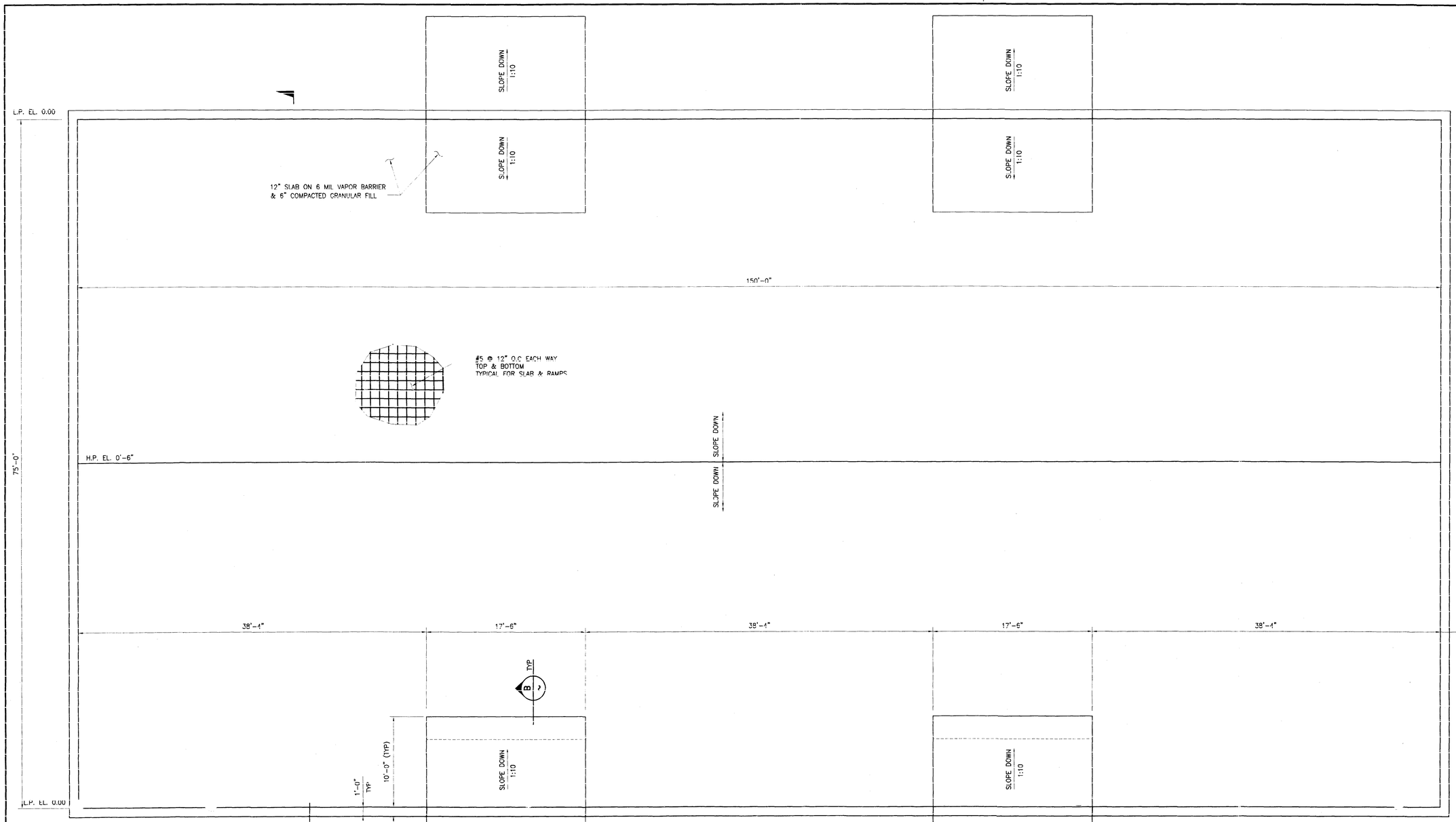
REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.
0	14FEB05	ISSUED FOR CONSTRUCTION	SY	DJP	
A	10FEB05	ISSUED FOR REVIEW	SY	DJP	

PENTA ENGINEERING CORP.
1807 Park 270 Drive, Suite 500, St. Louis, MO 63146–4034
Phone 314–878–0123 * Fax 314–878–0120

SHREIBER YONLEY & ASSOCIATES
Champion Technologies Inc. – Hobbs, NM facility

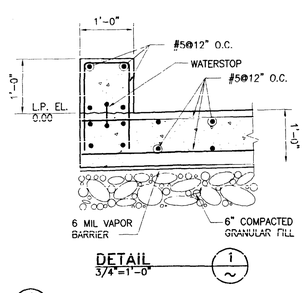
TANK FARM AND DRUM STORAGE AREA
FOUNDATION
PLAN AND SECTION

DESIGNED:	PEER	DATE: 17JAN05	PENTA DRAWING NUMBER	REV.
DRAWN:	YERSHOV	DATE: 17JAN05	050112–S–020	0
CHECKED:	VLAYTCHEV	DATE: 14FEB05	CLIENT DRAWING NUMBER	
APPROVED:	PEER	SCALE: 3/16"=1'–0"		



DRUM CONFINEMENT AREA

ALLOWABLE SOIL PRESSURE = 4000 PSF



DETAIL i
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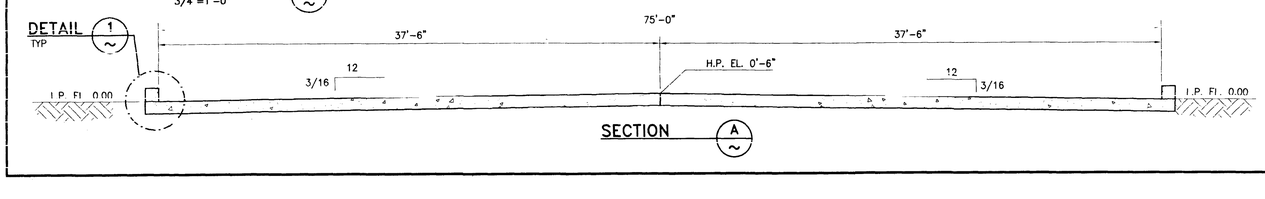
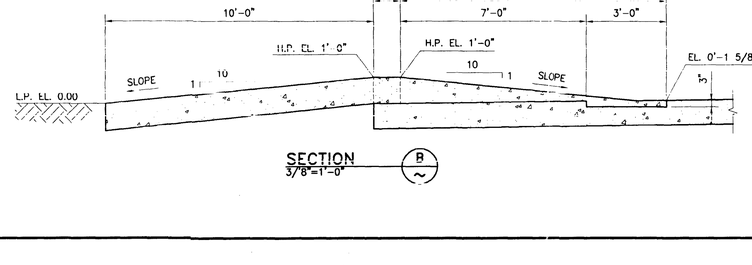


SECTION A



SECTION B
3/8"=1'-0"

NOTES:

1. FOR GENERAL NOTES AND CONCRETE TYPICAL DETAILS SEE DRAWING 050112-S-20.

NAVARES-MESTANZA
NEW MEXICO
13948
PROFESSIONAL ENGINEER
2/23/05

ISSUED FOR CONSTRUCTION
DATE: 23FEB05 BY: PEER

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.
0	23FEB05	ISSUED FOR CONSTRUCTION	SY	DJP	

PENTA ENGINEERING CORP.
1807 Park 270 Drive, Suite 500, St. Louis, MO 63146-4034
Phone 314-878-0123 • Fax 314-878-0120

SHREIBER YONLEY & ASSOCIATES
Champion Technologies Inc. – Hobbs, NM facility

DRUM CONFINEMENT AREA
FOUNDATION
PLAN AND SECTION

DESIGNED: PEER	DATE: 22FEB05	PENTA DRAWING NUMBER	REV.
DRAWN: YERSHOV	DATE: 22FEB05	050112-S-021	0
CHECKED: VLAYTCHEV	DATE:	CLIENT DRAWING NUMBER	
APPROVED: PEER	SCALE: 3/16"=1'-0"		

H:\CHARIFER\2005\0112\STRUC\050112-S-021.DWG 02-23-05 3:27 SERAFIM.YERSHOV ©PENTA ENG.CORP.

Price, Wayne

From: Price, Wayne
Sent: Thursday, July 01, 2004 3:51 PM
To: Price, Wayne; 'Ralph Corry'
Subject: RE: HOBBS (AP-14) CHAMPION'S HOBBS, NM FACILITY GW-199

Dear Ralph, OCD received the map and plugging plan and hereby approves.

-----Original Message-----
From: Price, Wayne
Sent: Monday, June 28, 2004 8:16 AM
To: 'Ralph Corry'
Subject: RE: HOBBS (AP-14) CHAMPION'S HOBBS, NM FACILITY GW-199

Please provide a map showing the wells and a plugging plan.

-----Original Message-----
From: Ralph Corry [mailto:Ralph.Corry@CHAMP-TECH.com]
Sent: Friday, June 25, 2004 9:11 AM
To: Wayne Price (E-mail)
Cc: Ann Barker; Allan Childs
Subject: HOBBS (AP-14) CHAMPION'S HOBBS, NM FACILITY GW-199

Dear Wayne,

Champion Technologies is requesting permission to plug and close two of the monitoring wells at the Hobbs' facility. These two wells are MW-8 and MW-11. These wells have not exceeded the regulatory requirements for chromium in the five quarters of sampling. These wells are located on or close to the old drum pad behind the warehouse. After these wells are plugged, then a concrete pad will be rebuilt over or near these areas.

Also Champion is rebuilding the tank farm area that was previously removed for remediation purposes.

If there should be any questions, please contact Ann Barker or me at 281-431-2561.

Sincerely yours,
Ralph Corry

CHAMPION TECHNOLOGIES, INC.

Committed to Improvement

RALPH CORRY

Environmental Specialist

3130 FM 521•Fresno, Texas• 77545

P.O. Box 450499 •Houston, Texas •77245-0499

Office Phone: 281-431-2561

Fax: 281-431-1655

DATE: July 1, 2004

TO: **Wayne Price-NMOCD**

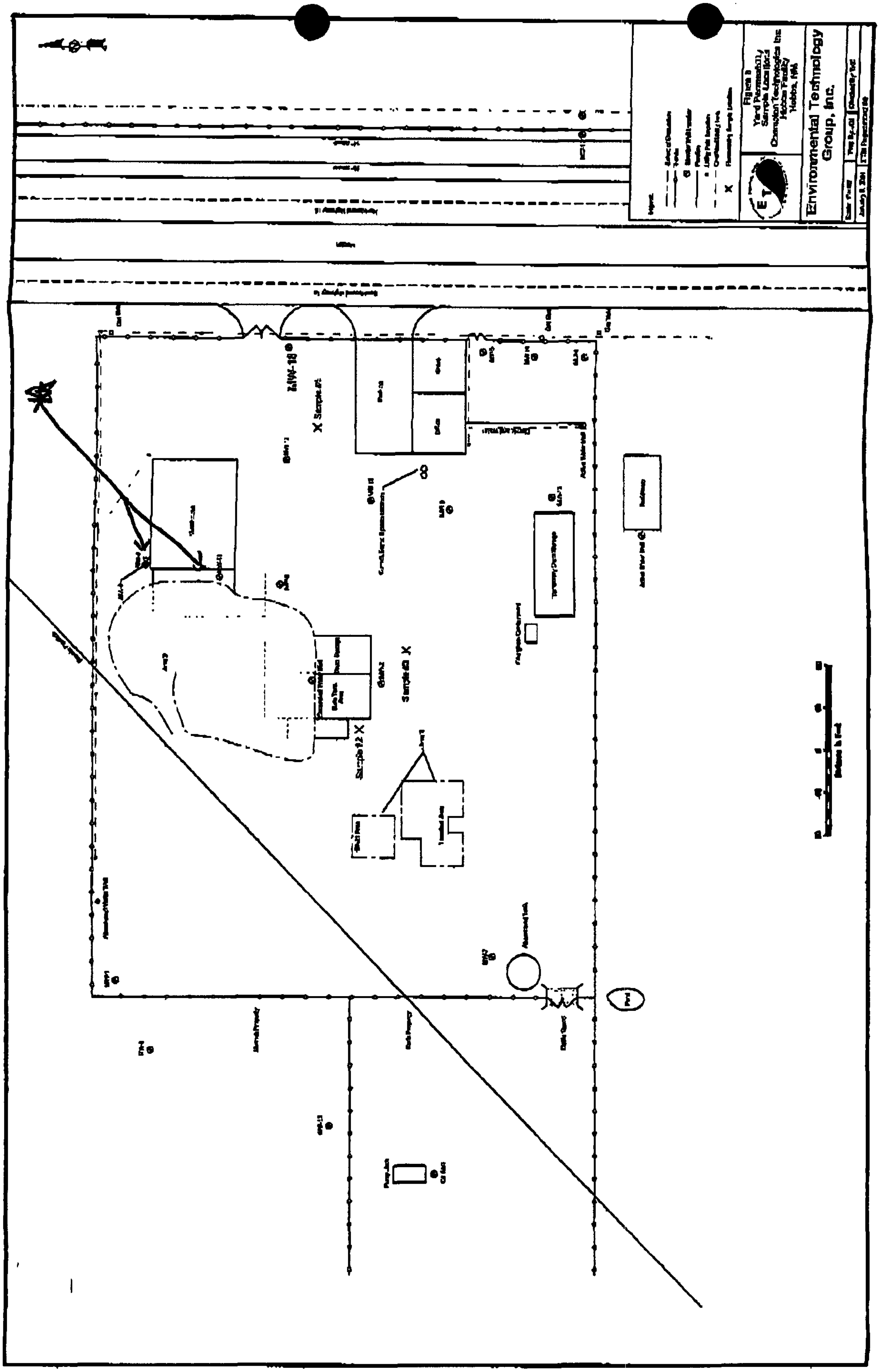
FROM: RALPH CORRY

FAX: 505-~~827-8177~~ 476-3462

SUBJECT: Hobbs (AP-14) CHAMPION'S HOBBS, NM FACILITY GW-199

YOU SHOULD RECEIVE 3 PAGES, INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 281-431-2561

The wells to be P&A are MW-8 and MW-11. I am enclosing map and the plugging plan.


Environmental Technology Group, Inc.

Ralph Corry

To: Wayne Price (E-mail)
Subject: WELL PLUGGING PLAN HOBB'S AP-14

IF THE MONITORING WELLS ARE PVC, A CEMENT TRUCK WILL BE GROUGHT IN TO FILL THE CASING TO THE SURFACE WITH GROUT. AFTER FILLING THEN THE DRILL WILL SUBMIT A P&A REPORT TO THE STATE UPON COMPLETION. THE MONITORING WELLS TO BE PLUGGED ARE MW-8 AND MW-11. IF CONSTRUCTED OF MATERIAL OTHER THAN PVC, THEN A DRILLING RIG WILL BE BROUGHT ON SITE AND ATTEMPT TO PULL. AS REQUIRED BY REGS. AFTER THE CASING IS PULLED OR CUT OFF (IF IT CANNOT BE PULLED), A CEMENT TRUCK WILL BE BROUGHT IN TO FILL THE WELLS WITH GROUT TO SURFACE. HEN P&A REPORT WILL BE SUBMITTED TO THE STATE UPON COMPLETION.

RALPH CORRY

Price, Wayne

From: Price, Wayne
Sent: Thursday, August 21, 2003 1:47 PM
To: 'Todd Choban'; Price, Wayne
Cc: ralph.corry@champ-tech.com; Chan Patel
Subject: RE: Excavated well sample results, schedule

Approved!

Please be advised that NMOCD approval of this plan does not relieve Champion of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Champion of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

-----Original Message-----
From: Todd Choban [mailto:tchoban@etgi.cc]
Sent: Thursday, August 21, 2003 1:47 PM
To: WPrice@state.nm.us
Cc: ralph.corry@champ-tech.com; Chan Patel
Subject: Excavated well sample results, schedule

Hi Wayne,

On behalf of Champion Technologies, ETGI requests permission to plug and abandoned the "excavated" water well located in the Area 2 sidewall and to utilize the excavated concrete debris (estimated 250 cy) during backfilling activities.

Attached are the analytical results from the excavated water well at Champion. Also attached is an estimated schedule of up-coming activities.

The sample results look "good", let me know what you think.

If you do not receive either or both the PDF and Word file attachments please let me know. I have received past reports that the attachments did not make it to their destination from this computer.

Call if you have any questions.

Thanks,

Todd Choban
ETGI

TASKS TO BE COMPLETED AT CHAMPIONS HOBBS FACILITY.

1. Quarterly sampling of monitor and domestic wells (4th quarter).

2. Plug and Abandonment of excavated well. (1 Week)

3. Backfill, compaction and installation of liner in Area 2. (3 Weeks)

4. Conduct slug tests and pump test to determine rate of groundwater movement. Conduct pump test on up-gradient well, utilize produced water during backfill and compaction of Area 2. (1 Week)

5. Complete soil sampling of compacted caliche layer to illustrate decrease of precipitation infiltration. (2 Weeks)

6. Excavate below 5 foot near Area 3 (sample points D-34 and D-35) for chloride. Collect confirmation samples, backfill and dispose of excavated material. (2 Weeks)

7. Backfill and compact Area 3. (2 Weeks)

8. Excavate/Scrape at least 1.5 feet of topsoil from Area 5, collect sample for chloride, backfill and dispose of excavated material with above. (1 Week)

9. Install, develop, and sample an additional monitor wells near entry gate. (1 Week)

10. Investigate area between MW-7 and MW-13 for secondary subsurface chromium source. (3 Weeks)

11. Conduct pilot test to determine density of injection points for groundwater treatment. (2 Weeks)

12. Install groundwater treatment injection zone in two locations by monitor well MW-4 and MW-12. (3 Weeks)

13. Ensure bulk tank and drum storage area have permanent secondary containment. (1 Week)

14. Establish procedures for containing, collecting and disposing of all fluids discarded in laboratory sink. (1 Week)

15. Status Update Report to include all data collected since last report, on-going activities/

monitoring, quarterly monitoring, monitoring reduction, projections, etc. (5 Weeks)

16. Modify discharge permit. (1 Week)

Total 29 weeks.

