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INVESTIGATIONS

LIMITED SITE INVESTIGATION

Trucker's #2 Brine Station West Broadway Place Hobbs NM

Terracon Project No. A4117046 June 22, 2011 HOBBS OCD

JUL 2 6 2011

RECEIVED

Prepared for:

Key Energy Services Inc. 6 Desta Drive, Ste 4300 Midland TX 79705

Prepared by:

TERRACON Midland Texas



June 22, 2011

Key Energy Services Inc 6 Desta Drive, Ste 4300 Midland TX 79705 Attn: Daniel Gibson

Telephone. (432) 571-7536 Fax (432) 571-7173 **HOBBS OCD**

JUL 2 6 2011

RECEIVED

Re Limited Site Investigation

Trucker's #2 Brine Station
West Broadway Place, Hobbs NM
Terracon Project No A4117046

Dear Daniel Gibson

Terracon is pleased to submit three copies of the Limited Site Investigation (LSI) report for the above referenced site. This investigation was performed in accordance with Terracon's Proposal Number PA4110073 dated May 5, 2011.

The investigation-derived waste materials are currently staged on-site. Upon your request, Terracon will provide a proposal for characterization and disposal of these materials.

We appreciate the opportunity to perform these services for Key Energy Services, Inc. Please contact either of the undersigned at (432) 684-9600 if you have questions regarding the information provided in the report

Sincerely,

<u>Ilerracon</u>

Prepared by

Wesley Ty Burrow Staff Geologist Reviewed by

Barrett W Bole
Senior Associate



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Terracon

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LIMITED SITE INVESTIGATION

Trucker's #2 Brine Station
West Broadway Place
Hobbs NM

Terracon Project No. A4117046 June 22, 2011 HOBBS OCD
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1.0 INTRODUCTION

1.1 Site Description

Site Name	Trucker's #2 Brine Station
Site Location/Address	West Broadway Place, Hobbs NM
General Site Description	Former brine station facility

A topographic map is included as Figure 1, and a site plan is included as Figure 2 of Appendix A.

1.2 Scope of Work

Terracon conducted a Limited Site Investigation (LSI) at the Trucker's #2 Brine Station, West Broadway Place, Hobbs NM. At your request, Terracon installed one- 2-inch monitoring well and advanced three soil borings (completed as temporary groundwater sampling points) Upon completion of drilling operations, soil and groundwater samples were submitted for analysis

The objective of the LSI was to evaluate the presence of chlorides in the on-site soils and groundwater (above relevant laboratory reporting limits) as a result of potential release from on-site brine sales activities. Terracon's LSI was conducted in accordance with Terracon's proposal dated May 11, 2011 as authorized by Daniel Gibson P. G., Corporate Environmental Director, Key Energy Services, Inc. on May 20, 2011

1.3 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory.

Trucker's #2 Brine Station Project Number: A4117046

June 22, 2011

agencies or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-97

1.4 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

2.0 FIELD ACTIVITIES

2.1 Borings and Monitoring Wells

Terracon's field activities were conducted from June 8, 2011 to June 10, 2011 by Wesley Ty Burrow, a Terracon Staff Geologist. As part of the approved scope of work, one permanent groundwater monitoring well (MW-3) and three soil borings completed as temporary groundwater sampling points (TMW-1, TMW-2, TMW-3) were advanced on site MW-3 was installed to the northeast of the former brine pit. TMW-1 was advanced to the west of the former brine pit, TMW-2 was installed in the center of the former brine pit. TMW-3 was installed to the southeast of the former brine pit.

Figure 1 presents the general boundaries and topography of the site on portions of the USGS topographic quadrangle map of Hobbs NM (Appendix A). Figure 2 is a site plan that indicates the approximate locations of the soil borings and monitoring wells in relation to the pertinent structures and general site boundaries (Appendix A).

Drilling services were performed by Straub Drilling using a truck-mounted air rotary drilling rig (Versa-Drill) under the supervision of a Terracon Staff Geologist Soil samples were collected using core barrel sampler. Drilling equipment was decontaminated using a high pressure washer prior to beginning the project and between each soil boring. Sampling equipment was cleaned using an

June 22, 2011

Alconox® wash and potable water prior to the beginning of the project and before collecting each soil sample

Soil samples were collected continuously in the upper 10 feet and at 10- foot increments thereafter, while observed to document soil lithology, color, moisture content and sensory evidence of impairment.

The general soil lithology encountered during sample collection consisted of the following.

- Calcareous fine-grained silty sand 0 to 50-60 feet bgs.
- Fine-grained silty sand 50-60 feet bgs to terminus of borings at depths of 65 to 80 feet bgs.

Detailed lithologic descriptions are presented on the soil boring logs included in Appendix B

Groundwater was encountered during installation of temporary groundwater sampling points TMW-1, TMW-2, TMW-3, and monitoring well MW-3 at depths of approximately 68 0 feet bgs, 58 0 feet bgs, 67.0 feet bgs, and 68.0 feet bgs, respectively.

Subsequent to advancement, temporary groundwater sampling points TMW-1, TMW-2, TMW-3 were completed as temporary monitoring wells. MW-3 was completed as flush-mounted groundwater monitoring well. The monitoring well and the temporary monitoring wells were completed using the following methodology:

- Installation of 20 feet of 2-inch diameter, 0.010-inch machine slotted PVC well screen with a threaded bottom cap;
- Installation of 58 feet of 2-inch diameter, threaded, flush joint PVC riser pipe to the surface,
- Addition of a pre-sieved [20/40-grade annular silica sand pack] from the bottom of the boring to approximately 2 feet above the top of the well screen,
- Addition of hydrated bentonite seal above the sand pack filter zone;
- Addition of a Portland cement to the near surface;
- Installation of an 8-inch diameter, circular, bolt-down, steel, monitoring well cover with locking well cap inset in a flush-mount, concrete well pad (permanent monitoring well only).

Monitoring well construction details are presented on the soil boring logs for these monitoring wells and are included in Appendix B.

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Trucker's #2 Brine Station Project Number: A4117046 June 22, 2011

The monitoring wells were developed by surging and removing groundwater with a ProActiv submersible pump until the groundwater was relatively free of fine-grained sediment. The submersible pump was decontaminated with Alconox® wash and potable water before/after each well was purged. Approximately 5 gallons of groundwater were removed from each of the temporary groundwater sampling points TMW-1, TMW-2, and TMW-3. Approximately 8 gallons of groundwater was removed from monitoring well MW-3 during development activities. Following sampling, TMW-1, TMW-2, TMW-3 were removed and backfilled with hydrated bentonite pellets and Portland cement to near surface grade.

Soil generated during drilling was stored on site with existing stockpiles, as instructed by client. Groundwater and equipment cleaning water generated during the field activities were placed in Department of Transportation (DOT) approved, 55-gallon steel drums, closed and appropriately labeled with project-specific information and initial accumulation date. A total of two 55-gallon drums containing groundwater/ and decontamination water were generated during these field services and were left onsite for subsequent characterization and disposal

2.2 Soil and Groundwater Sampling

Terracon's soil sampling program involved submitting up to 12 soil samples from each soil boring for laboratory analysis. Soil samples were collected continuously in upper 10 feet and at 10 foot intervals thereafter. Soil sample intervals for each boring are presented with the soil sample analytical results (Table 1) and are provided on the lithologic boring logs included in Appendix B.

One groundwater sample was collected and analyzed from each of two existing monitoring wells MW-1 and MW-2, newly installed monitoring well MW-3, and from temporary groundwater sampling points TMW-1, TMW-2, and TMW-3. Prior to sample collection, each monitoring well was purged of a minimum of three well casing volumes of groundwater. Subsequent to sufficient recharge, one groundwater sample was collected from each monitoring well utilizing a new ProActiv submersible pump. The submersible pump was decontaminated with Alconox® wash and potable water before/after each sample was collected.

Soil and groundwater samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to Xenco analytical laboratory in Odessa, Texas for standard turnaround analysis.

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3.0 LABORATORY ANALYTICAL METHODS

The soil and/ or groundwater samples collected from existing monitoring wells MW-1 and MW-2, temporary groundwater sampling points TMW-1, TMW-2, TMW-3, and newly installed monitoring well MW-3 were analyzed for chlorides using EPA method 300.1

Laboratory results are summarized in the tables included in Appendix C. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D

4.0 DATA EVALUATION

4.1 Soil Samples

The soil samples collected from the soil borings converted to MW-3 and temporary groundwater sampling points TMW-1, TMW-2, and TMW-3 displayed elevated chloride readings in shallow soils with decreasing concentrations with depth. Chloride concentrations decreased below 300 milligrams per kilogram (mg/Kg) between 22 and 30 fbgs (TMW-1), between 10 and 20 fbgs (TMW-2, TMW-3), and between 32 and 40 fbgs (MW-3)