Activity durations are estimates. Schedule may be modified by conducting some activities concurrently or by changing site parameters. Data evaluation time is not included in the above schedule.

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
4600 W. Wall
Midland, TX 79703

Report Date: August 20, 2003

Work Order: 3081414

Project Location: Hobbs
Project Name: Champion
Project Number: CH 2100

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
15306	Excavated Well	water	2003-08-13	10:50	2003-08-14

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Blair Leftwich

Dr. Blair Leftwich, Director

Analytical Report

Sample: 15306 - Excavated Well

Analysis:	Ag, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Silver		<0.0130		mg/L	1	0.0130

Sample: 15306 - Excavated Well

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	3806	Date Analyzed:	2003-08-15	Analyzed By:	RS
Prep Batch:	3417	Date Prepared:	2003-08-15	Prepared By:	RS

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		108		mg/L as CaCo3	1	4.00
Total Alkalinity		108		mg/L as CaCo3	1	4.00

Sample: 15306 - Excavated Well

Analysis:	As, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Arsenic		<0.0100		mg/L	1	0.0100

Sample: 15306 - Excavated Well

Analysis:	Ba, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Barium		0.743		mg/L	1	0.0100

Sample: 15306 - Excavated Well

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3866	Date Analyzed:	2003-08-18	Analyzed By:	BC
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Calcium		49.9	mg/L	1	0.500
Dissolved Potassium		5.93	mg/L	1	0.500
Dissolved Magnesium		12.3	mg/L	1	0.500
Dissolved Sodium		116	mg/L	1	0.500

Sample: 15306 - Excavated Well

Analysis:	Cd, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Cadmium		0.0120	mg/L	1	0.00500

Sample: 15306 - Excavated Well

Analysis:	Cr, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Chromium		0.0120	mg/L	1	0.0100

Sample: 15306 - Excavated Well

Analysis:	Cu, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Copper		<0.0125	mg/L	1	0.0125

Sample: 15306 - Excavated Well

Analysis:	Fe, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Iron		<0.0500	mg/L	1	0.0500

Sample: 15306 - Excavated Well

Analysis:	Hg, Dissolved	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	3857	Date Analyzed:	2003-08-19	Analyzed By:	BC
Prep Batch:	3462	Date Prepared:	2003-08-18	Prepared By:	BC

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Mercury		<0.000200		mg/L	1	0.000200

Sample: 15306 - Excavated Well

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	3756	Date Analyzed:	2003-08-15	Analyzed By:	JSW
Prep Batch:	3379	Date Prepared:	2003-08-14	Prepared By:	JSW
QC Batch:	3823	Date Analyzed:	2003-08-19	Analyzed By:	JSW
Prep Batch:	3431	Date Prepared:	2003-08-18	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		285		mg/L	10	0.500
Fluoride		<1.00		mg/L	5	0.200
Sulfate		5.25		mg/L	5	0.500

Sample: 15306 - Excavated Well

Analysis:	Mn, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Manganese		0.286		mg/L	1	0.0250

Sample: 15306 - Excavated Well

Analysis:	NO2 (Spec)	Analytical Method:	SM 4500-NO2 B	Prep Method:	N/A
QC Batch:	3757	Date Analyzed:	2003-08-15	Analyzed By:	JSW
Prep Batch:	3380	Date Prepared:	2003-08-15	Prepared By:	JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Nitrite-N		<0.0100		mg/L	1	0.0100

Sample: 15306 - Excavated Well

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	3756	Date Analyzed:	2003-08-15	Analyzed By:	JSW
Prep Batch:	3379	Date Prepared:	2003-08-14	Prepared By:	JSW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		<1.00	mg/L	5	0.200

Sample: 15306 - Excavated Well

Analysis:	Pb, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Lead		<0.0100	mg/L	1	0.0100

Sample: 15306 - Excavated Well

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	3830	Date Analyzed:	2003-08-14	Analyzed By:	RS
Prep Batch:	3438	Date Prepared:	2003-08-14	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
pH	[1]	7.20	s.u.	1	0.00

Sample: 15306 - Excavated Well

Analysis:	Se, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Selenium		<0.0100	mg/L	1	0.0100

Sample: 15306 - Excavated Well

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	3813	Date Analyzed:	2003-08-18	Analyzed By:	RC
Prep Batch:	3411	Date Prepared:	2003-08-17	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Pyridine		<0.00500	mg/L	0.001	5.00
n-Nitrosodimethylamine		<0.00500	mg/L	0.001	5.00
2-Picoline		<0.00500	mg/L	0.001	5.00
Methyl methanesulfonate		<0.00500	mg/L	0.001	5.00
Ethyl methanesulfonate		<0.00500	mg/L	0.001	5.00

continued ...

[1] received out of holding time

sample 15306 continued ...

Parameter	Flag	Result	RL	Units	Dilution	RL
Phenol		<0.00500		mg/L	0.001	5.00
Aniline		<0.00500		mg/L	0.001	5.00
bis(2-chloroethyl)ether		<0.00500		mg/L	0.001	5.00
2-Chlorophenol		<0.00500		mg/L	0.001	5.00
1,3-Dichlorobenzene (meta)		<0.00500		mg/L	0.001	5.00
1,4-Dichlorobenzene (para)		<0.00500		mg/L	0.001	5.00
Benzyl alcohol		<0.00500		mg/L	0.001	5.00
1,2-Dichlorobenzene (ortho)		<0.00500		mg/L	0.001	5.00
2-Methylphenol		<0.00500		mg/L	0.001	5.00
bis(2-chloroisopropyl)ether		<0.00500		mg/L	0.001	5.00
4-Methylphenol / 3-Methylphenol		<0.00500		mg/L	0.001	5.00
n-Nitrosodi-n-propylamine		<0.00500		mg/L	0.001	5.00
Hexachloroethane		<0.00500		mg/L	0.001	5.00
Acetophenone		<0.00500		mg/L	0.001	5.00
Nitrobenzene		<0.00500		mg/L	0.001	5.00
n-Nitrosopiperidine		<0.00500		mg/L	0.001	5.00
Isophorone		<0.00500		mg/L	0.001	5.00
2-Nitrophenol		<0.00500		mg/L	0.001	5.00
2,4-Dimethylphenol		<0.00500		mg/L	0.001	5.00
bis(2-chloroethoxy)methane		<0.00500		mg/L	0.001	5.00
2,4-Dichlorophenol		<0.00500		mg/L	0.001	5.00
1,2,4-Trichlorobenzene		<0.00500		mg/L	0.001	5.00
Benzoic acid		<0.0200		mg/L	0.001	20.0
Naphthalene		<0.00500		mg/L	0.001	5.00
a,a-Dimethylphenethylamine		<0.00500		mg/L	0.001	5.00
4-Chloroaniline		<0.00500		mg/L	0.001	5.00
2,6-Dichlorophenol		<0.00500		mg/L	0.001	5.00
Hexachlorobutadiene		<0.00500		mg/L	0.001	5.00
n-Nitroso-di-n-butylamine		<0.00500		mg/L	0.001	5.00
4-Chloro-3-methylphenol		<0.00500		mg/L	0.001	5.00
2-Methylnaphthalene		<0.00500		mg/L	0.001	5.00
1-Methylnaphthalene		<0.00500		mg/L	0.001	5.00
1,2,4,5-Tetrachlorobenzene		<0.00500		mg/L	0.001	5.00
Hexachlorocyclopentadiene		<0.00500		mg/L	0.001	5.00
2,4,6-Trichlorophenol		<0.00500		mg/L	0.001	5.00
2,4,5-Trichlorophenol		<0.00500		mg/L	0.001	5.00
2-Chloronaphthalene		<0.00500		mg/L	0.001	5.00
1-Chloronaphthalene		<0.00500		mg/L	0.001	5.00
2-Nitroaniline		<0.00500		mg/L	0.001	5.00
Dimethylphthalate		<0.00500		mg/L	0.001	5.00
Acenaphthylene		<0.00500		mg/L	0.001	5.00
2,6-Dinitrotoluene		<0.00500		mg/L	0.001	5.00
3-Nitroaniline		<0.00500		mg/L	0.001	5.00
Acenaphthene		<0.00500		mg/L	0.001	5.00
2,4-Dinitrophenol		<0.0200		mg/L	0.001	20.0
Dibenzofuran		<0.00500		mg/L	0.001	5.00
Pentachlorobenzene		<0.00500		mg/L	0.001	5.00
4-Nitrophenol		<0.00500		mg/L	0.001	5.00
2,4-Dinitrotoluene		<0.00500		mg/L	0.001	5.00
1-Naphthylamine		<0.00500		mg/L	0.001	5.00
2,3,4,6-Tetrachlorophenol		<0.00500		mg/L	0.001	5.00

continued ...

sample 15306 continued ...

Parameter	Flag	Result	RL	Units	Dilution	RL
2-Naphthylamine		<0.00500		mg/L	0.001	5.00
Fluorene		<0.00500		mg/L	0.001	5.00
4-Chlorophenyl-phenylether		<0.00500		mg/L	0.001	5.00
Diethylphthalate		<0.00500		mg/L	0.001	5.00
4-Nitroaniline		<0.00500		mg/L	0.001	5.00
Diphenylhydrazine		<0.00500		mg/L	0.001	5.00
4,6-Dinitro-2-methylphenol		<0.00500		mg/L	0.001	5.00
Diphenylamine		<0.00500		mg/L	0.001	5.00
4-Bromophenyl-phenylether		<0.00500		mg/L	0.001	5.00
Phenacetin		<0.00500		mg/L	0.001	5.00
Hexachlorobenzene		<0.00500		mg/L	0.001	5.00
4-Aminobiphenyl		<0.00500		mg/L	0.001	5.00
Pentachlorophenol		<0.00500		mg/L	0.001	5.00
Anthracene		<0.00500		mg/L	0.001	5.00
Pentachloronitrobenzene		<0.00500		mg/L	0.001	5.00
Pronamide		<0.00500		mg/L	0.001	5.00
Phenanthrene		<0.00500		mg/L	0.001	5.00
Di-n-butylphthalate		<0.00500		mg/L	0.001	5.00
Fluoranthene		<0.00500		mg/L	0.001	5.00
Benzidine		<0.0150		mg/L	0.001	15.0
Pyrene		<0.00500		mg/L	0.001	5.00
p-Dimethylaminoazobenzene		<0.00500		mg/L	0.001	5.00
Butylbenzylphthalate		<0.00500		mg/L	0.001	5.00
Benzo(a)anthracene		<0.00500		mg/L	0.001	5.00
3,3-Dichlorobenzidine		<0.00500		mg/L	0.001	5.00
Chrysene		<0.00500		mg/L	0.001	5.00
bis(2-ethylhexyl)phthalate		<0.0100		mg/L	0.001	10.0
Di-n-octylphthalate		<0.00500		mg/L	0.001	5.00
Benzo(b)fluoranthene		<0.00500		mg/L	0.001	5.00
Benzo(k)fluoranthene		<0.00500		mg/L	0.001	5.00
7,12-Dimethylbenz(a)anthracene		<0.00500		mg/L	0.001	5.00
Benzo(a)pyrene		<0.00500		mg/L	0.001	5.00
3-Methylcholanthrene		<0.00500		mg/L	0.001	5.00
Dibenzo(a,j)acridine		<0.00500		mg/L	0.001	5.00
Indeno(1,2,3-cd)pyrene		<0.00500		mg/L	0.001	5.00
Dibenzo(a,h)anthracene		<0.00500		mg/L	0.001	5.00
Benzo(g,h,i)perylene		<0.00500		mg/L	0.001	5.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0225	mg/L	0.001	80.0	28	0 - 94
Phenol-d5		0.0135	mg/L	0.001	80.0	17	0 - 67
Nitrobenzene-d5		0.0596	mg/L	0.001	80.0	74	6.75 - 138.7
2-Fluorobiphenyl		0.0650	mg/L	0.001	80.0	81	14.7 - 135
2,4,6-Tribromophenol		0.0586	mg/L	0.001	80.0	73	44.92 - 152
Terphenyl-d14		0.0572	mg/L	0.001	80.0	72	44.49 - 162.36

Sample: 15306 - Excavated Well

Analysis: TDS | Analytical Method: SM 2540C | Prep Method: N/A

QC Batch: 3734 | Date Analyzed: 2003-08-15 | Analyzed By: JSW
Prep Batch: 3360 | Date Prepared: 2003-08-14 | Prepared By: JSW

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		583.0		mg/L	1	10.00

Sample: 15306 - Excavated Well

Analysis: TPH DRO | Analytical Method: Mod. 8015B | Prep Method: N/A
QC Batch: 3747 | Date Analyzed: 2003-08-14 | Analyzed By: BP
Prep Batch: 3372 | Date Prepared: 2003-08-14 | Prepared By: DS

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<5.00		mg/L	0.1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		7.72	mg/L	0.1	150	51	44 - 123

Sample: 15306 - Excavated Well

Analysis: TPH GRO | Analytical Method: S 8015B | Prep Method: S 5030B
QC Batch: 3765 | Date Analyzed: 2003-08-15 | Analyzed By: MT
Prep Batch: 3388 | Date Prepared: 2003-08-15 | Prepared By: MT

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<0.100		mg/L	1	0.100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	73 - 120
4-Bromofluorobenzene (4-BFB)	[2]	0.0688	mg/L	1	0.100	69	78 - 120

Sample: 15306 - Excavated Well

Analysis: Volatiles | Analytical Method: S 8260B | Prep Method: S 5030B
QC Batch: 3782 | Date Analyzed: 2003-08-17 | Analyzed By: JG
Prep Batch: 3404 | Date Prepared: 2003-08-17 | Prepared By: JG

Parameter	Flag	Result	RL	Units	Dilution	RL
Bromochloromethane		<1.00		µg/L	1	1.00
Dichlorodifluoromethane		<1.00		µg/L	1	1.00
Chloromethane (methyl chloride)		<1.00		µg/L	1	1.00
Vinyl Chloride		<1.00		µg/L	1	1.00
Bromomethane (methyl bromide)		<5.00		µg/L	1	5.00

continued ...

[2]Low BFB surrogate recovery due to prep. TFT surrogate recovery shows the method to be in control.

sample 15306 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Chloroethane		<1.00	µg/L	1	1.00
Trichlorofluoromethane		<1.00	µg/L	1	1.00
Acetone		<10.0	µg/L	1	10.0
Iodomethane (methyl iodide)		6.88	µg/L	1	5.00
Carbon Disulfide		<1.00	µg/L	1	1.00
Acrylonitrile		<1.00	µg/L	1	1.00
2-Butanone (MEK)		<5.00	µg/L	1	5.00
4-Methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5.00
2-Hexanone		<5.00	µg/L	1	5.00
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10.0
1,1-Dichloroethene		<1.00	µg/L	1	1.00
Methylene chloride		<5.00	µg/L	1	5.00
MTBE		<1.00	µg/L	1	1.00
trans-1,2-Dichloroethene		<1.00	µg/L	1	1.00
1,1-Dichloroethane		<1.00	µg/L	1	1.00
cis-1,2-Dichloroethene		<1.00	µg/L	1	1.00
2,2-Dichloropropane		<1.00	µg/L	1	1.00
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1.00
Chloroform		<1.00	µg/L	1	1.00
1,1,1-Trichloroethane		<1.00	µg/L	1	1.00
1,1-Dichloropropene		<1.00	µg/L	1	1.00
Benzene		<1.00	µg/L	1	1.00
Carbon Tetrachloride		<1.00	µg/L	1	1.00
1,2-Dichloropropane		<1.00	µg/L	1	1.00
Trichloroethene (TCE)		<1.00	µg/L	1	1.00
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1.00
Bromodichloromethane		<1.00	µg/L	1	1.00
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5.00
cis-1,3-Dichloropropene		<1.00	µg/L	1	1.00
trans-1,3-Dichloropropene		<1.00	µg/L	1	1.00
Toluene		<1.00	µg/L	1	1.00
1,1,2-Trichloroethane		<1.00	µg/L	1	1.00
1,3-Dichloropropane		<1.00	µg/L	1	1.00
Dibromochloromethane		<1.00	µg/L	1	1.00
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1.00
Tetrachloroethene (PCE)		<1.00	µg/L	1	1.00
Chlorobenzene		<1.00	µg/L	1	1.00
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1.00
Ethylbenzene		<1.00	µg/L	1	1.00
m,p-Xylene		<1.00	µg/L	1	1.00
Bromoform		<1.00	µg/L	1	1.00
Styrene		<1.00	µg/L	1	1.00
o-Xylene		<1.00	µg/L	1	1.00
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1.00
2-Chlorotoluene		<1.00	µg/L	1	1.00
1,2,3-Trichloropropane		<1.00	µg/L	1	1.00
Isopropylbenzene		<1.00	µg/L	1	1.00
Bromobenzene		<1.00	µg/L	1	1.00
n-Propylbenzene		<1.00	µg/L	1	1.00
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1.00
tert-Butylbenzene		<1.00	µg/L	1	1.00

continued ...

sample 15306 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1.00
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1.00
sec-Butylbenzene		<1.00	µg/L	1	1.00
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1.00
p-Isopropyltoluene		<1.00	µg/L	1	1.00
4-Chlorotoluene		<1.00	µg/L	1	1.00
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1.00
n-Butylbenzene		<1.00	µg/L	1	1.00
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5.00
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5.00
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5.00
Naphthalene		<5.00	µg/L	1	5.00
Hexachlorobutadiene		<5.00	µg/L	1	5.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.6	µg/L	1	50.0	97	70 - 130
Toluene-d8		48.3	µg/L	1	50.0	97	70 - 130
4-Bromofluorobenzene (4-BFB)		48.8	µg/L	1	50.0	98	70 - 130

Sample: 15306 - Excavated Well

Analysis:	Zn, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	3849	Date Analyzed:	2003-08-19	Analyzed By:	RR
Prep Batch:	3385	Date Prepared:	2003-08-15	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Zinc		<0.0250	mg/L	1	0.0250

Method Blank (1) QC Batch: 3734

Parameter	Flag	Result	Units	RL
Total Dissolved Solids		<10.00	mg/L	10

Method Blank (1) QC Batch: 3747

Parameter	Flag	Result	Units	RL
DRO		<5.00	mg/L	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		8.27	mg/L	0.1	150	55	44 - 123

Method Blank (1) QC Batch: 3756

Parameter	Flag	Result	Units	RL
Nitrate-N		<0.200	mg/L	0.2

Method Blank (1) QC Batch: 3756

Parameter	Flag	Result	Units	RL
Fluoride		<0.200	mg/L	0.2
Sulfate		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 3757

Parameter	Flag	Result	Units	RL
Nitrite-N		<0.0100	mg/L	0.01

Method Blank (1) QC Batch: 3765

Parameter	Flag	Result	Units	RL
GRO		0.216	mg/L	0.1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.101	mg/L	1	0.100	101	73 - 120
4-Bromofluorobenzene (4-BFB)	[3]	0.0658	mg/L	1	0.100	66	78 - 120

Method Blank (1) QC Batch: 3782

Parameter	Flag	Result	Units	RL
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1

continued ...

[3]Low BFB surrogate recovery due to prep. TFT surrogate recovery shows the method to be in control.

method blank continued ...

Parameter	Flag	Result	Units	RL
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-Methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-Hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1

continued ...

method blank continued ...

Parameter	Flag	Result	Units	RL
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.5	µg/L	1	50.0	93	70 - 130
Toluene-d8		48.5	µg/L	1	50.0	97	70 - 130
4-Bromofluorobenzene (4-BFB)		49.9	µg/L	1	50.0	100	70 - 130

Method Blank (1) QC Batch: 3806

Parameter	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<4.00	mg/L as CaCo3	4

Method Blank (1) QC Batch: 3813

Parameter	Flag	Result	Units	RL
Pyridine		<0.00500	mg/L	5
n-Nitrosodimethylamine		<0.00500	mg/L	5
2-Picoline		<0.00500	mg/L	5
Methyl methanesulfonate		<0.00500	mg/L	5
Ethyl methanesulfonate		<0.00500	mg/L	5
Phenol		<0.00500	mg/L	5
Aniline		<0.00500	mg/L	5
bis(2-chloroethyl)ether		<0.00500	mg/L	5
2-Chlorophenol		<0.00500	mg/L	5
1,3-Dichlorobenzene (meta)		<0.00500	mg/L	5
1,4-Dichlorobenzene (para)		<0.00500	mg/L	5
Benzyl alcohol		<0.00500	mg/L	5
1,2-Dichlorobenzene (ortho)		<0.00500	mg/L	5
2-Methylphenol		<0.00500	mg/L	5
bis(2-chloroisopropyl)ether		<0.00500	mg/L	5
4-Methylphenol / 3-Methylphenol		<0.00500	mg/L	5
n-Nitrosodi-n-propylamine		<0.00500	mg/L	5
Hexachloroethane		<0.00500	mg/L	5

continued ...

method blank continued ...

Parameter	Flag	Result	Units	RL
Acetophenone		<0.00500	mg/L	5
Nitrobenzene		<0.00500	mg/L	5
n-Nitrosopiperidine		<0.00500	mg/L	5
Isophorone		<0.00500	mg/L	5
2-Nitrophenol		<0.00500	mg/L	5
2,4-Dimethylphenol		<0.00500	mg/L	5
bis(2-chloroethoxy)methane		<0.00500	mg/L	5
2,4-Dichlorophenol		<0.00500	mg/L	5
1,2,4-Trichlorobenzene		<0.00500	mg/L	5
Benzoic acid		<0.0200	mg/L	20
Naphthalene		<0.00500	mg/L	5
a,a-Dimethylphenethylamine		<0.00500	mg/L	5
4-Chloroaniline		<0.00500	mg/L	5
2,6-Dichlorophenol		<0.00500	mg/L	5
Hexachlorobutadiene		<0.00500	mg/L	5
n-Nitroso-di-n-butylamine		<0.00500	mg/L	5
4-Chloro-3-methylphenol		<0.00500	mg/L	5
2-Methylnaphthalene		<0.00500	mg/L	5
1-Methylnaphthalene		<0.00500	mg/L	5
1,2,4,5-Tetrachlorobenzene		<0.00500	mg/L	5
Hexachlorocyclopentadiene		<0.00500	mg/L	5
2,4,6-Trichlorophenol		<0.00500	mg/L	5
2,4,5-Trichlorophenol		<0.00500	mg/L	5
2-Chloronaphthalene		<0.00500	mg/L	5
1-Chloronaphthalene		<0.00500	mg/L	5
2-Nitroaniline		<0.00500	mg/L	5
Dimethylphthalate		<0.00500	mg/L	5
Acenaphthylene		<0.00500	mg/L	5
2,6-Dinitrotoluene		<0.00500	mg/L	5
3-Nitroaniline		<0.00500	mg/L	5
Acenaphthene		<0.00500	mg/L	5
2,4-Dinitrophenol		<0.0200	mg/L	20
Dibenzofuran		<0.00500	mg/L	5
Pentachlorobenzene		<0.00500	mg/L	5
4-Nitrophenol		<0.00500	mg/L	5
2,4-Dinitrotoluene		<0.00500	mg/L	5
1-Naphthylamine		<0.00500	mg/L	5
2,3,4,6-Tetrachlorophenol		<0.00500	mg/L	5
2-Naphthylamine		<0.00500	mg/L	5
Fluorene		<0.00500	mg/L	5
4-Chlorophenyl-phenylether		<0.00500	mg/L	5
Diethylphthalate		<0.00500	mg/L	5
4-Nitroaniline		<0.00500	mg/L	5
Diphenylhydrazine		<0.00500	mg/L	5
4,6-Dinitro-2-methylphenol		<0.00500	mg/L	5
Diphenylamine		<0.00500	mg/L	5
4-Bromophenyl-phenylether		<0.00500	mg/L	5
Phenacetin		<0.00500	mg/L	5
Hexachlorobenzene		<0.00500	mg/L	5
4-Aminobiphenyl		<0.00500	mg/L	5
Pentachlorophenol		<0.00500	mg/L	5
Anthracene		<0.00500	mg/L	5

continued ...

method blank continued ...

Parameter	Flag	Result	Units	RL
Pentachloronitrobenzene		<0.00500	mg/L	5
Pronamide		<0.00500	mg/L	5
Phenanthrene		<0.00500	mg/L	5
Di-n-butylphthalate		<0.00500	mg/L	5
Fluoranthene		<0.00500	mg/L	5
Benzidine		<0.0150	mg/L	15
Pyrene		<0.00500	mg/L	5
p-Dimethylaminoazobenzene		<0.00500	mg/L	5
Butylbenzylphthalate		<0.00500	mg/L	5
Benzo(a)anthracene		<0.00500	mg/L	5
3,3-Dichlorobenzidine		<0.00500	mg/L	5
Chrysene		<0.00500	mg/L	5
bis(2-ethylhexyl)phthalate		<0.0100	mg/L	10
Di-n-octylphthalate		<0.00500	mg/L	5
Benzo(b)fluoranthene		<0.00500	mg/L	5
Benzo(k)fluoranthene		<0.00500	mg/L	5
7,12-Dimethylbenz(a)anthracene		<0.00500	mg/L	5
Benzo(a)pyrene		<0.00500	mg/L	5
3-Methylcholanthrene		<0.00500	mg/L	5
Dibenzo(a,j)acridine		<0.00500	mg/L	5
Indeno(1,2,3-cd)pyrene		<0.00500	mg/L	5
Dibenzo(a,h)anthracene		<0.00500	mg/L	5
Benzo(g,h,i)perylene		<0.00500	mg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0453	mg/L	0.001	80.0	57	0 - 94.7
Phenol-d5		0.0269	mg/L	0.001	80.0	34	0 - 67.64
Nitrobenzene-d5		0.0670	mg/L	0.001	80.0	84	6.75 - 138.7
2-Fluorobiphenyl		0.0719	mg/L	0.001	80.0	90	14.71 - 134.97
2,4,6-Tribromophenol		0.0594	mg/L	0.001	80.0	74	44.92 - 152.29
Terphenyl-d14		0.0716	mg/L	0.001	80.0	90	44.49 - 162.36

Method Blank (1) QC Batch: 3823

Parameter	Flag	Result	Units	RL
Chloride		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Silver		<0.0130	mg/L	0.013

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Arsenic		<0.0100	mg/L	0.01

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Barium		<0.0100	mg/L	0.01

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Cadmium		<0.00500	mg/L	0.005

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Chromium		<0.0100	mg/L	0.01

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Copper		<0.0125	mg/L	0.0125

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Iron		<0.0500	mg/L	0.05

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Manganese		<0.0250	mg/L	0.025

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Lead		<0.0100	mg/L	0.01

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Selenium		<0.0100	mg/L	0.01

Method Blank (1) QC Batch: 3849

Parameter	Flag	Result	Units	RL
Dissolved Zinc		<0.0250	mg/L	0.025

Method Blank (1) QC Batch: 3857

Parameter	Flag	Result	Units	RL
Dissolved Mercury		<0.000200	mg/L	0.0002

Method Blank (1) QC Batch: 3866

Parameter	Flag	Result	Units	RL
Dissolved Calcium		<0.500	mg/L	0.5
Dissolved Potassium		<0.500	mg/L	0.5
Dissolved Magnesium		<0.500	mg/L	0.5
Dissolved Sodium		0.501	mg/L	0.5

Duplicate (1) QC Batch: 3734

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2998	2810	mg/L	2	6	9.41

Duplicate (1) QC Batch: 3806

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	5.81
Carbonate Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	5.81
Bicarbonate Alkalinity	104	108	mg/L as CaCo3	1	4	5.81

continued ...

duplicate continued ...

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Alkalinity	104	108	mg/L as CaCo3	1	4	5.81

Duplicate (1) QC Batch: 3830

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	[4]	3.70	3.70	s.u.	1	0	0

Laboratory Control Spike (LCS-1) QC Batch: 3747

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
DRO	22.5	27.0	mg/L	0.1	250	<0.230	90	18	86 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	8.38	9.92	mg/L	0.1	150	56	66	44 - 123

Laboratory Control Spike (LCS-1) QC Batch: 3756

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	2.36	2.33	mg/L	1	2.50	<0.126	94	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3756

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	2.50	2.38	mg/L	1	2.50	<0.0153	100	5	90 - 110	20
Sulfate	12.5	12.2	mg/L	1	12.5	<0.171	100	2	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3757

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrite-N	0.0830	0.0813	mg/L	1	0.0800	<0.000820	104	2	95 - 106	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3765

[4]received out of holding time

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
GRO	0.933	0.950	mg/L	1	1.00	<0.0261	93	2	78.1 - 124	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)		0.104	0.106	mg/L	1	0.100	104	106	73 - 120
4-Bromofluorobenzene (4-BFB)	[5,6]	0.0711	0.0705	mg/L	1	0.100	71	70	78 - 120

Laboratory Control Spike (LCS-1) QC Batch: 3782

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
1,1-Dichloroethene	103	101	µg/L	1	100	<0.136	103	2	70 - 130	20
Benzene	101	102	µg/L	1	100	<0.146	101	1	70 - 130	20
Trichloroethene (TCE)	105	108	µg/L	1	100	<0.117	105	3	70 - 130	20
Toluene	100	101	µg/L	1	100	0.09	100	1	70 - 130	20
Chlorobenzene	100	102	µg/L	1	100	<0.0540	100	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.9	47.9	µg/L	1	50.0	98	96	70 - 130
Toluene-d8	49.0	49.3	µg/L	1	50.0	98	99	70 - 130
4-Bromofluorobenzene (4-BFB)	50.9	52.2	µg/L	1	50.0	102	104	70 - 130

Laboratory Control Spike (LCS-1) QC Batch: 3813

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Phenol	26.7	25.2	mg/L	1	80.0	<0.490	33	6	1 - 56.82	20
2-Chlorophenol	53.1	52.0	mg/L	1	80.0	<1.63	66	2	13.99 - 107.11	20
1,4-Dichlorobenzene (para)	57.6	57.6	mg/L	1	80.0	<1.93	72	0	9.09 - 113.45	20
n-Nitrosodi-n-propylamine	64.4	55.0	mg/L	1	80.0	<2.26	80	16	17.91 - 139.92	20
1,2,4-Trichlorobenzene	62.4	63.7	mg/L	1	80.0	<1.52	78	2	16.63 - 117.68	20
4-Chloro-3-methylphenol	50.8	43.9	mg/L	1	80.0	<1.60	64	14	22.33 - 107.93	20
Acenaphthene	73.0	71.6	mg/L	1	80.0	<1.58	91	2	36.91 - 123.61	20
4-Nitrophenol	25.4	25.0	mg/L	1	80.0	<3.83	32	2	0 - 69.1	20
2,4-Dinitrotoluene	74.4	74.1	mg/L	1	80.0	<2.09	93	0	44.81 - 136.34	20
Pentachlorophenol	63.5	64.7	mg/L	1	80.0	<3.04	79	2	28.5 - 125.7	20
Pyrene	82.0	80.8	mg/L	1	80.0	<1.81	102	1	42.61 - 159.68	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
2-Fluorophenol	48.2	45.7	mg/L	1	80.0	60	57	0 - 94.7
Phenol-d5	34.0	32.5	mg/L	1	80.0	42	41	0 - 67.6
Nitrobenzene-d5	74.2	76.2	mg/L	1	80.0	93	95	6.75 - 139

continued ...

[5]Low BFB surrogate recovery due to prep. TFT surrogate recovery shows the method to be in control.
[6]Low BFB surrogate recovery due to prep. TFT surrogate recovery shows the method to be in control.

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
2-Fluorobiphenyl	82.9	82.4	mg/L	1	80.0	104	103	14.7 - 135
2,4,6-Tribromophenol	76.9	77.6	mg/L	1	80.0	96	97	44.9 - 152
Terphenyl-d14	85.5	84.8	mg/L	1	80.0	107	106	44.5 - 162

Laboratory Control Spike (LCS-1) QC Batch: 3823

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	12.4	12.5	mg/L	1	12.5	<1.49	99	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Silver	0.110	0.111	mg/L	1	0.125	<0.000779	88	1	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Arsenic	0.423	0.516	mg/L	1	0.500	<0.00593	85	20	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Barium	0.858	0.962	mg/L	1	1.00	<0.000343	86	11	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Cadmium	0.230	0.238	mg/L	1	0.250	<0.000268	92	3	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Chromium	0.0950	0.103	mg/L	1	0.100	<0.000660	95	8	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Copper	0.108	0.113	mg/L	1	0.125	<0.00177	86	4	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Iron	0.422	0.480	mg/L	1	0.500	<0.00220	84	13	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Manganese	0.224	0.257	mg/L	1	0.250	<0.000275	90	14	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Lead	0.415	0.437	mg/L	1	0.500	<0.00367	83	5	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Selenium	0.441	0.472	mg/L	1	0.500	<0.00650	88	7	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3849

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Zinc	0.216	0.220	mg/L	1	0.250	<0.00907	86	2	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3857

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Mercury	0.00113	0.000980	mg/L	1	0.00100	<0.0000360	113	14	86.7 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 3866

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Calcium	91.7	89.9	mg/L	1	100	<0.183	92	2	85 - 115	20
Dissolved Potassium	95.5	97.5	mg/L	1	100	<0.135	96	2	85 - 115	20
Dissolved Magnesium	90.6	91.1	mg/L	1	100	<0.183	91	0	85 - 115	20
Dissolved Sodium	94.7	93.6	mg/L	1	100	<0.105	95	1	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3756

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	249	247	mg/L	100	2.50	<12.6	100	1	62.2 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3756

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Fluoride	193	190	mg/L	100	2.50	11.7	72	2	30.1 - 187	20
Sulfate	2900	2900	mg/L	100	12.5	1640	101	0	69.9 - 114	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3757

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrite-N	0.0739	0.0765	mg/L	1	0.0800	<0.000820	92	3	65.9 - 119	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3823

continued ...

matrix spikes continued ...