4.2 Groundwater Samples

The groundwater samples yielded chloride concentrations ranging from 194 milligrams per liter (mg/L) to 1,790 mg/L. The groundwater sample with the most elevated concentration of 1,790 mg/L was collected from TMW-3. The groundwater sample from MW-1 (within 30 feet SE of TMW-3) exhibited a chloride concentration of 194 mg/L. Based on results from MW-1, it is likely that shallow soils with elevated chloride concentrations may have fallen from the boring sidewall during installation of the temporary monitoring well. This impacted soil would cause the elevated concentration. With the exception of TMW-3, the most elevated chloride concentration in groundwater collected was 919 mg/L from MW-2, which is hydraulically up gradient of the former brine pit on the northwest corner of the site. Remaining concentrations were 422 mg/L (MW-3), 452 mg/L (TMW-1), and 733 mg/L (TMW-2)

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5.0 FINDINGS AND RECOMMENDATIONS

- Based on the analytical results, the on-site shallow soils in the vicinity of newly installed MW-3 and temporary groundwater sampling points TMW-1, TMW-2, and TMW-3 displayed elevated chloride readings. However, chloride concentrations in soil decreased with depth.
- Based on the analytical results, the on-site groundwater displayed elevated chloride readings, ranging from 194 mg/L to 919 mg/L (excluding data from TMW-3)
- The most elevated chloride concentration was identified in groundwater sampled from MW-2, up gradient of former site operations.

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map for June 10, 2011

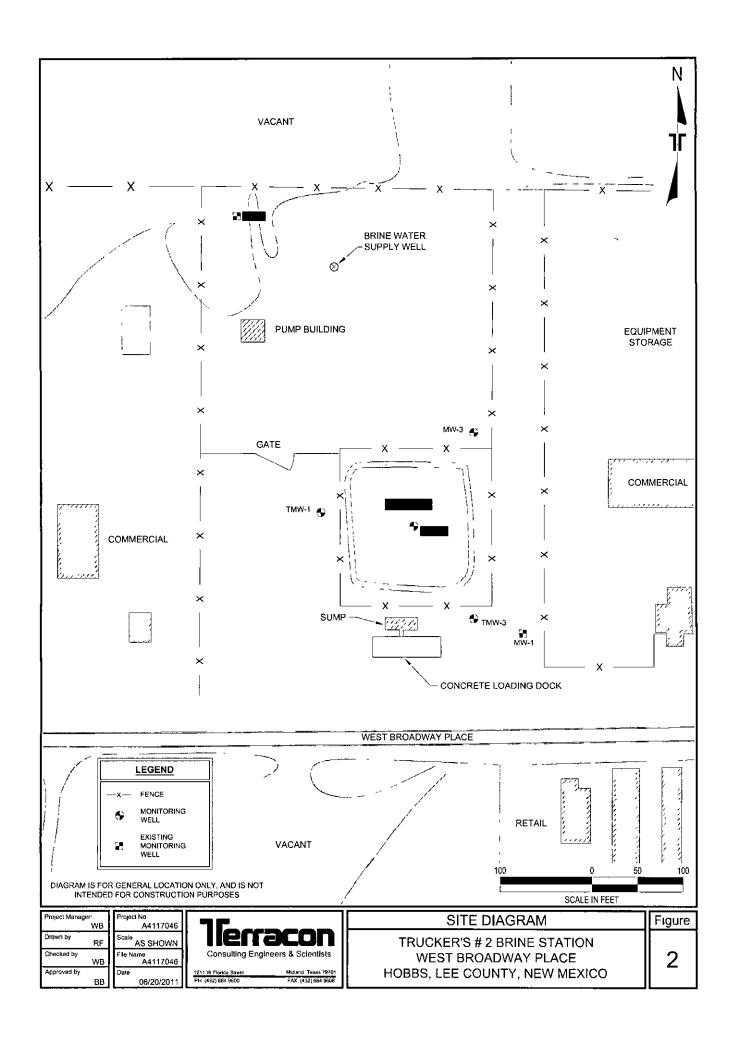
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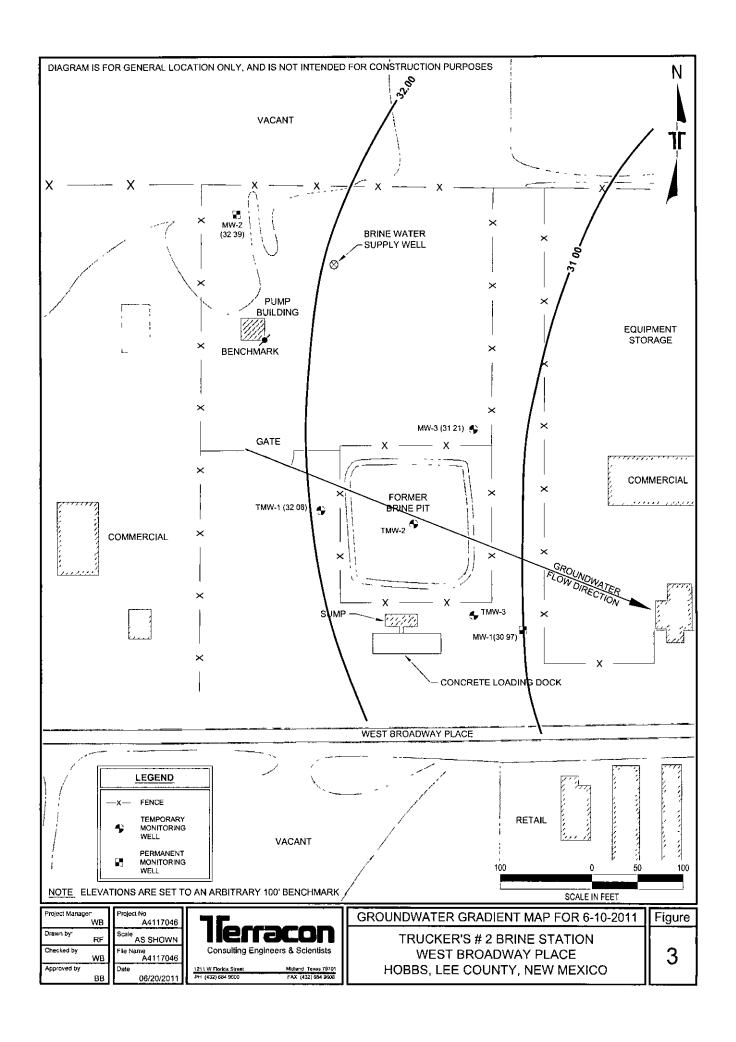
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TRUCKER'S # 2 BRINE STATION WEST BROADWAY PLACE HOBBS, LEE COUNTY, NEW MEXICO