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	1660	1660	mg/L	100	12.5	594	85	0	32.7 - 136	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Silver	0.127	0.139	mg/L	1	0.125	<0.000779	102	9	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Arsenic	0.470	0.445	mg/L	1	0.500	<0.00593	94	5	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Barium	0.996	1.02	mg/L	1	1.00	<0.000343	100	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Cadmium	0.249	0.254	mg/L	1	0.250	<0.000268	100	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Chromium	0.101	0.104	mg/L	1	0.100	<0.000660	101	3	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Copper	0.100	0.105	mg/L	1	0.125	<0.00177	80	5	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Iron	0.521	0.548	mg/L	1	0.500	<0.00220	104	5	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Manganese	0.261	0.263	mg/L	1	0.250	0.021	96	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Lead	0.578	0.552	mg/L	1	0.500	<0.00367	116	5	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Selenium	0.376	0.381	mg/L	1	0.500	<0.00650	75	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3849

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Zinc	0.544	0.546	mg/L	1	0.250	0.326	87	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3857

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Mercury	0.00147	0.00148	mg/L	1	0.00100	<0.0000360	147	1	40 - 177	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 3866

Param		MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Calcium		140	125	mg/L	1	100	49.9	90	11	75 - 125	20
Dissolved Potassium		103	97.2	mg/L	1	100	5.93	97	6	75 - 125	20
Dissolved Magnesium	[7,8]	84.4	79.7	mg/L	1	100	12.3	72	6	75 - 125	20
Dissolved Sodium		226	202	mg/L	1	100	116	110	11	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1) QC Batch: 3734

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1019	102	90 - 110	2003-08-15

Standard (CCV-1) QC Batch: 3734

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1002	100	90 - 110	2003-08-15

Standard (ICV-1) QC Batch: 3747

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	238	95	75 - 125	2003-08-14

Standard (CCV-1) QC Batch: 3747

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	225	90	75 - 125	2003-08-14

Standard (ICV-1) QC Batch: 3756

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.35	94	90 - 110	2003-08-15

[7]ms recovery out of range due to matrix effect/spiking error, use lcs/lcsd
[8]ms recovery out of range due to matrix effect/spiking error, use lcs/lcsd

Standard (ICV-1) QC Batch: 3756

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.42	97	90 - 110	2003-08-15
Sulfate		mg/L	12.5	12.3	98	90 - 110	2003-08-15

Standard (CCV-1) QC Batch: 3756

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.33	93	90 - 110	2003-08-15

Standard (CCV-1) QC Batch: 3756

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Fluoride		mg/L	2.50	2.36	94	90 - 110	2003-08-15
Sulfate		mg/L	12.5	12.2	98	90 - 110	2003-08-15

Standard (ICV-1) QC Batch: 3757

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrite-N		mg/L	0.0800	0.0816	102	85 - 115	2003-08-15

Standard (CCV-1) QC Batch: 3757

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrite-N		mg/L	0.0800	0.0807	101	85 - 115	2003-08-15

Standard (ICV-1) QC Batch: 3765

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.14	114	85 - 115	2003-08-15

Standard (CCV-1) QC Batch: 3765

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.05	105	85 - 115	2003-08-15

Standard (CCV-1) QC Batch: 3782

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50.0	49.1	98	80 - 120	2003-08-17
1,1-Dichloroethene		µg/L	50.0	46.4	93	80 - 120	2003-08-17
Chloroform		µg/L	50.0	46.3	93	80 - 120	2003-08-17
1,2-Dichloropropane		µg/L	50.0	48.5	97	80 - 120	2003-08-17
Toluene		µg/L	50.0	49.4	99	80 - 120	2003-08-17
Chlorobenzene		µg/L	50.0	49.5	99	80 - 120	2003-08-17
Ethylbenzene		µg/L	50.0	51.2	102	80 - 120	2003-08-17

Standard (ICV-1) QC Batch: 3806

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2003-08-15
Carbonate Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2003-08-15
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	<4.00		0 - 200	2003-08-15
Total Alkalinity		mg/L as CaCo3	250	250	100	90 - 110	2003-08-15

Standard (CCV-1) QC Batch: 3806

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2003-08-15
Carbonate Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2003-08-15
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	<4.00		0 - 200	2003-08-15
Total Alkalinity		mg/L as CaCo3	250	240	96	90 - 110	2003-08-15

Standard (CCV-1) QC Batch: 3813

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Phenol		mg/L	60.0	70.0	117	80 - 120	2003-08-18
1,4-Dichlorobenzene (para)		mg/L	60.0	57.8	96	80 - 120	2003-08-18
2-Nitrophenol		mg/L	60.0	54.2	90	80 - 120	2003-08-18
2,4-Dichlorophenol		mg/L	60.0	63.4	106	80 - 120	2003-08-18
Hexachlorobutadiene		mg/L	60.0	49.3	82	80 - 120	2003-08-18
4-Chloro-3-methylphenol		mg/L	60.0	61.4	102	80 - 120	2003-08-18
2,4,6-Trichlorophenol		mg/L	60.0	59.4	99	80 - 120	2003-08-18
Acenaphthene		mg/L	60.0	60.1	100	80 - 120	2003-08-18
Diphenylamine		mg/L	60.0	61.4	102	80 - 120	2003-08-18
Pentachlorophenol		mg/L	60.0	67.0	112	80 - 120	2003-08-18
Fluoranthene		mg/L	60.0	58.6	98	80 - 120	2003-08-18
Di-n-octylphthalate		mg/L	60.0	50.7	84	80 - 120	2003-08-18
Benzo(a)pyrene		mg/L	60.0	59.1	98	80 - 120	2003-08-18

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
2-Fluorophenol		61.8	mg/L	1	60.0	103	80 - 120
Phenol-d5		67.0	mg/L	1	60.0	112	80 - 120
Nitrobenzene-d5		60.0	mg/L	1	60.0	100	80 - 120
2-Fluorobiphenyl		61.7	mg/L	1	60.0	103	80 - 120
2,4,6-Tribromophenol		56.3	mg/L	1	60.0	94	80 - 120
Terphenyl-d14		55.2	mg/L	1	60.0	92	80 - 120

Standard (ICV-1) QC Batch: 3823

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.6	101	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3823

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.5	92	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3830

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.00	100	98 - 102	2003-08-14

Standard (CCV-1) QC Batch: 3830

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.00	100	98 - 102	2003-08-14

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Silver		mg/L	0.125	0.123	98	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Arsenic		mg/L	1.00	1.06	106	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Barium		mg/L	1.00	1.00	100	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Cadmium		mg/L	1.00	1.04	104	95 - 105	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	1.00	1.02	102	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Copper		mg/L	1.00	0.966	97	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Iron		mg/L	1.00	1.03	103	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Manganese		mg/L	1.00	1.01	101	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Lead		mg/L	1.00	0.967	97	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Selenium		mg/L	1.00	1.02	102	95 - 105	2003-08-19

Standard (ICV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Zinc		mg/L	1.00	1.06	106	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Silver		mg/L	0.125	0.129	103	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Arsenic		mg/L	1.00	1.09	109	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Barium		mg/L	1.00	1.08	108	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Cadmium		mg/L	1.00	1.06	106	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	1.00	0.975	98	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Copper		mg/L	1.00	0.923	92	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Iron		mg/L	1.00	0.964	96	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Manganese		mg/L	1.00	0.958	96	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Lead		mg/L	1.00	0.933	93	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Selenium		mg/L	1.00	0.902	90	90 - 110	2003-08-19

Standard (CCV-1) QC Batch: 3849

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Zinc		mg/L	1.00	0.984	98	90 - 110	2003-08-19

Standard (ICV-1) QC Batch: 3857

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Mercury		mg/L	0.00100	0.000900	90	80 - 120	2003-08-19

Standard (CCV-1) QC Batch: 3857

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Mercury		mg/L	0.00100	0.000900	90	80 - 120	2003-08-19

Standard (ICV-1) QC Batch: 3866

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25.0	25.0	100	90 - 110	2003-08-18
Dissolved Potassium		mg/L	25.0	26.0	104	90 - 110	2003-08-18
Dissolved Magnesium		mg/L	25.0	24.6	98	90 - 110	2003-08-18
Dissolved Sodium		mg/L	25.0	25.7	103	90 - 110	2003-08-18

Standard (CCV-1) QC Batch: 3866

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25.0	22.9	92	90 - 110	2003-08-18
Dissolved Potassium		mg/L	25.0	24.3	97	90 - 110	2003-08-18
Dissolved Magnesium		mg/L	25.0	23.5	94	90 - 110	2003-08-18
Dissolved Sodium		mg/L	25.0	23.8	95	90 - 110	2003-08-18

Page Number: 33 of 33 Hobbs

Work Order: 3081414 Champion

Report Date: August 20, 2003 CH 2100

CoC #78 Page 1 of 1

TraceAnalysis, Inc.

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

155 McCutcheon,Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3081414

Company Name: ETGI
Phone #: (432) 522-1139
Address: (Street, City, Zip) 4600 W. Wall, Midland, Tx 79703
Fax #: (432) 520-4310
Contact Person: Todd Knoban
Invoice to: (If different from above)
Project #: CH 2100
Project Name: Champion
Project Location: Hobbs, NM
Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
15306	Excavated Well	10		X								X		8/13/03	1050

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/2007	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD TSS pH	Turn Around Time if different from standard: Rush 24 hrs	Hold
															X	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	8-13-03	1510			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Carey	8/14/03	10:50

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact (Y) N
Headspace Y / (N)
Temp 1°C
Log-in Review

REMARKS:
See Attachment for Analysis Request
Filter samples prior to analysis for metals

☐ Check If Special Reporting Limits Are Needed

Carrier # TNMRD 903-112-0219

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

August 13, 2003

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 39299901

Mr. Ralph Corry
Champion Technologies, Inc.
P.O. Box 450499
Houston, Texas 77245

Re: Abatement Plan (AP-14)
Stage 2 Abatement Plan Proposal
Comprehensive Status Report
Champion's Hobbs, NM Facility GW-199

Dear Mr. Corry:

The New Mexico Oil Conservation Division (OCD) has completed a review of Champion Technologies, Inc.'s (Champion) March 31, 2003 Stage 2 Abatement Plan Comprehensive Status Report with addendum received on May 06, 2003, June 03, 2003 response to OCD's request for additional information dated May 08, 2003, and Champions E-mail response dated August 12, 2003 to OCD's comments dated August 05, 2003. These documents describe the procedures that Champion proposes to use to perform additional investigation, remediate and monitor the existing soil and groundwater impacts at the site. OCD hereby approves of the plan.

Please be advised that NMOCD approval of this plan does not relieve Champion Technologies, Inc.of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Champion Technologies, Inc. of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions, please contact Wayne Price of my staff at (505-476-3487) or E-mail WPRICE@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this abatement process.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/lwp
xc: OCD Hobbs Office

Price, Wayne

From: Ralph Corry [Ralph.Corry@CHAMP-TECH.com]
Sent: Tuesday, August 12, 2003 9:15 AM
To: Price, Wayne
Cc: Todd Choban (E-mail); Sheeley, Paul; Johnson, Larry; Melvin Davis
Subject: RE: Champion Abatement Plan AP-14

Champion Technologies, Inc. accepts your reply and recommendations in the email dated August 5, 2003.

Ralph Corry
Environmental Specialist
Champion Technologies, Inc.

-----Original Message-----
From: Price, Wayne [mailto:WPrice@state.nm.us]
Sent: Tuesday, August 05, 2003 5:51 PM
To: Price, Wayne; Ralph Corry
Cc: 'Todd Choban (E-mail)'; Sheeley, Paul; Johnson, Larry
Subject: RE: Champion Abatement Plan AP-14

Corrected version. <<Stg 2 approval 8_04_03.DOC>>

> -----Original Message-----
> From: Price, Wayne
> Sent: Tuesday, August 05, 2003 4:17 PM
> To: 'RALPH.CORRY@CHAMP-TECH.COM'
> Cc: Todd Choban (E-mail); Sheeley, Paul; Johnson, Larry
> Subject: Champion Abatement Plan AP-14
>
> << File: Stg 2 approval 8_04_03.DOC >>
>
> Sincerely:
> << OLE Object: Picture (Metafile) >>
> Wayne Price
> New Mexico Oil Conservation Division
> 1220 S. Saint Francis Drive
> Santa Fe, NM 87505
> 505-476-3487
> fax: 505-476-3462
> E-mail: WPRICE@state.nm.us
>
>
>
>

Price, Wayne

From: Price, Wayne
Sent: Tuesday, August 05, 2003 4:17 PM
To: 'RALPH.CORRY@CHAMP-TECH.COM'
Cc: Todd Choban (E-mail); Sheeley, Paul; Johnson, Larry
Subject: Champion Abatement Plan AP-14

Contacts: Ralph Corry

Stg 2 approval
8_04_03.DOC

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

August 05, 2003

E-MAIL:

Mr. Ralph Corry
Champion Technologies, Inc.
P.O. Box 450499
Houston, Texas 77245

Re: Abatement Plan (AP-14)
Stage 2 Abatement Plan Proposal
Comprehensive Status Report
Champion's Hobbs, NM Facility GW-199

Dear Mr. Corry:

The New Mexico Oil Conservation Division (OCD) has completed a review of Champion Technologies, Inc.'s (Champion) March 31, 2003 Stage 2 Abatement Plan Comprehensive Status Report with addendum received on May 06, 2003, and June 03, 2003 response to OCD's letter dated May 08, 2003 requesting additional information. These documents describe the procedures that Champion proposes to use to remediate and monitor the existing soil and groundwater impacts at the site.

OCD has evaluated Champions last response dated June 03, 2003 and will respond by line item as ***OCD Response:***

Required Information:

1. OCD requires a copy of the Hydrus model with instructions, input parameters, weather input data and a copy of the excel spreadsheet that contains the groundwater mixing model. Due to the complex nature of this model, OCD request a technical meeting with the consultant concerning the model and submitted report. ***OCD Response: Complete.***

2. Modeling Comments and Questions:

   A. OCD is having a difficult time understanding how calibration of the model can be made using a hypothetical one-time release at this particular site. Please explain. ***OCD Response: Explanation Complete.***

B. OCD does not agree using 80 or100 feet of aquifer thickness in the mixing model. OCD will require 10 feet. Please recalculate using 10 feet.
OCD Response: OCD agrees since long term monitoring includes monitoring at the base and top of the aquifer. Therefore Champion will include the on-site water for sampling.

C. Explanation of Fig #1 and #4: In Fig #1 (Simulated Chloride distribution in the Vadose zone) the units of the measured concentrations do not match the actual soil conditions. For example one point is labeled approximately 1.5 E+05. Is this ppm in soil or soil water and what are the units? Please explain and provide example calculations on how these numbers were obtained and which sample data was used.

OCD Response: Explanation Complete.

D. Engineering controls to reduce precipitation by 70 %. Please demonstrate that reducing precipitation is the same as reducing the infiltration. ***OCD Response: Explanation complete.***

E. Champion will have to demonstrate that a calichie pad will provide a proper barrier and demonstrate how this barrier will be maintained. OCD's experience is that calichie pads become very plastic during rainstorm events and notwithstanding the fact that heavy truck traffic used during these times may deteriorate the integrity of the barrier and thus may not provide the protection as suggested. ***OCD Response: Since Champion has committed to removing the higher chloride concentrations around Area (5) and SB-3, which will substantially lower the overall chloride loading to a much lower concentration average and the fact that the model simulations used the highest worst case numbers, OCD agrees with the compacted calichie barrier if maintained properly and meets or exceeds the $1x10^{-5}$ cm/s conductivity. In addition, the chlorides around Area (3) D-34&D-35 shall be removed until the levels meet or be less than the statistical average of soils remaining in Area (3).***

F. The area size used in the calculations do not take into account chlorides found outside of Area #3. and the rest of the yard. This would increase the overall chloride load and physical geometry of the model. Please delineate Area #3 and adjust the model input parameters to correct for this deficiency and resubmit the new results. ***OCD Response: Champion has committed to removing the higher chloride concentrations around Area (5) and SB-3, which will substantially lower the overall chloride loading to a much lower concentration average.***

3. Section 1.2: The old water well found abandoned under the chemical storage pad shall be sampled and analyzed for BTEX, TPH, and Chemicals of Concern using EPA approved methods. A plugging and abandonment plan shall be submitted for OCD approval. ***OCD Response: To be completed.***

4. Appendix G Photographs (Drain system from warehouse) Please describe the past history concerning this system. Is any drain system currently in use? If so please explain. ***OCD Response: Complete. Champion will properly plug and abandoned these lines.***

5. Section 4.2: Please provide the total feet of screen placed in monitor wells and the amount placed above and below groundwater. ***OCD Response: Complete.***

6. Section 4.5.6: (Background Data). OCD is reluctant to consider on-site monitor wells MW-1 and MW-7 as being background wells because of the fact that contamination has been found through out Champion's yard i.e. chlorides. MW-7 is located near Area 3 where the delineation of chlorides has not been completed and may have impacted the groundwater in this area, in addition MW-1 and MW-9 lie in proximity to the northwest part of the yard area where natural drainage from Champions yard has occurred for many years. Therefore, please revise the background Chloride data utilizing off-site up-gradient monitor well MW-15 (chlorides noted at 156, 200, 221 mg/l) and any other off-site up-gradient well such as those sampled by OCD i.e. Harmon and Morrow residences wells (chlorides in these wells were 137 mg/l and 241 mg/l. respectively). OCD calculates the average to be (221+137+241)/3 = 199 mg/l. Please provide the recalculated results from the model using this background input data.
OCD Response: After further review of the data OCD agrees that background data used by Champion is staticially close enough to OCD's interpretation to not warrant any further discussion, plus the fact this site will have long term monitoring.

7. Section 9.1: Soil Remediation and Assessment: Page 27 bullet point 7. OCD assumes Soil Borings SB-9, 10,13,14,15 are located in Area 3. This section of the report indicated benzene concentrations in subsurface soils that have a potentional to leach into groundwater and a clay cap over these locations will assist in stopping further migration. However, there is no mention of a clay cap in the final recommendations for this area. Please explain. ***OCD Response: No further explanation required.***

8. Section 7.1: Historical and Current Land Use: Please provide the aerial photos mentioned in this section. ***OCD Response: Complete.***

9. The plan did not address Area 5: SB-3, 37,38,39 and 40 for chlorides. Please address. ***OCD Response: Champion has committed to removing the higher chloride concentrations around Area (5) and SB-3, which will substantially lower the overall chloride loading to a much lower concentration average.***

10. Section 7.2 page 23 of 31 Scenario 3: Which area is this for? ***OCD Response: The chlorides around Area (3) D-34&D-35 shall be removed until the levels meet or be less than the statistical average of soils remaining in Area (2).***

11. Section 7.2 page 23 of 31 hydraulic saturated conductivity of .7 cm/day: Is this for the vadose zone or groundwater? Please explain and supply laboratory analysis mentioned in the report. ***OCD Response: Complete.***

12. Section 7.2 page 23 of 31 "Compaction of either sandy (caliche) soils or clayey soils generally results in a decrease of permeability by approximately 70 percent": OCD's question here is 70 % of what permeability number? Other words will the caliche soils meet the specifications listed in Item #2B below. ***OCD Response: Complete.***

OCD Approval of Section 10 Recommendations: ***OCD Response: No Change and still applies.***

1. OCD hereby approves bullet points #1 through #5 and #9 and considers these as commitments.

2. Bullet point #6 (Area 2): OCD approves the backfilling and proper compaction of Area 2 and installation of a barrier that meets the following specifications:

   A. The excavation shall be backfilled and properly compacted to the 5-feet-below-grade level with clean fill or with blended soils remaining on site. If blended soils are used then a composite sample shall be collected every three feet and analyzed for TPH, BTEX, Chlorides and any on-site Chemical-of-Concern (COC) already identified.

   B. The excavation will be then lined with an impermeable barrier that is with a hydraulic conductivity of not more that 1×10^{-7} cm/sec. If a clay barrier is to be used, it shall be either two feet thick, after compaction, or compacted so as to meet or exceed 95% of a Proctor Test ASTM-D-698, as shown by three tests on

the site, and have the following physical characteristics:

a. Plasticity index greater than 10%;
b. Liquid limit between 25% and 50%;
c. More than 40% by weight of the material passing a No. 200 sieve;
d. Clay content greater than 18% by weight; and
e. Be free of particles greater than one inch in any dimension.

C. If a clay barrier is to be used, it will be built in a series of 6-inch lifts so that compaction requirements can be met, and the clay layers should be moisture conditioned, as well as covered with the at least 1 foot of cover soils within 24-48 hours so that the clay layer does not desiccate.

D. Impermeable barriers should be domed to promote lateral movement of percolation water.

E. The impermeable barrier must be covered with a protective soil layer at least three feet thick composed of clean porous soil and contoured to be compatible with the adjacent elevations.

3. Bullet point #7 (Area 3): OCD will forgo any approval until clarification is provided as requested in the above Required Information:

4. Bullet point #8 (Bulk Tank and Drum Storage Area): If this area is going to be rebuilt as previously constructed then OCD hereby approves of this new construction. If not, then any remaining area that was previously part of the storage area shall be included as part of area 2 and shall conform to the requirements of Item #2 above.

Champion shall respond to this response within 30 days. If Champion agrees to the conditions stated above then OCD will issue final approval of the project via certified mail. If you have any questions,
please contact Wayne Price at (505) 476-3487 or E-Mail WPRICE@state.nm.us.

Sincerely,

Wayne Price
Environmental Engineer

June 3, 2003

Mr. Wayne Price
Environmental Engineer
New Mexico Oil Conservation Division
1220 South St. Francis Dr
Santa Fe, NM 87505

RE: Abatement Plan (AP-14)
Stage 2 Abatement Plan Proposal
Comprehensive Status Report
Champion's Hobbs, NM Facility GW-199

Dear Mr. Price:

Environmental Technology Group, Inc. (ETGI) is pleased to present this response to your letter dated May 8, 2003, on behalf of Champion Technologies (Champion) for the above referenced site. The format of this letter is to specify the New Mexico Oil Conservation Division (NMOCD) concerns followed by ETGI's response.

Required Information:

1. *OCD requires a copy of the Hydrus model with instructions, input parameters, weather input data and a copy of the excel spreadsheet that contains the groundwater mixing model. Due to the complex nature of this model, OCD request a technical meeting with the consultant concerning the model and submitted report.*

   R.T. Hicks Consultants, Ltd (Hicks) the Consultant that completed the chloride simulation, is coordinating a Hydrus seminar to be presented to interested individuals in the NMOCD and industry. Hicks will provide a copy of the Hydrus-1D model/software and provide technical guidance to the NMOCD at this seminar. As of this writing, the seminar is scheduled for Thursday June 26th. Details on time and location are to be determined shortly and will be communicated to the NMOCD by Hicks.

2. *Modeling Comments and Questions:*

   A. *OCD is having a difficult time understanding how calibration of the model can be made using hypothetical one-time release at this particular site. Please explain.*

      The use of the word "calibration" in this application was somewhat ambiguous. The initial simulation was run to determine if site input parameters based on professional judgment and the model's library database (e.g. unsaturated hydraulic

conductivity) could render a reasonable prediction of chloride migration. A one-time theoretical release of chloride was employed due to the absence of data that indicate how chlorides were introduced into the pit area or onto the site. Hicks found that by assuming a single release event, a chloride distribution in the unsaturated zone developed that was very similar to observed field data. Actual field data that was used in the simulation required no adjustment to calibrate the model.

B. *OCD does not agree using 80 or 100 feet of aquifer thickness in the mixing model. OCD will require 10 feet. Please recalculate using 10 feet.*

The use of 80-100 feet is based directly on published data for thickness of saturated Ogallala formation in the area of the Champion site.

Research suggests that mixing of the chloride ion in groundwater happens readily. Dispersion horizontally and vertically will take place. In addition, gravity flow will directly affect the denser chloride concentration in the groundwater allowing transport to the lower reaches of the aquifer. Groundwater analysis collected from on/offsite domestic water wells (which are primarily screened near the lower section of the aquifer in this area) indicates that chloride concentrations are present at these lower depths in similar concentrations. This illustrates that mixing has occurred throughout the aquifer with regard to the chloride ion.

Based on previous communication on other projects with the NMOCD, Hicks originally used an aquifer thickness input parameter of 10 feet. This input value of a 10-foot aquifer thickness yielded chloride concentration results (from the simulation) that were many times higher than those actually observed in an adjacent monitor well. When the simulation is run with a true representative aquifer thickness of 100 feet, the results match approximately the chloride concentrations that have actually been detected in onsite monitor wells. Moreover, since the chloride ion has higher specific gravity than a hydrocarbon and does not remain in only the top 10 feet of the saturated zone, employing an 80-100 foot aquifer thickness is appropriate.

C. *Explanation of Fig #1 and #4: In Fig #1 (Simulated Chloride distribution in the Vadose zone) the units of the measured concentrations do not match the actual soil conditions. For example one point is labeled approximately 1.5 E+05. Is this ppm in soil or soil water and what are the units? Please explain and provide example calculations on how these numbers were obtained and which sample data was used.*

Figure #1 and #4 represent the simulated distribution of chloride in soil water throughout the soil profile. Figure #1 represents initial conditions and figure #4 represents Scenario 3.

Figure #1 in Hick's chloride modeling report represents Hydrus output data that is different from laboratory report data in that it represents values of chloride concentration in milligrams/liter of **soil water**.

The actual measured concentrations were converted to express soil water concentrations. Soil concentrations provided by the laboratory are in grams chloride/grams soil. The vast majority of chloride in the soil resides in soil moisture. If the soil moisture and chloride concentration are known, a calculation can be used to determine chloride concentration in the soil (pore) water.

Hicks used the following equation to convert laboratory chloride soil concentration values to chloride concentration values in soil (pore) water:

[Soil chloride (mg/kg)] x [soil bulk density (kg/m^3)] / [soil moisture (%)] x [soil bulk density (kg/m^3)] x [1kg/1L] = (mg/L)

For example, using this equation to determine the chloride concentration of soil water for a sample analysis of 11,009 mg/kg with soil moisture content of 8% and a bulk density 1858 kg/m^3 yields a value of 137,612 mg/L or 1.40E+5.

D. *Engineering controls to reduce precipitation by 70%. Please demonstrate that reducing precipitation is the same as reducing the infiltration.*

Engineering controls specified were never meant to control precipitation amounts. Engineering controls will be used to control precipitation infiltration. This will be completed by reducing the permeability of the material through compaction and/or by constructing a surface gradient that sheds precipitation. The Hydrus model simulates such engineering controls by precipitation reduction.

E. *Champion will have to demonstrate that a caliche pad will provide a proper barrier and demonstrate how this barrier will be maintained. OCD's experience is that caliche pads become very plastic during rainstorm events and notwithstanding the fact that heavy truck traffic used during these times may deteriorate the integrity of the barrier and thus not provide the protection as suggested.*

The numerous layers of caliche placed by Champions and past operators at the site has resulted in approximately eight (8) to nine (9) inches of compacted caliche on the poorly developed native soil. ETGI will conduct proctor tests to determine if the existing caliche pad throughout the yard is currently sufficient to attain the infiltration reduction required.

As illustrated in the modeling results (Figs. 2 and 3 of Hicks report), if infiltration had not been reduced by the existing compacted caliche layer, groundwater chloride concentrations should have exceeded 1500 parts per million (ppm).

F. *The area size used in the calculations does not take into account chlorides found outside of Area #3 and the rest of the yard. This would increase the overall chloride load and physical geometry of the model. Please delineate Area #3 and adjust the model input parameters to correct for this deficiency and resubmit the new results.*

The chloride loading was calculated using worst-case conditions and not a concentration average. The loading is appropriate based on our considerations. It was not stated in the Comprehensive Site Report (CSR) that the surficial area around boring SB-3 with chloride concentrations of 12,428 mg/kg (Area 5) would be removed. This will be completed as part of any additional/follow-up activities to address this letter. Soil confirmation samples will be collected from Area 5 to verify that chloride concentration is primarily in the near surface (0-2' bgs). The values used in load calculations or scenario 3 of this simulation take into account all the areas of the yard that data is available.

Four soil borings were installed in Area 5 by Enercon Services in May 2001, to delineate the chloride concentrations around soil boring SB-3. All soil samples collected by Enercon from this area are from the depth interval of 0 (surface) - 1 foot below ground surface (bgs). The four additional soil borings SB-37, SB-38, SB-39 and SB-40 showed chloride concentrations of 2076 mg/kg, 2093 mg/kg, 3511 mg/kg and 2460 mg/kg respectively.

The chloride loading was calculated based on worst-case concentrations from soil data that was available assuming the removal of chloride concentrations around the isolated area associated with area SB-3.

3. *Section 1.2: The old water well found abandoned under the chemical storage pad shall be sampled and analyzed for BTEX, TPH, and Chemicals of Concern using EPA approved methods. A plugging and abandonment plan shall be submitted for OCD approval.*

The abandoned water well discovered beneath the bulk chemical storage area is constructed in such a way as to preclude conventional sampling methodology. The well material consists of an inner ¾ inch diameter metal "shaft" that is surrounded by a 4 inch metal casing. The "shaft" is held in the middle of the 4-inch casing by metal centralizers
that are welded to the interior of the 4-inch pipe. The centralizers are not removable and do not allow a conventional sampling bailer to pass. Executing an EPA method of removing a minimum of 3 well volumes of water prior to sample collection is doubtful. A groundwater sample collected without properly purging the well is not believed to represent current groundwater environmental conditions. The 4-inch metal casing is surrounded by an outer 6-inch metal casing that appears to be grouted in place.

ETGI proposes to plug and abandon this water well by using a winch truck to make an attempt to pull the casing. If the casing cannot be removed then the well will be filled with the required slurry mixture and then cemented and capped by welding a metal cover over the well.

4. *Appendix G Photographs (Drain system from warehouse) please describe the past history concerning this system. Is any drain system currently in use? If so please explain.*

   Evidence suggests that this was what is commonly referred to as a "French Drain" system. A French drain typically transports liquids from sinks, floors etc through a metal piping system and discharges through and open-ended pipe or diffuser into a pit or trench.

   Champion has no record of using this drain. Observations of the location where the drain line exits the warehouse are inconclusive to determine usage. The drain system appears to have been installed and used by the former tenants of this facility prior to Champion Technologies. The drain pipe system consisted of at least two sets of three (3) metal pipes. One set drained or serviced the warehouse and another appeared to run beneath portions of the bulk chemical storage containment area and were subsequently excavated. The three pipes in the set from the warehouse contained one (1) three-inch diameter, one (1) three-inch diameter with an electric lead and one (1) one point five-inch line. The pipes originate from near the southwest corner of the warehouse approximately three feet above the ground surface. The warehouse has a cut-away in the sidewall of the structure that would allow access from the interior. From the exterior of the warehouse, two metal pipes descended to below the ground surface and angled into the former pit where they terminated without caps. Observations of the pipes discovered beneath the former bulk chemical containment area are inconclusive in regards to origins or destinations.

   The only known drain systems in use are the current septic system that services the current office and former laboratory. The former septic line was excavated and removed and a new drain-line was installed during the drain-line investigation. There is a second drain system that services a sink(s) and restroom in the warehouse. Champion has stated that these facilities are being used for sanitary waste only.

5. *Section 4.2: Please provide the total feet of screen placed in monitor wells and the amount placed above and below groundwater.*

   Well construction information and diagrams can be found in Appendix D, Monitor Well Logs and Well Completion Materials in the Comprehensive Status Report.

   Monitor Well MW-14 well construction was reported incorrectly in the Comprehensive Status Report. The Monitor Well Detail should read Depth of PVC well to be 68 feet bgs and not 78 feet bgs. The 68 feet accurately describes the location of the bottom of the screened interval in this monitor well. The corrected

copy of MW-14 well completion diagram and a summary of well screen data for the onsite monitor wells are enclosed in Attachment A.

Typically, monitor wells installed by ETGI are constructed with 20 feet of PVC screen or slotted pipe. Approximately 15 feet of screen is placed below the groundwater table and 5 feet above groundwater table.

6. *Section 4.5.6: (Background Data). OCD is reluctant to consider on-site monitor wells MW-1 and MW-7 as being background wells because of the fact that contamination has been found through out Champion's yard i.e. chlorides. MW-7 is located near Area 3 where the delineation of chlorides has not been completed and may have impacted the groundwater in this area, in addition MW-1 and MW-9 lie in proximity to the northwest part of the yard area where natural drainage from Champions yard has occurred for many years. Therefore, please revise the background Chloride data utilizing off-site up-gradient monitor well MW-15 (chlorides noted at 156, 200, 221 mg/l.) and any other off-site up-gradient well such as those sampled by OCD i.e. Harmon and Morrow residences wells (chlorides in these wells were 137 mg/l and 241 mg/l. respectively). OCD calculates the average to be (221+137+241)/3 =199 mg/l. Please provide the recalculated results from the model using this background input data.*

Data for monitor well MW-7 was incorrectly reported by the laboratory and subsequently by ETGI in the CSR. The chloride concentration report as 510 mg/L was actually 255 mg/L. The corrected laboratory report is enclosed as Attachment B.

Monitor well MW-7 was originally installed as SB-35 by Enercon Services approximately 38 feet east of the western property line and up-gradient of the rest of the property. Soil samples were collected at the 3-5', 13-15', 23-25', 33-35' and 43-45' intervals. The greatest concentration of chloride was found at the 13-15'interval at 3388 ppm. Despite this concentration and a concentration of 1405 ppm at the 43-45' interval, there has not been a spike increase in the groundwater chloride concentration detected in MW-7 (Attachment C). This is directly related to the lack of transport medium (water) in the unsaturated zone due to the existing compacted caliche surface layer restricting vertical migration of precipitation across the Champion yard. The fact that chloride is found in the soil column does not negate this monitor well from representing background concentrations of chloride in the **groundwater**.

Monitor well MW-9 was installed by ETGI to be out of the runoff flow path for the facility. Monitor well MW-9 is located approximately 50 feet south of the flow path. Observed rain event runoffs of last season did not approach the MW-9 location. Monitor well MW-9 is constructed with a raised surface completion that stands approximately 4 feet above the surrounding surface. A soil sample collected during placement of monitoring well MW-9 @ 5 feet below ground surface yielded a chloride concentration of 73.9 ppm (Attachment C).

In the conditionally approved (by OCD) Stage 2 Abatement Plan Proposal by Enercon

Services dated February 5, 2002, an off-site, up-gradient monitor well is proposed to monitor groundwater conditions entering the facility (Enercon's MW-8). This proposed monitor well placement is assumed to be approved by the OCD since there was no deficiency associated with this item. Enercon's Figure 5 of the Stage 2 Abatement Plan Proposal indicates where Enercon proposed to place MW-8 (Attachment D).

In the letter Response to Notice of Deficiency dated June 3, 2002 by ETGI it is stated that a proposed monitor well will be placed off-site, up-gradient to the west or north-west of the facility to ascertain background soil and groundwater quality. A Site Map figure was attached to the Response Letter indicating where the proposed monitor well(s) would be located (Attachment D). The OCD did not respond or comment on the proposed monitor well locations and it is assumed by lack of comment that the locations are approved.

Monitor well MW-1 was installed by Enercon Services near the north-east corner of the site to evaluate groundwater coming on-site. A soil boring SB-1 (installed by Enercon) nearest to monitoring well MW-1 had a reported chloride concentration from 0-1 foot bgs of 151 ppm. Monitoring well MW-1 has been inspected for faulty well cap or well box gasket. Both are in place and appear to be functioning according to design.

Champion and ETGI maintain that monitoring wells MW-1, MW-7, MW-9 and MW-15 are legitimate representations of (up-gradient) background groundwater monitoring points. These monitor wells have a calculated average groundwater chloride concentration of 311 ppm ((435 + 255 + 332 + 221)/4) based on data collected in the February 2003 sampling event and 291 mg/L based on all samples collected from these wells by ETGI from August 2002 through February 2003.

Regardless of the background concentration selected, the chloride simulations illustrate a potential net increase of approximately 1226 mg/L in Scenario 1 (without controls) and a maximum potential increase of approximately 100 mg/L for Scenario 2 (with Controls).

7. *Section 9.1: Soil Remediation and Assessment: Page 27 bullet point 7. OCD assumes Soil Borings SB-9, 10, 13, 14, 15 are located in Area 3. This section of the report indicated benzene concentrations in subsurface soils that have a potential to leak into groundwater and a clay cap cover over these locations will assist in stopping further migration. However, there is no mention of a clay cap in the final recommendations for this area. Please explain.*

   Soil borings SB-9, 10, 13, 14 and 15 are all located in **Area 2**. This area is planned to have a clay cap to prevent precipitation infiltration.