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APPENDIX B

Boring Logs

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APPENDIX C

Tables

Table 1

CONCENTRATIONS OF CHLORIDES IN SOIL

Key Energy Services, Inc. Trucker's #2 Brine Station Lea County, NM Terracon Project Number A4117046

All concentrations are in mg/ kg

0.11401.51.661.51	A 1101 E 2 : T2	0.4451.5.1155	EPA Method		
SAMPLE LOCATION	SAMPLE DATE	SAMPLE INTERVAL	300 1		
			Total Chlorides		
TMW-1	06/08/11	0-5 fbgs	2,770		
TMW-1	06/08/11	5-7 fbgs	2,110		
TMW-1	06/08/11	8-10 fbgs	1,650		
TMW-1	06/08/11	20-22 fbgs	541		
TMW-1	06/08/11	30-32 fbgs	194		
TMW-1	06/08/11	40-42 fbgs	83 5		
TMW-1	06/08/11	50-52 fbgs	67 1		
TMW-1	06/08/11	60-62 fbgs	18 0		
TMW-2	06/08/11	0-2 fbgs	5,130		
TMW-2	06/08/11	2-4 fbgs	6,180		
TMW-2	06/08/11	4-6 fbgs	4,780		
TMW-2	06/08/11	6-8 fbgs	5,580		
TMW-2	06/08/11	8-10 fbgs	3,340		
TMW-2	06/08/11	20-22 fbgs	27 7		
TMW-2	06/08/11	30-32 fbgs	50 5		
TMW-2	06/08/11	40-42 fbgs	72 1		
TMW-2	06/08/11	50-52 fbgs	36 3		
TMW-3	06/09/11	0-2 fbgs	3,170		
TMW-3	06/09/11	2-4 fbgs	3,370		
TMW-3	06/09/11	4-6 fbgs	2.710		
TMW-3	06/09/11	6-8 fbgs	1,890		
TMW-3	06/09/11	8-10 fbgs	1,250		
TMW-3	06/09/11	20-22 fbgs	127		
TMW-3	06/09/11	30-32 fbgs	146		
TMW-3	06/09/11	40-42 fbgs	64.5		
TMW-3	06/09/11	50-52 fbgs	45 9		
TMW-3	06/09/11	60-62 fbgs	72 3		
MW-3	06/09/11	0-2 fbgs	555		
MW-3	06/09/11	2-4 fbgs	1,530		
MW-3	06/09/11	4-6 fbgs	1,610		
MW-3	06/09/11	6-8 fbgs	1,200		
MW-3	06/09/11	8-10 fbgs	847		
MW-3	06/09/11	20-22 fbgs	811		
MW-3	06/09/11	30-32 fbgs	645		
MW-3	06/09/11	40-42 fbgs	145		
MW-3	06/09/11	50-52 fbgs	130		
MW-3	06/09/11	60-62 fbgs	40 7		
	00/00/11	00-02 lbgs	707		