   Area 3 is not planned to have a clay cap cover but will have a compacted caliche cover that will restrict infiltration. The compacted caliche cover will have a hydraulic

conductivity of less then 1 x 10^{-5} cm/s which is similar to the requirements of a cover over a municipal landfill.

8. *Section 7.1: Historical and Current Land Use: Please provide the aerial photos mentioned in this section.*

   Copies of the aerial photos referenced in this section are provided as an Attachment E.

9. *The plan did not address Area 5: SB-3, 37, 38, 39 and 40 for chlorides. Please address.*

   Sample SB-3 in area 5 indicates near-surface impact only. Additional delineation completed in this area showed chloride concentrations ranging from 2093 mg/kg to 3511 mg/kg. Champion will have the top 1-2 feet removed from Area 5 associated with sample SB-3. Confirmation soil samples will be collected to illustrate chloride removal/reduction. The area will be covered with a compacted caliche surface to reduce precipitation infiltration and prevent any remaining chloride migration into groundwater.

10. *Section 7.2 page 23 of 31 Scenario 3: Which area is this for?*

    Scenario 3 is a simulation for all chloride impacted areas outside of Area 2. Scenario 3 takes into account the worst-case condition(s) found at 5 feet bgs in Area 3 at sample location D-34 (11,900 ppm). This is not an average concentration but ETGI elected to run the chloride simulations with the most conservative values. Even though the concentration of 12,428 ppm at soil sample location SB-3 (collected by Enercon) is statistically very similar to the 11,900 at location D-34 this impacted material, as discussed in number 9 above, specifically soil associated with sample SB-3 will be removed.

11. *Section 7.2 page 23 of 31 hydraulic saturated conductivity of .7 cm/day: Is this for the vadose zone or groundwater? Please explain and supply laboratory analysis mentioned in the report.*

    The hydraulic saturated conductivity is representative of the vadose zone. A soil sample core was collected at location SB-46 @ 42-45 feet bgs and submitted for geotechnical soil analysis at Stork Southwestern Laboratories.

    A copy of the laboratory report is enclosed as Attachment F.

12. *Section 7.2 page 23 of 31 "Compaction of either sandy (caliche) soils or clayey soils generally results in a decrease of permeability by approximately 70 percent": OCD's question here is 70 % of what permeability number? Other words will the caliche meet the specifications listed in Item #2B below.*

The compacted caliche will meet the criteria in Item #2B as it pertains to use as a cover to prevent infiltration of precipitation. A demonstration will be made by the completion of at least three Proctor Tests (ASTM-D-698) on the compacted caliche base to illustrate a hydraulic conductivity of not more than 1 x 10^{-5} cm/sec. The parameters stated in Item #2B to meet hydraulic conductivity values of 1 x 10^{-7} are criteria developed for municipal landfill liners according to 40 CFR 258.40(b) landfill design, not 40 CFR 258.60(a)(1), Closure and Post Closure- Final Cover Design. A compacted caliche layer of approximately 8-9 inches thick across the site can be demonstrated to have a hydraulic conductivity of 1 x 10^{-5} cm/sec. Appendix G of this letter contains the recent paper referenced in section 7.1 of the CSR titled, "*Compacted Urban Soils Effects on Infiltration and Bioretention Stormwater Control Designs*". This paper discusses the significance of compacted urban/industrial soils relating to precipitation infiltration (including compacted sand and clay).

The specification referenced in the OCD approval of Section 10 Recommendations specifically 2B, are for an EPA specification municipal bottom liner. Champion refers to the above regulation regarding final cover design for Municipal Solid Waste landfills specific to construction of a cover with a permeability of not more than 1x10^{-5} cm/sec. These regulations indicate the relevance to the technical consideration of the cover required to minimize the infiltration of precipitation into the subsurface.

I hope this letter address the concerns raised. Upon your review of this document and attachments, should have any questions or concerns please do not hesitate to contact us.

Sincerely,

ENVIRONMENTAL TECHNOLOGY GROUP, INC.

Todd K. Choban
Sr. Geologist/Project Manager

Chan B. Patel
Sr. Project Manager

Attachments

cc: Larry Johnson - OCD Hobbs District Office
Ralph Corry - Champion Technologies, Fresno, TX
Dwight E. Vorpahl - Attorney, Houston, TX
Richard Cox - Champion Technologies, Guthrie, OK
Champion Technologies - Hobbs, NM
ETGI - Midland, TX
ETGI - Houston, TX

ATTACHMENT A

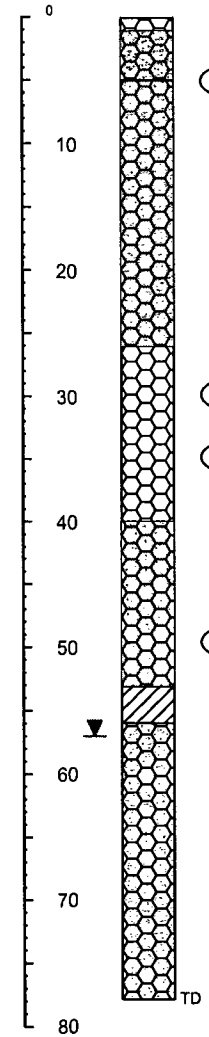
MONITOR WELL SCREEN DATA

ATTACHMENT A

Monitor Well No.	Total Screen Length	Total Depth of PVC Used	Average Water Level	Screen Above Water Level	Screen Below Water Level
MW-8	20	69'	60'	11	9
MW-9	20	61'	53'	12	8
MW-10	20	67'	59'	12	8
MW-11	20	70'	57'	7	13
MW-12	20	70'	60'	10	10
MW-13	20	71'	60'	9	11
MW-14*	20	68'	57'	9	11
MW-15	20	68'	53'	5	15
MW-16	20	71'	60'	9	11

* An error was observed on the boring log submitted. Attachment __ contains the corrected log and relevant copies of the page from the field log.

Monitor Well MW-14



Soil Description

Caliche pad

Fine sand with caliche, tan

Caliche with sand, light tan moderately hard, dry

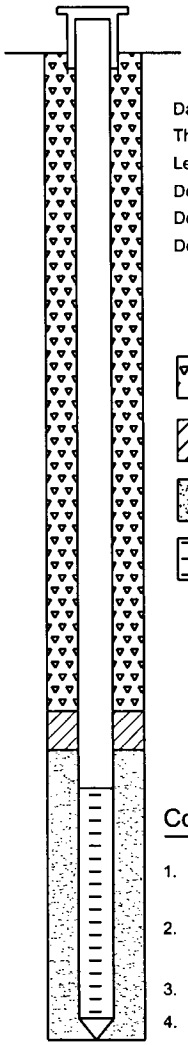
Caliche - calcrete very hard light buff color

Caliche with sand (slight) moderately hard,tan, dry

Caliche with sand

Very hard indurated calcrete, siliceous

Sand with minor caliche weekly cemented, reddish brown



Monitor Well Details

Date Drilled	09 - 25 - 02
Thickness of Bentonite Seal	3 ft
Length of PVC Well Screen	20 ft
Depth of PVC Well	68 ft
Depth of Exploratory Well	78 ft
Depth to Groundwater	57 ft

Grout Surface Seal

Bentonite Pellet Seal

Sand Pack

Screen

Indicates the groundwater level measured on date.

Indicates samples selected for laboratory submittal.

PID Head-space reading in ppm obtained with a photo-ionization detector.

Completion Notes

1. The monitor well was installed on date using air rotary drilling techniques.
2. The well was constructed with 4" ID, 0.020 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3. The well is protected with a locked flush steel cover and a compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface.

Soil Boring Log Details

MW-14

Champion Technologies, Inc. Hobbs Facility Hobbs, NM

Environmental Technology Group, Inc.

Prep By: JDJ	Checked By: TKC
March 11, 2003	ETGI Project # CH2100

ATTACHMENT B

TraceAnalysis, Inc. 6701 Aberdeen Ave., Suite 9 Lubbock, TX 79424-1515 (806) 794-1296

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: May 23, 2003

Order ID Number: A03022118

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222041	WChamp 21903 MW-1	Water	2/19/03	10:01	2/21/03
222042	WChamp 21903 MW-2	Water	2/19/03	8:46	2/21/03
222043	WChamp 21903 MW-3	Water	2/19/03	9:17	2/21/03
222044	WChamp 21903 MW-4	Water	2/19/03	9:40	2/21/03
222045	WChamp 21903 MW-5	Water	2/19/03	9:30	2/21/03
222046	WChamp 21903 MW-7	Water	2/19/03	8:20	2/21/03
222047	WChamp 21903 MW-8	Water	2/19/03	9:12	2/21/03
222048	WChamp 21903 MW-9	Water	2/19/03	8:27	2/21/03
222049	WChamp 21903 MW-10	Water	2/19/03	10:16	2/21/03
222050	WChamp 21903 MW-13	Water	2/19/03	9:22	2/21/03
222051	WChamp 21903 MW-14	Water	2/19/03	9:35	2/21/03
222052	WChamp 21903 MW-15	Water	2/19/03	8:13	2/21/03
222053	WChamp 21903 MW-16	Water	2/19/03	8:52	2/21/03
222054	WChamp Onsite 21903	Water	2/19/03	10:53	2/21/03
222055	WChamp Offsite 21903	Water	2/19/03	10:42	2/21/03

Comment: CORRECTED CHLORIDE FOR 222046

This report consists of a total of 5 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 222041 - WChamp 21903 MW-1

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		435	mg/L

Sample: 222042 - WChamp 21903 MW-2

Param	Flag	Result	Units
Dissolved Chromium		0.0134	mg/L
Chloride		384	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Sample: 222043 - WChamp 21903 MW-3

Param	Flag	Result	Units
Dissolved Chromium		0.0122	mg/L
Chloride		658	mg/L

Sample: 222044 - WChamp 21903 MW-4

Param	Flag	Result	Units
Dissolved Chromium		0.271	mg/L
Chloride		485	mg/L

Sample: 222045 - WChamp 21903 MW-5

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		476	mg/L

Sample: 222046 - WChamp 21903 MW-7

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		255	mg/L

Sample: 222047 - WChamp 21903 MW-8

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		397	mg/L

Sample: 222048 - WChamp 21903 MW-9

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		332	mg/L

Sample: 222049 - WChamp 21903 MW-10

Param	Flag	Result	Units
Dissolved Chromium		0.0163	mg/L
Chloride		355	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Sample: 222050 - WChamp 21903 MW-13

Param	Flag	Result	Units
Dissolved Chromium		0.151	mg/L
Chloride		332	mg/L

Sample: 222051 - WChamp 21903 MW-14

Param	Flag	Result	Units
Dissolved Arsenic		<0.011	mg/L
Dissolved Chromium		<0.011	mg/L
Chloride		342	mg/L

Sample: 222052 - WChamp 21903 MW-15

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		221	mg/L

Sample: 222053 - WChamp 21903 MW-16

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		474	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		1.64	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L

Continued on next page ...

Sample 222053 continued ...

Param	Flag	Result	Units
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		1.62	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 222054 - WChamp Onsite 21903

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L

Continued on next page ...

Sample 222054 continued ...

Param	Flag	Result	Units
Chloride		347	mg/L

Sample: 222055 - WChamp Offsite 21903

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		479	mg/L

ATTACHMENT C

CORRELATION OF SOIL DATA TO MONITOR WELL DATA AND BACKGROUND WELL DATA

Champion Technology
ETGI Project No. CH2100
ATTACHMENT C

MONITOR WELL #	DEPTH in feet	SOIL CONC. mg/kg	DATE m/d/y	GW CONC. mg/L
MW-1	(SB-1) 1	151	08/02/02	408
			10/31/02	356
			02/19/03	435
MW-2	5 - 7	868	08/02/02	372
	15 - 17	3122	10/21/02	397
			02/19/03	384
MW-3	(SB-52) 5	53	08/02/02	381
	25	43.7	10/21/02	464
	45	38.7	02/19/03	658
MW-4	W-Trench S 2.5	4130	08/02/02	354
			10/21/02	377
			02/19/03	435
MW-5			08/02/02	346
			10/21/02	508
			02/19/03	476
MW-6	3 - 5	3582	08/02/02	443
	13 - 15	1195	10/21/02	469
	23 - 25	197	11/13/02	390
	33 - 35	68.7	02/19/03	533
	43 - 45	57.2	08/02/02	239
MW-7	3 - 5	1339	10/21/02	235
	13 - 15	3388	02/19/03	255
	23 - 25	1579		
	33 - 35	1480		
	43 - 45	1405		
MW-8	(SB-24) 3 - 5	198	08/02/02	257
	10 - 12	220	10/21/02	304
	23 - 25	821	02/19/03	397
	38 - 40	166		
MW-9	5	73.9	08/02/02	348
			10/21/02	305
			02/19/03	332
MW-10	5	240	10/21/02	260
	10	153	02/19/03	355
	20	243		
	40	7.8		
MW-11	(SB-30) 3 - 5	<3.0	10/21/02	298
	15 - 17	33.1	02/19/03	298
	56	37.6		
MW-12	15	390	10/21/02	357
	45	43.7	02/19/03	353
MW-13	5	2280	10/21/02	464
	10	501	02/19/03	332
MW-14	5	61.4	10/21/02	272

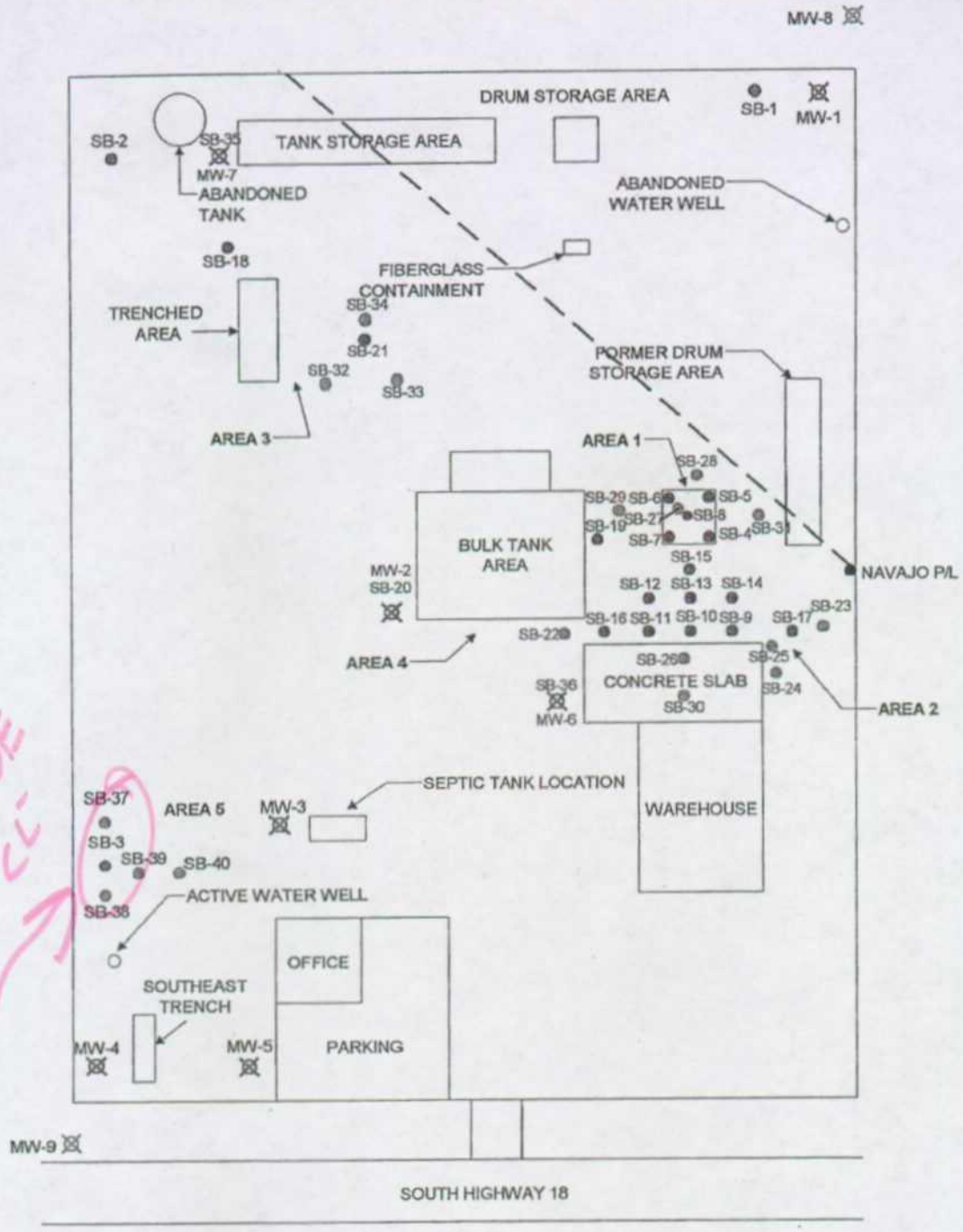
CORRELATION OF SOIL DATA TO MONITOR WELL DATA AND BACKGROUND WELL DATA

Champion Technology
ETGI Project No. CH2100
ATTACHMENT C

MONITOR WELL #	DEPTH in feet	SOIL CONC. mg/kg	DATE m/d/y	GW CONC. mg/L
	30	575	02/19/03	342
	50	243		
MW-15	5	46.7	10/21/02	156
	25	37.4	11/13/02	200
	40	137	02/19/03	221
MW-16	5	2820	10/21/02	416
			02/19/03	474

(SB-X) indicates boring data closest to the monitor well used when monitoring well soil data is not available