NOTES

fbgs = feet below ground surface

TMW-2 was advanced beginning 10 fbgs, making the sample interval effectively 10 feet deeper than documented on laboratory identification information

Table 2

CONCENTRATIONS OF CHLORIDES IN GROUNDWATER

Key Energy Services, Inc. Trucker's #2 Brine Station Lea County, NM **Terracon Project Number A4117046**

All concentrations are in mg/ L

SAMPLE LOCATION	SAMPLE DATE	Top of Casing Elevation *	GROUNDWATER DEPTH (in feet below top-of- casing)	Groundwater Elevation	EPA Method 300.1
			outing,		Total Chlorides
MW-1	06/10/11	97 71	66 74	30 97	194
MW-2	06/10/11	99 09	66 70	32 39	919
MVV-3	06/10/11	97 86	66 65	31 21	422
TMW-1	06/10/11	99 52	67 46	32 06	452
TMW-2	06/10/11	not measured	57 35	not measured	733
TMW-3	06/10/11	not measured	66 92	not measured	1,790

NOTES fbgs = feet below ground surface

^{*} locations surveyed in relation to an onsite benchmark with an assigne d elevation of 100 00 feet

APPENDIX D

Laboratory Data Sheets

Analytical Report 419675

for

Terracon Consultants, Inc.- Midland

Project Manager: Barrett Bole Hobbs SWD- Key A4117046

14-JUN-11

Collected By Client



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Xenco-Atlanta (EPA Lab Code GA00046)

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALII), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152). Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code FL01212) Florida (E84900)

Xenco-Odessa (EPA Lab code TX00158) Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code TX01468) Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code TX02613) Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code FL01273)

Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code AZ00901)

Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816) Xenco-Phoenix Mobile (EPA Lab code AZ00901) Arizona (AZM757)

Xenco Tucson (EPA Lab code AZ000989) Arizona (AZ0758)





14-JUN-11

Project Manager Barrett Bole Terracon Consultants, Inc.- Midland 1211 W Florida Avenue Midland, TX 79701

Reference. XENCO Report No 419675

Hobbs SWD- Key

Project Address

Barrett Bole

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 419675. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 419675 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc.)

We thank you for selecting XENCO Laboratories to serve your analytical needs
If you have any questions concerning this report, please feel free to contact us at any time

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 419675



Terracon Consultants, Inc.- Midland, Midland, TX

Hobbs SWD- Key

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW3	W	Jun-10-11 09 30		419675-001
MW2	W	Jun-10-11 10 00		419675-002
MWI	W	Jun-10-11 10 30		419675-003
TMW3	W	Jun-10-11 11 00		419675-004
TMWI	W	Jun-10-11 11 30		419675-005
TMW2	W	Jun-10-11 12 00		419675-006

CASE NARRATIVE



Client Name: Terracon Consultants, Inc.- Midland

Project Name: Hobbs SWD- Key



Project ID A4117046 Work Order Number: 419675

Date Received 06/13/2011

Report Date 14-JUN-11

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Project Location:

Project Id: A4117046

Contact: Barrett Bole

Certificate of Analysis Summary 419675

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11 30 am

Report Date: 14-JUN-11

roject Location.								Project Mar	ager: E	Brent Barron,	П		
	Lab Id	419675-0	001	419675-0	02	419675-0	03	419675-0	04	419675-0	005	419675-0	006
Amalusia Busyastad	Field Id	MW3		MW2		MWI		TMW3	İ	TMW	1	TMW2	2
Analysis Requested	Depth												
	Matrix	WATE	R	WATE	٠	WATER	≀	WATER	١	WATE	R	WATE	R
	Sampled	Jun-10-11 (09 30	Jun-10-11 l	0 00	Jun-10-11 1	0 30	Jun-10-11 1	1 00	Jun-10-11	11 30	Jun-10-11 1	12 00
Anions by E300	Extracted												
	Analyzed	Jun-13-11	14 06	Jun-13-11 1	4 28	Jun-13-11 1	4 50	Jun-13-11 1	5 12	Jun-13-11	15 34	Jun-13-11 1	15 56
	Units/RL.	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		422	125	919	25 0	194	100	1790	100	452	25 0	733	25 0

Page 5 of 11

This analytical report and the entire data package it represents has been made for your exclusive and confidential use The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories XFNCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing

Houston - Dalias - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Odessa Laboratory Manager

Final 1 000



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD
- A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference Dilution factors are included in the final results. The result is from a diluted sample
- E The data exceeds the upper calibration limit, therefore, the concentration is reported as estimated
- F RPD exceeded lab control limits
- J The target analyte was positively identified below the MQL and above the SQL
- U Analyte was not detected
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analytic. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director Data were determined to be valid for reporting
- K Sample analyzed outside of recommended hold time
- JN A combination of the "N" and the "J" qualifier The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample

BRL Below Reporting Limit

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

LOD Limit of Detection

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation

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Final 1 000

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(602) 437-0330

(432) 563-1713

(361) 884-9116



BS/BSD Recoveries



Project Name: Hobbs SWD- Key

Work Order #: 419675 Analyst: LATCOR

Date Prepared: 06/13/2011 Batch #: 1

Project ID: A4117046

Date Analyzed: 06/13/2011

Lab Batch ID: 859870

Sample: 859870-1-BKS

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE/BLANK SPIKE DUPLICATE RECOVERY STUDY

Onto: C											
Anions by E300	Blank Sample Result [A]	Spike Added	Biank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		(B)	[C]	[D]	(E)	Result [F]	[G]				
Chloride	<0.500	100	9 80	98	100	9 75	98	1 '	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: Hobbs SWD- Key



Work Order #: 419675

Lab Batch #: 859870 Date Analyzed: 06/13/2011

Project ID: A4117046

Date Prepared: 06/13/2011

Analyst: LATCOR

QC- Sample ID: 419517-001 S

Batch #: 1 Matrix: Water

Reporting Units: mg/L	MATE	MATRIX / MATRIX SPIKE RECOVERY STUDY							
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag			
Analytes	(1-1	101							
Chloride	<25 0	500	533	107	80-120				

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Hobbs SWD-Key

Work Order #: 419675

Lab Batch #: 859870

QC- Sample ID: 419517-001 D

Date Analyzed: 06/13/2011 11 10

Project ID: A4117046

Date Prepared: 06/13/2011 Analyst:LATCOR Batch #: 1 Matrix: Water

Reporting Units: mg/L	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Anions by E300	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag					
Analyte		[B]								
Chloride	<25 0	<25 0	0	20						

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Document No.: SYS-SRC

Revision/Date No. 01, 5/27/2010

Effective Date 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

1	an)			-				
Client: Jilla!								
	11 11:30							
Lab ID#: 419	b75							
Initials: 7 +								
		S	ample Receipt Ci	recki	ist			
1. Samples on ice?	···				Blue	Water	No	
2. Shipping container i	n good condition?				Yes	No	None	
3. Custody seals intac	t on shipping conta	ner (co	oler) and bottles?		Yes	No	(N/A	
4. Chain of Custody pr					Yes	No		
5. Sample instructions	complete on chain	of cus	tody?		Yes	No		
6. Any missing / extra	samples?				Yes	(No)		
7. Chain of custody sig	gned when relinquis	hed / r	eceived?		Yes	No		
8. Chain of custody ag	rees with sample la	bel(s)?			Yes	No		
9. Container labels leg					(Yes)	No		
10. Sample matrix / pr	operties agree with	chain c	of custody?		(Yes)	No		•
11. Samples in proper					Yes	No		
12. Samples property	preserved?				(Yes)	No	N/A	
13. Sample container	intact?				(Yes	No		
14. Sufficient sample :	amount for indicate	d test(s)?		Yes.	No		
15. All samples receiv					Yes	No		
16. Subcontract of sar					Yes	No	(NA)	
17. VOC sample have					Yes	No	(N/A	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No		Cooler 5 No.	·
1bs 5 (c	°C lbs	°C	!	°c		°c		۰
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Contact:	Conta	cted by	/:	_		Date/Time.		
Regarding:						_		
								
Corrective Action Tak	en:					······································	·····	
								
Check all that apply:	☐ Cooling process	has be	egun shortly after san	npling	event and o	ut of temper	ature	
	□initial and Backı	ıp Tem	perature confirm out	of tem	perature con	ditions		

Analytical Report 419668

for

Terracon Consultants, Inc.- Midland

Project Manager: Barrett Bole Hobbs SWD- Key A4117046

15-JUN-11

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Xenco-Atlanta (EPA Lab Code GA00046)