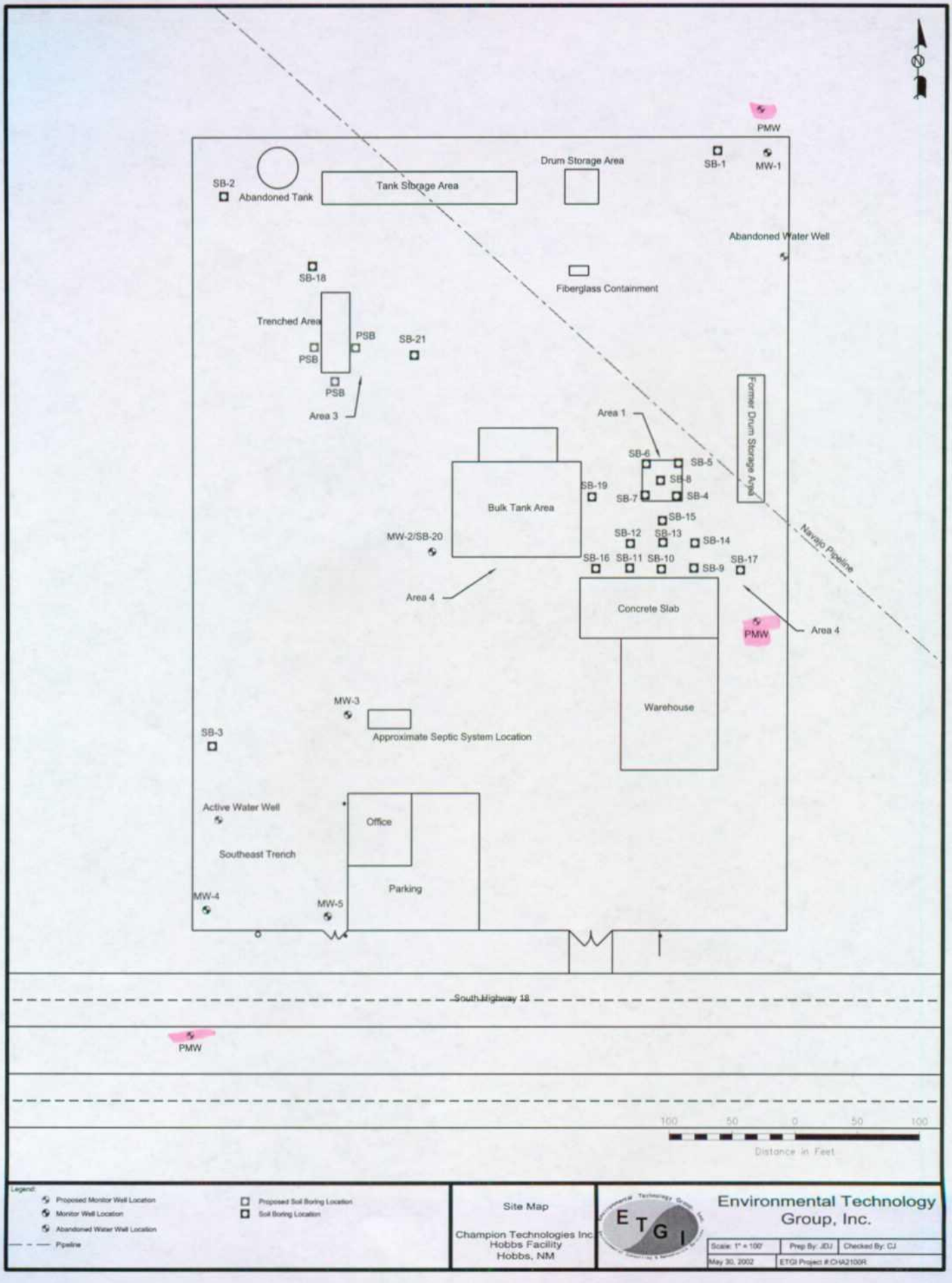
ATTACHMENT D



ENERCON SERVICES, INC.

FIGURE 5:
PROPOSED MONITORING
WELL LOCATIONS
CHAMPION TECHNOLOGIES, INC.

PROJECT NO.: EN332 DATE: 2/04/02 BY: APB


N
PMW
SB-1
MW-1
Drum Storage Area
SB-2
Abandoned Tank
Tank Storage Area
Abandoned Water Well
SB-18
Fiberglass Containment
Trenched Area
PSB
PSB
PSB
SB-21
Area 3
Area 1
Former Drum Storage Area
SB-6
SB-5
SB-8
SB-19
SB-7
SB-4
Bulk Tank Area
SB-15
MW-2/SB-20
SB-12
SB-13
SB-14
SB-16
SB-11
SB-10
SB-9
SB-17
Navajo Pipeline
Area 4
Concrete Slab
PMW
Area 4
Warehouse
MW-3
Approximate Septic System Location
SB-3
Active Water Well
Office
Southeast Trench
Parking
MW-4
MW-5
South Highway 18
PMW
100
50
0
50
100
Distance in Feet
Legend:
Proposed Monitor Well Location
Monitor Well Location
Abandoned Water Well Location
Pipeline
Proposed Soil Boring Location
Soil Boring Location
Site Map
Champion Technologies Inc.
Hobbs Facility
Hobbs, NM
ETGI
Environmental Technology Group, Inc.
Scale: 1" = 100'
Prep By: JDJ
Checked By: CJ
May 30, 2002
ETGI Project #:CHA2100R

ATTACHMENT E

Send To Printer Back To T[illegible]erver Change to 11x17 Print Size S[illegible] Grid Lines Change to Landscape

USGS 5 km S of Hobbs, New Mexico, United States 01 Nov 1997

0 .5Km 0 .25Mi

Image courtesy of the U.S. Geological Survey

Send To Printer Back To Terraserver Change to 11x17 Print Size Show Grid Lines Change to Landscape

USGS **5 km S of Hobbs, New Mexico, United States** 01 Nov 1997

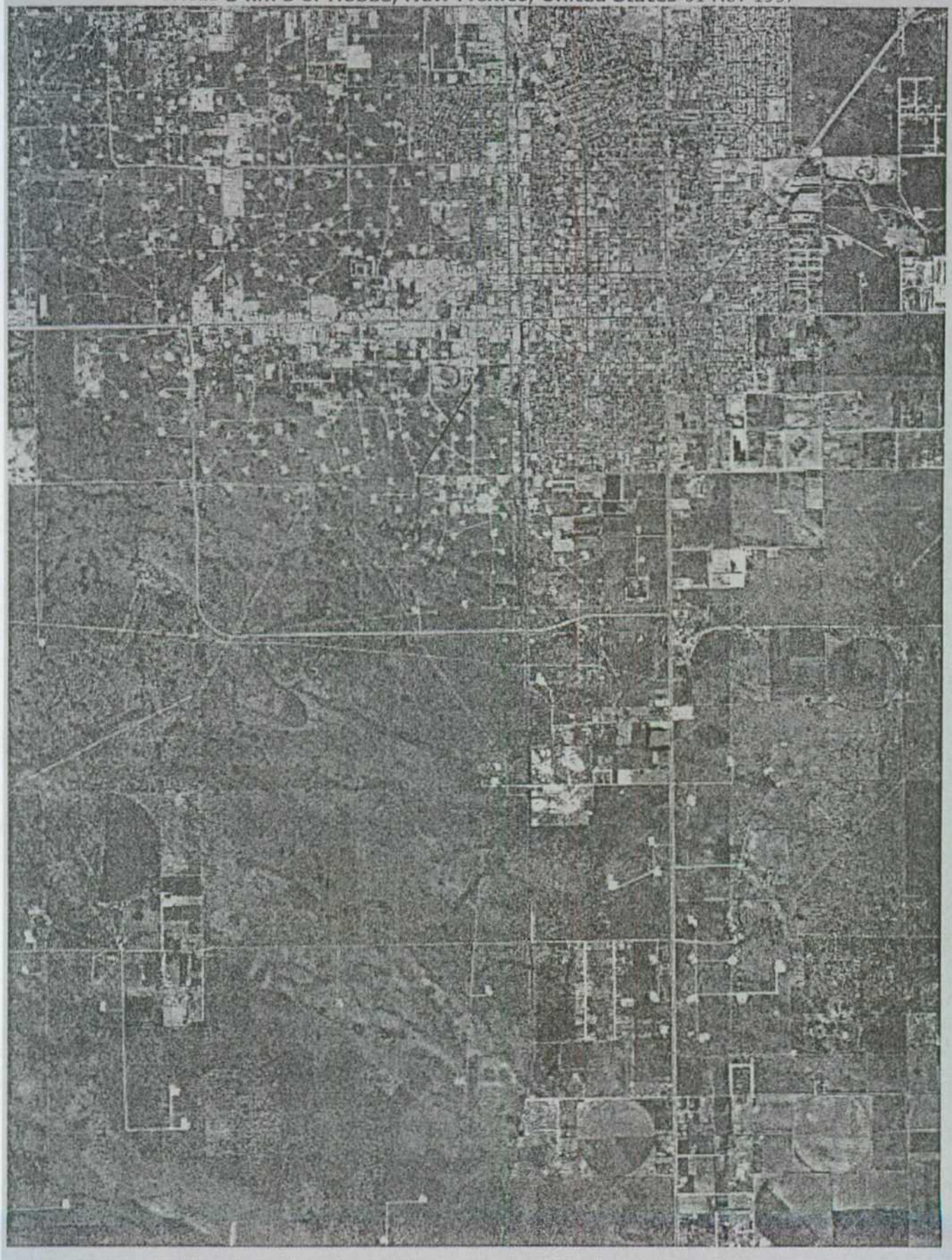


Image courtesy of the U.S. Geological Survey

Send To Printer Back To Ter rver Change to 11x17 Print Size Sh rid Lines Change to Landscape

USGS 4 km S of Hobbs, New Mexico, United States 01 Nov 1997

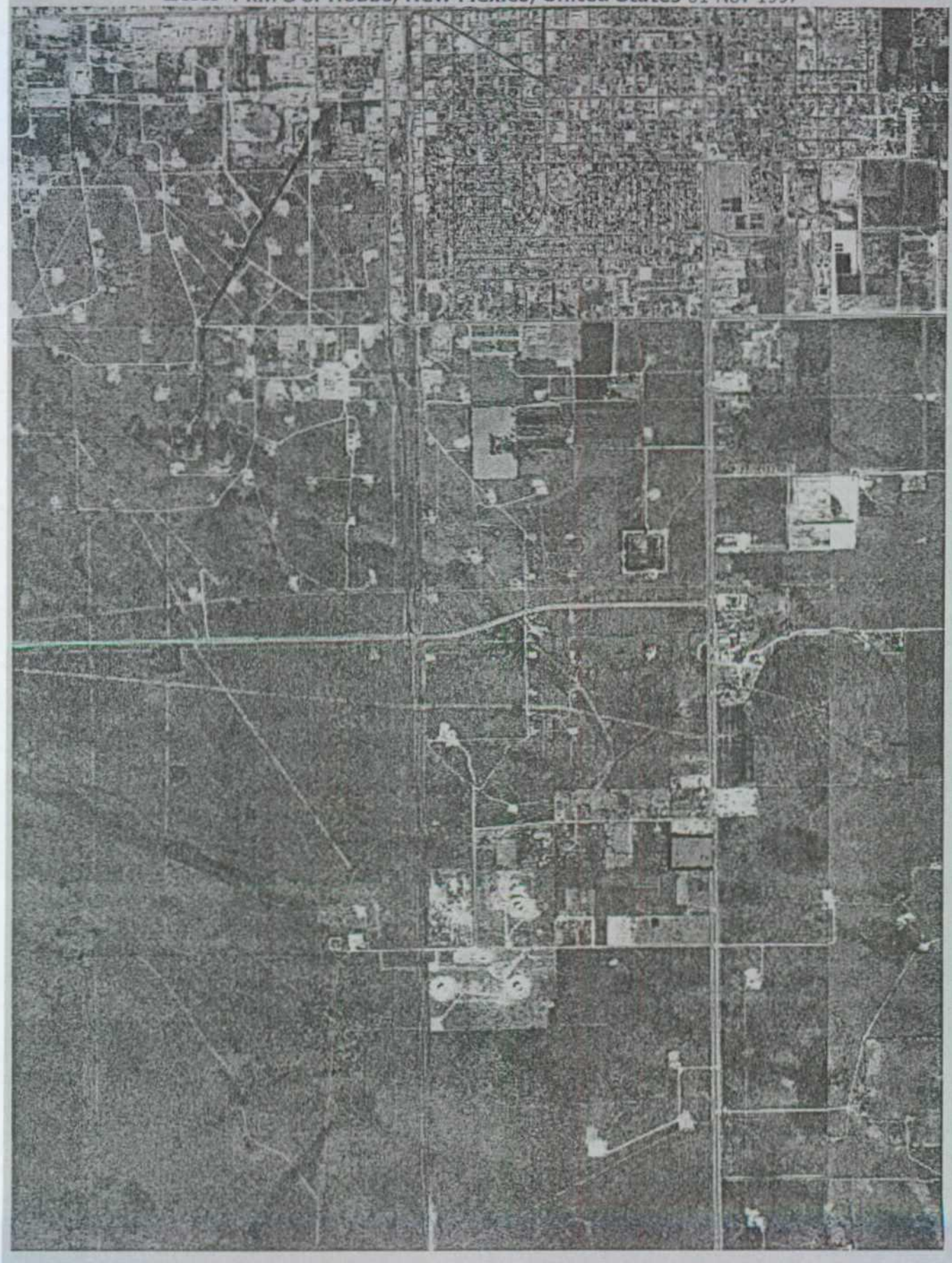
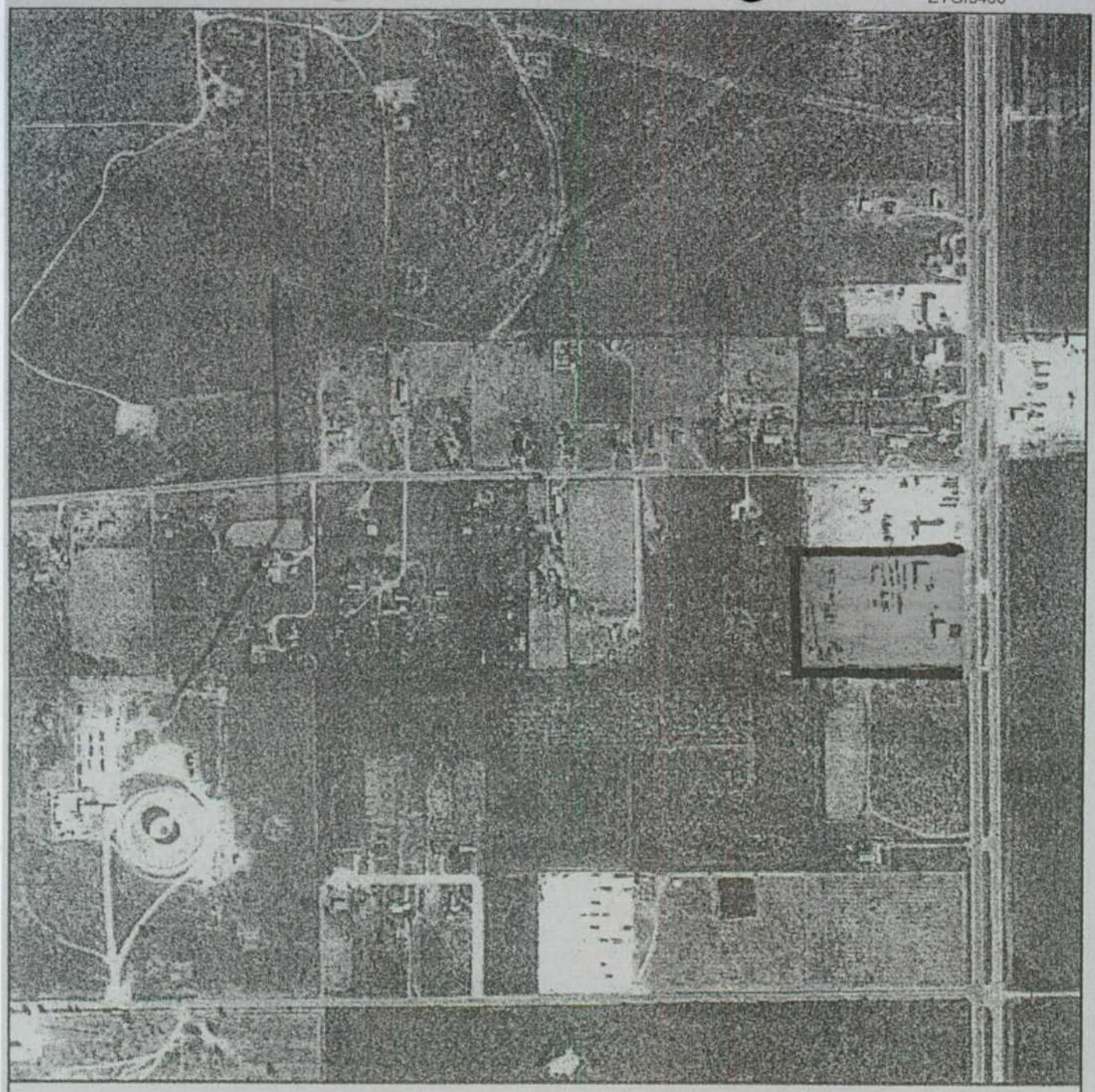


Image courtesy of the U.S. Geological Survey

12-04-2002

ETGI3400



Scale: 1 inch to 400 feet

UTM North is straight up

Longitude: -103° 7' 43.1"
Latitude: 32° 39' 26.3"

UTM Easting: 675504 meters
UTM Northing: 3614656 meters
UTM Zone: NAD 13

County: LEA

Project: NAPP
Quadrangle:
Date: 19 Sep 1995
Film Type: Black & White

Source: U.S. Dept of Interior, Geological Survey

AERIAL PHOTOGRAPH OF THE VICINITY OF THE SUBJECT SITE LOCATED AT

Scale: 1 inch to 800 feet

UTM North is straight up

Longitude: -103° 7' 43.1"
Latitude: 32° 39' 26.3"

UTM Easting: 675504 meters
UTM Northing: 3614656 meters
UTM Zone: NAD 13

County: LEA

Project: NHAP02 474 66
Quadrangle:
Date: 1986/07/19
Film Type: Black & White

Source: U.S. Dept of Interior, Geological Survey

AERIAL PHOTOGRAPH OF THE VICINITY OF THE SUBJECT SITE LOCATED AT

Scale: 1 inch to 500 feet

UTM North is straight up

Longitude: -103° 7' 43.1"
Latitude: 32° 39' 26.3"

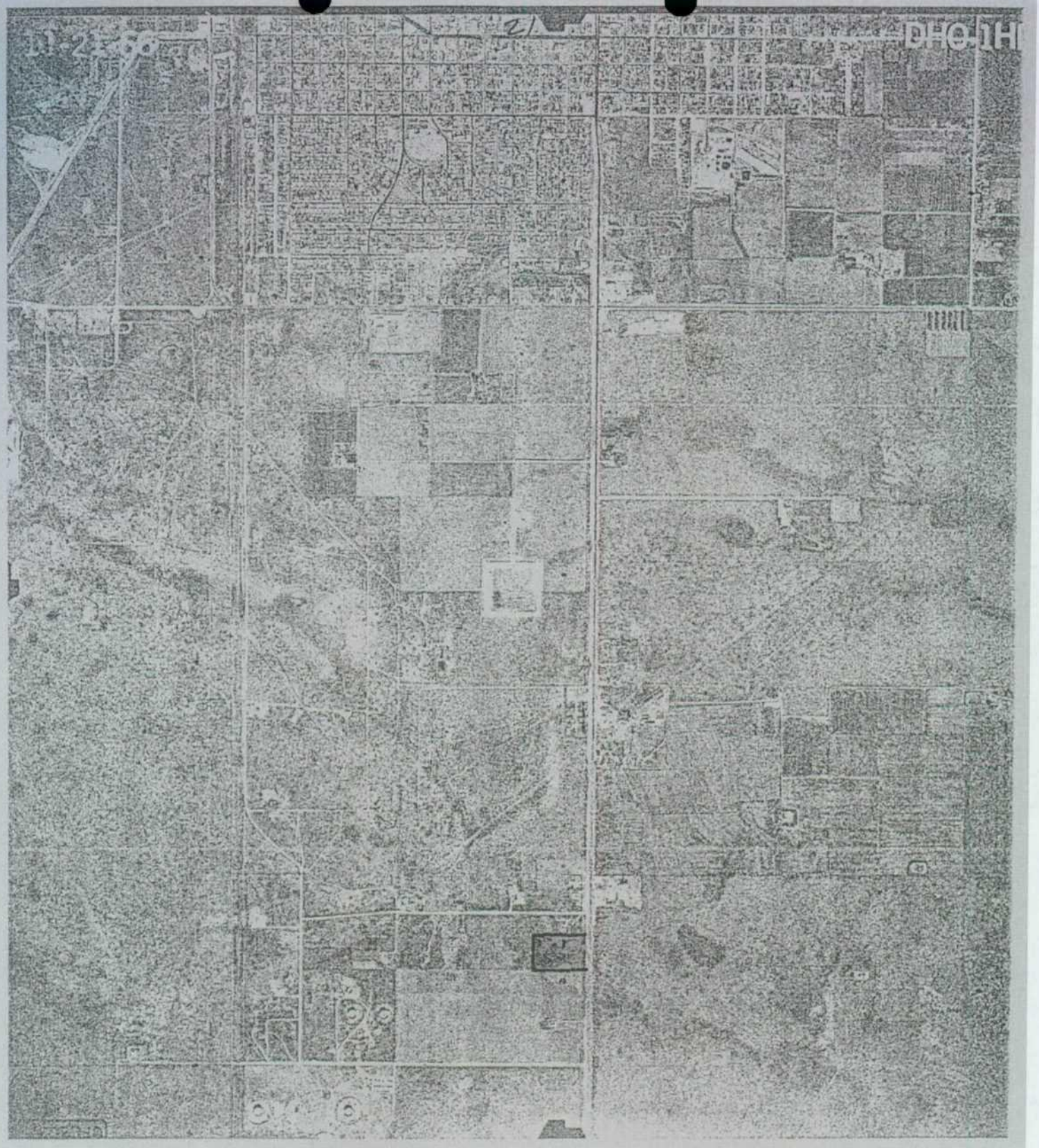
UTM Easting: 675504 meters
UTM Northing: 3614656 meters
UTM Zone: NAD 13

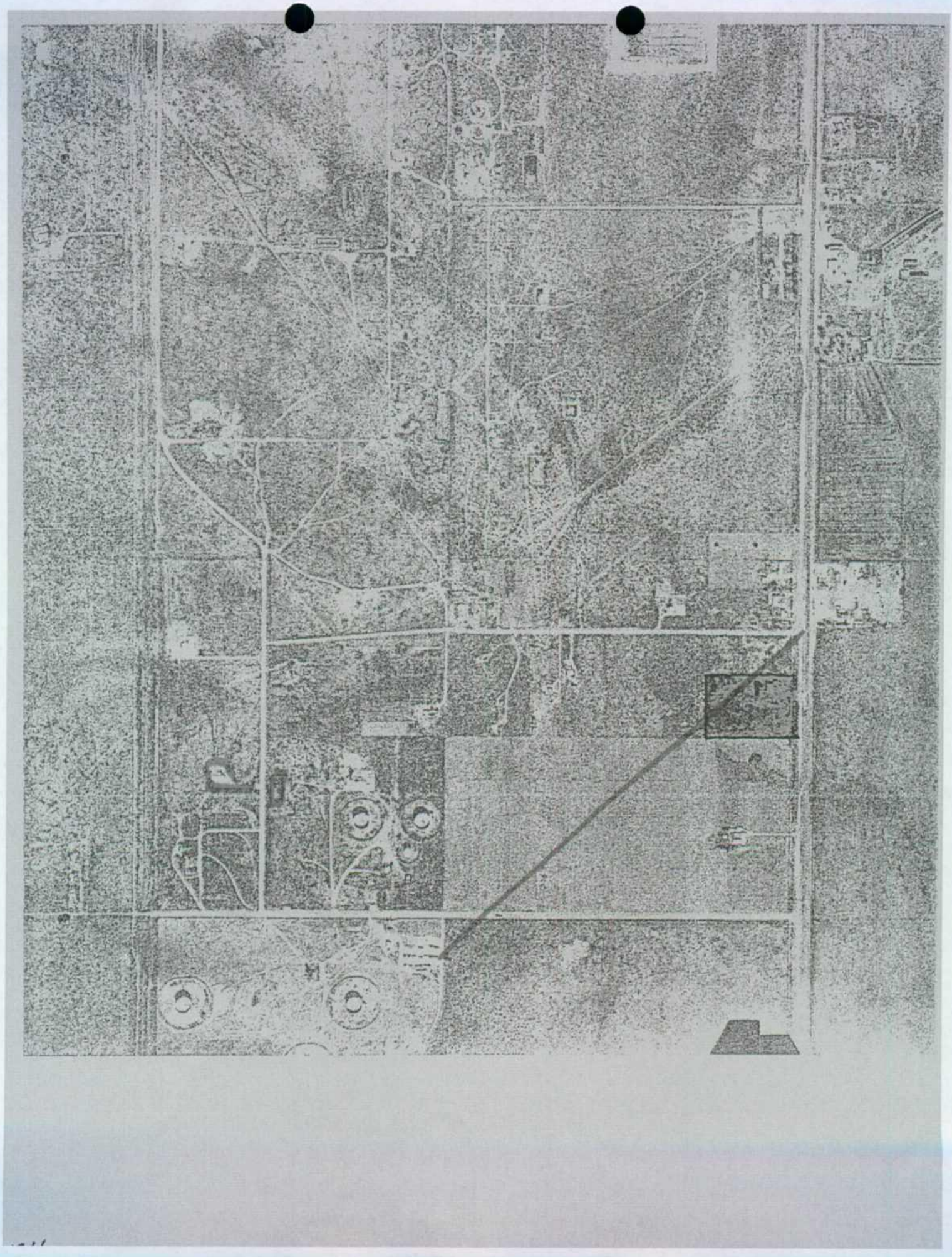
County: LEA

Project: VBQG 1-70
Quadrangle:
Date: 1967
Film Type: Black & White

Source: U.S. Dept of Interior, Geological Survey

AERIAL PHOTOGRAPH OF THE VICINITY OF THE SUBJECT SITE LOCATED AT
4001 S HWY 18 HOBBS





ATTACHMENT F

STORK

SwL

SOUTHWESTERN LABORATORIES

222 Cavalcade Street, 77009-3213
P.O. Box 8768, Houston, Texas 77249-8768
Tel (713) 692-9151 Fax (713) 696-6307

HYDRAULIC CONDUCTIVITY (ASTM D 5084), ORGANIC CONTENT (ASTM D2974) BULK DENSITY(ASTM D2937), MOISTURE CONTENT (ASTM D2216)

Project Name:	**Environmental Technoloy Group**		Proj. No.:
Sample ID:	**42-45 ft**		Lab No.: **51409**
Description of Soil:	Pale Brown Caliche Cemented Sand		
Porosity	31.0 %	Fraction Organic Corban = 0.3 %	

Back Pressure Saturation Conditions:		B Coefficient	> or = 0.95
Consolidation and Permeation Conditions:		Effective Stress, psi:	= 30.0
Pipet Length, Lp (cm)	11.237 in 28.542 cm	Pipet Area, a (25.000 cm^3/l.p)	= 0.876 cm^2
		Specific Gravity of Water, G_W	= 1.003

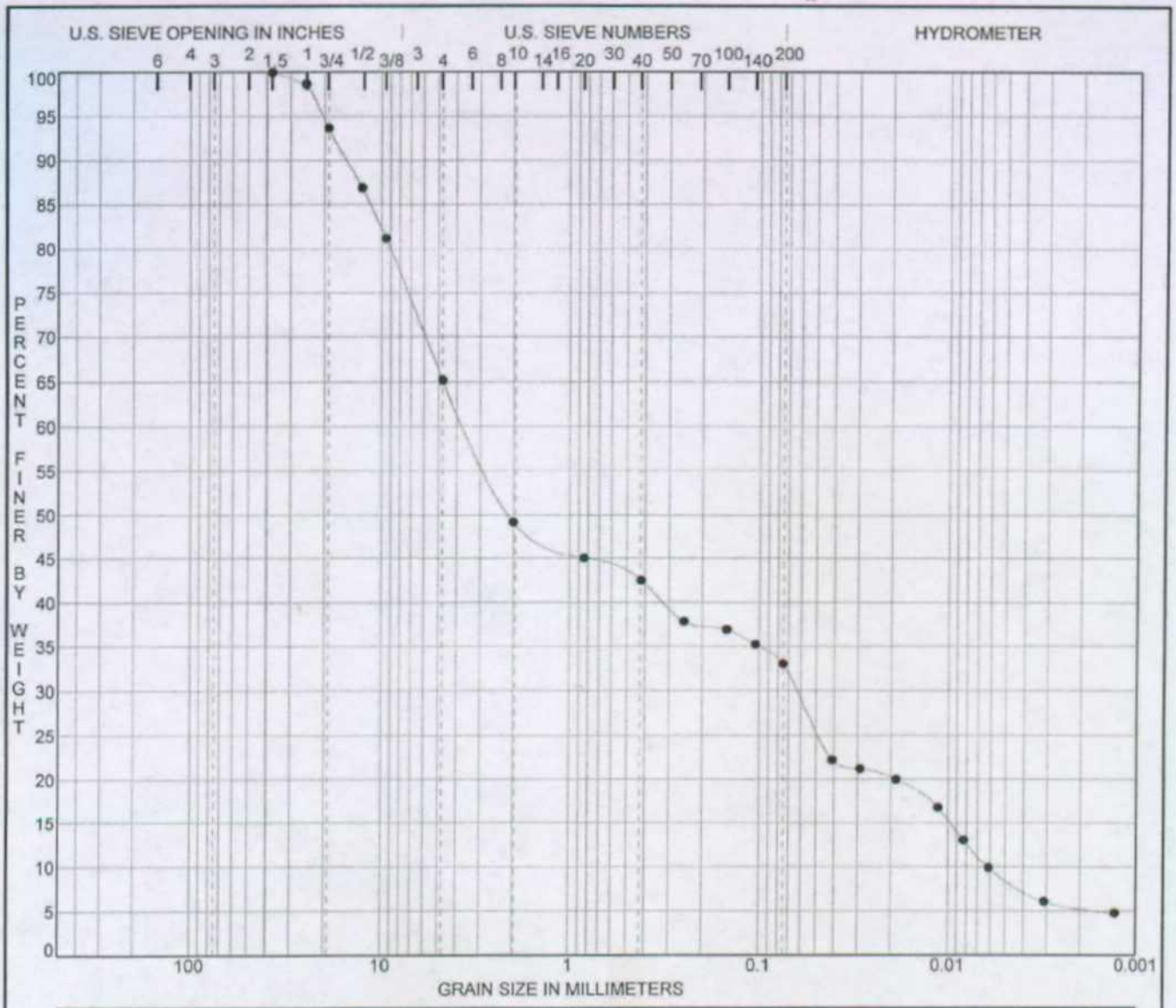
SPECIMEN DIMENSIONS AND PROPERTIES

Item	Initial			Final		
	Input Data	Cor. Factor	Output Data	Input Data	Cor. Factor	Output Data
Sample Diameter	2.825 in	2.54	7.18 cm	2.820 in	2.54	7.16 cm
Sample Area	6.27 in		40.44 cm^3	6.25		40.30 cm^2
Sample Length	3.65 in	2.54	9.27 cm	3.64 in	2.54	9.25 cm
Tare Number	6			100		
Tare Weight (gm)	144.86			130.26		
Wet Soil + Tare (gm)	786.60			608.20		
Dry Soil + Tare (gm)	734.00			542.10		
Water Weight (gm)			52.60			66.10
Dry Soil Weight (gm)			589.14			411.84
Moisture Content (%)			8.9			16.0
Wet Soil Weight (gm)	760.60			798.20		
Wet Bulk Density (pcf)			126.7			133.7
Dry Bulk Density (pcf)			116.3			115.3
Saturation (%)			53.7			95.0
Specific Gravity	2.700			TESTED		ASSUMED X

HYDRAULIC CONDUCTIVITY TESTING MEASUREMENT

Confining Pressure (psi)			82	Influent Pressure (psi)		52	Effluent Press. (psi)		50.5
Reset?	Meas. Time		ha_{out}	ha_{in}	Temperature	Gradient		k	k_{20}
1=Yes	Date	Time	(cm)	(cm)	(°C)	Min.	Max.	(cm/s)	(cm/s)
1	08/13	16:12:00	24.00	1.00	22.5	10	34		
	08/13	16:23:00	20.65	4.30	22.5	13		9.0E-06	8.5E-06
	08/13	16:36:00	16.85	7.10	22.5	13		8.1E-06	7.6E-06
	08/13	16:45:00	14.40	9.65	22.5	12		9.3E-06	8.7E-06
AVERAGE VALUES						13		8.8E-06	8.3E-06

Calculated by: M. Medi, E.I.T. Date: 08-14-2002



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth, ft	Sample Description	MC%	LL	PL	PI	Cc	Cu
•	42-45 ft	45.0	Pale Brown Caliche Cemented Sand w/Aggregates					0.18	626.8

	Boring No.	Depth, ft	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
•	42-45 ft	45.0	37.50	3.87	0.065	0.0062	34.9	32.1	27.7	5.3

PROJECT: Evironmental Technology Group
Midland, Texas

PROJECT NO: Report No.51409
DATE: 8/15/02

Southwestern Laboratories, Inc.

GRADATION CURVES

STORK®

SwL

SOUTHWESTERN LABORATORIES

222 Cavalcade Street, 77009-3213
P.O. Box 8768, Houston, Texas 77249-8768
Tel (713) 692-9151 Fax (713) 696-6307

HYDRAULIC CONDUCTIVITY (ASTM D 5084), ORGANIC CONTENT (ASTM D2974) BULK DENSITY(ASTM D2937), MOISTURE CONTENT (ASTM D2216)

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Pipet Length, Lp (cm) 11.237 in 28.542 cm	Pipet Area, a (25.000 cm^3/Lp)	=	0.876 cm^2
	Specific Gravity of Water, G_W	=	1.003

SPECIMEN DIMENSIONS AND PROPERTIES

Item	Initial			Final		
	Input Data	Cor. Factor	Output Data	Input Data	Cor. Factor	Output Data
Sample Diameter	2.825 in	2.54	7.18 cm	2.820 in	2.54	7.16 cm
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Dry Soil + Tare (gm)	734.00			542.10		
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Dry Soil Weight (gm)			589.14			411.84
Moisture Content (%)			8.9			16.0
Wet Soil Weight (gm)	760.60			798.20		
Wet Bulk Density (pcf)			126.7			133.7
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Saturation (%)			53.7			95.0
Specific Gravity	2.700		TESTED			ASSUMED X

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Reset?	Meas. Time		ha_{out}	ha_{in}	Temperature	Gradient		k	k_{20}
1=Yes	Date	Time	(cm)	(cm)	(°C)	Min.	Max.	(cm/s)	(cm/s)
1	08/13	16:12:00	24.00	1.00	22.5	10	34		
	08/13	16:23:00	20.65	4.30	22.5	13		9.0E-06	8.5E-06
	08/13	16:36:00	16.85	7.10	22.5	13		8.1E-06	7.6E-06
	08/13	16:45:00	14.40	9.65	22.5	12		9.3E-06	8.7E-06
AVERAGE VALUES						13		8.8E-06	8.3E-06

Calculated by: M. Medi, E.I.T. Date: 08-14-2002