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code FL01152). Florida (E86678), Maryland (330) Xenco-Tampa Mobile (EPA Lab code FL01212). Florida (E84900) Xenco-Odessa (EPA Lab code TX00158). Texas (T104704400-TX) Xenco-Dallas (EPA Lab code TX01468). Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code TX02613) Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code FL01273)

Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917) North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901)
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code AZ00901) Arizona (AZM757)
Xenco Tucson (EPA Lab code AZ000989) Arizona (AZ0758)





15-JUN-11

Project Manager Barrett Bole Terracon Consultants, Inc.- Midland 1211 W Florida Avenue Midland, TX 79701

Reference XENCO Report No: 419668

Hobbs SWD- Key Project Address

Barrett Bole

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 419668. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 419668 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc)

We thank you for selecting XENCO Laboratories to serve your analytical needs If you have any questions concerning this report, please feel free to contact us at any time

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 419668



Terracon Consultants, Inc.- Midland, Midland, TX Hobbs SWD- Key

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TMW1 0-5	S	Jun-08-11 12 00	0 - 5	419668-001
TMW1 5-7	S	Jun-08-11 12 00	5 - 7	419668-002
TMW1 8-10	S	Jun-08-11 12 00	8 - 10	419668-003
TMWI 20-22	S	Jun-08-11 12.00	20 - 22	419668-004
TMW1 30-32	S	Jun-08-11 12 00	30 - 32	419668-005
TMW1 40-42	S	Jun-08-11 12 00	40 - 42	419668-006
TMW1 50-52	S	Jun-08-11 12 00	50 - 52	419668-007
TMW1 60-62	S	Jun-08-11 12 00	60 ₇ 62	419668-008
TMW2 0-2	S	Jun-08-11 16 00	0 - 2	419668-009
TMW2 2-4	S	Jun-08-11 16 00	2 - 4	419668-010
TMW2 4-6	S	Jun-08-11 16 00	4 - 6	419668-011
TMW2 6-8	S	Jun-08-11 16 00	6 - 8	419668-012
TMW2 8-10	S	Jun-08-11 16 00	8 - 10	419668-013
TMW2 20-22	S	Jun-08-11 16 00	20 - 22	419668-014
TMW2 30-32	S	Jun-08-11 16 00	30 - 32	419668-015
TMW2 40-42	S	Jun-08-11 16 00	40 - 42	419668-016
TMW2 50-52	S	Jun-08-11 16 00	50 - 52	419668-017
TMW3 0-2	S	Jun-09-11 11 30	0 - 2	419668-018
TMW3 2-4	S	Jun-09-11 11 30	2 - 4	419668-019
TMW3 4-6	S	Jun-09-11 11 30	4 - 6	419668-020
TMW3 6-8	S	Jun-09-11 11 30	6 - 8	419668-021
TMW3 8-10	S	Jun-09-11 11 30	8 - 10	419668-022
TMW3 20-22	S	Jun-09-11 11 30	20 - 22	419668-023
TMW3 30-32	S	Jun-09-11 11 30	30 - 32	419668-024
TMW3 40-42	S	Jun-09-11 11 30	40 - 42	419668-025
TMW3 50-52	S	Jun-09-11 11 30	50 - 52	419668-026
TMW3 60-62	S	Jun-09-11 11 30	60 - 62	419668-027
MW3 0-2	S	Jun-09-11 16 00	0 - 2	419668-028
MW3 2-4	S	Jun-09-11 16 00	2 - 4	419668-029
MW3 4-6	S	Jun-09-11 16 00	4 - 6	419668-030
MW3 6-8	S	Jun-09-11 16 00	6 - 8	419668-031
MW3 8-10	S	Jun-09-11 16 00	8 - 10	419668-032
MW3 20-22	S	Jun-09-11 16 00	20 - 22	419668-033
MW3 30-32	S	Jun-09-11 16 00	30 - 32	419668-034
MW3 40-42	S	Jun-09-11 16 00	40 - 42	419668-035
MW3 50-52	S	Jun-09-11 16 00	50 - 52	419668-036
MW3 60-62	S	Jun-09-11 16 00	60 - 62	419668-037

CASE NARRATIVE



Client Name: Terracon Consultants, Inc.- Midland

Project Name: Hobbs SWD- Key



Project ID A4117046 Work Order Number: 419668 Report Date 15-JUN-11 Date Received 06/13/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Final 1 000



Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key



Project Id. A4117046
Contact: Barrett Bole

Date Received in Lab: Mon Jun-13-11 11 30 am

Report Date: 15-JUN-11

Project Manager: Brent Barron, II

								Froject Mai	nagei.	Jiem Barron,	**		
	Lub Id.	419668-0	001	419668-0	02	419668-0	03	419668-0	04	419668-0	005	419668-0	06
4 4 5 7	Field Id:	TMW1 ()-5	TMW1 5	-7	TMW1 8-	10	TMW1 20	-22	TMW1 30	-32	TMWL 40	-42
Analysis Requested	Depth:	0-5		5-7		8-10		20-22		30-32		40-42	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-08-11	12 00	Jun-08-11 1	2 00	Jun-08-11 1	2 00	Jun-08-11 ł	2 00	Jun-08-11	12 00	Jun-08-11 1	2 00
Anions by E300	Extracted:							<u> </u>		 -		-	
	Analyzed	Jun-13-11	18 53	Jun-13-11 1	8 53	Jun-13-11 1	8 53	Jun-13-11 1	18 53	Jun-13-11	18 53	Jun-13-11 1	8 53
	Unit√RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2770	46 8	2110	50 3	1650	49 0	541	9 27	194	9 09	83 5	4 4
Percent Moisture	Extracted:												
	Analyzed:	Jun-13-11	17 00	Jun-13-11 i	17 00	Jun-13-11 I	7 00	Jun-13-11	17 00	Jun-13-11	17 00	Jun-13-11 1	17 00
	Unit√RL	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		103	1 00	16.5	1 00	14 2	1 00	941	1 00	7 57	1 00	619	1.00



Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key



Project Id. A4117046

Contact: Barrett Bole

Project Location.

Date Received in Lab. Mon Jun-13-11 11 30 am

Report Date: 15-JUN-11

Project Manager: Brent Barron, II

								I Toject I Tal	g-:	Trem Banen			
	Lab Id.	419668-0	007	419668-0	08	419668-0	09	419668-0	10	419668-0	11	419668-0	12
A distant	Field Id.	TMW1 50)-52	TMW1 60	-62	TMW2 0	-2	TMW2 2	-4	TMW2 4	-6	TMW2 6	-8
Analysis Requested	Depth.	50-52		60-62		0-2		2-4		4-6		6-8	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled.	Jun-08-11	12 00	Jun-08-1! 1	2 00	fun-08-11 1	6 00	Jun-08-11 1	6 00	Jun-08-11	6 00	Jun-08-11-1	6 00
Anions by E300	Extracted:												
	Analyzed	Jun-13-11	18 53	Jun-13-11 1	8 53	Jun-13-11 l	8 53	Jun-13-11 1	8 53	Jun-13-11	18 53	Jun-13-11 I	8 53
	Units/RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		67 1	4 43	18 0	4 35	5130	184	6180	185	4780	181	5580	183
Percent Moisture	Extracted		-					-					
	Analyzed	Jun-13-11	17 00	Jun-13-11 i	7 00	Jun-13-11 1	7 00	Jun-13-11 1	7 00	Jun-13-11	17 00	Jun-13-11 1	7 00
	Units/RL	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5 25	1 00	3 48	1 00	8 93	1 00	9 04	1 00	7 25	1 00	7 95	1 00



Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11 30 am

Report Date: 15-JUN-11

Project Manager: Brent Barron, II

Project Location:

Project Id: A4117046

Contact: Barrett Bole

										STOTIC ESTREET			
	Lab Id.	419668-0	013	419668-0	14	419668-0	15	419668-0	16	419668-0	17	419668-0	918
4 1	Field Id:	TMW2 8	-10	TMW2 20	-22	TMW2 30	-32	TMW2 40	-42	TMW2 50	-52	TMW3 0)-2
Analysis Requested	Depth.	8-10		20-22		30-32		40-42		50-52	ŀ	0-2	
	Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	}	SOIL	
	Sampled:	Jun-08-11	16 00	Jun-08-11 1	6 00	Jun-08-11 1	6 00	Jun-08-il !	6 00	Jun-08-11 1	6 00	Jun-09-11	11 30
Anions by E300	Extracted				1								
	Analyzed	Jun-13-11	18 53	Jun-13-11 t	8 53	Jun-13-11 1	8 53	Jun-13-11	8 53	Jun-14-11 0	6 52	Jun-14-11 (06 52
	Units/RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL.
Chloride		3340	89.5	27 7	871	50 5	4 40	72 1	4 44	36 3	4 38	3170	90 €
Percent Moisture	Extracted:	-											
	Analyzed	Jun-13-1!	17 00	Jun-13-11 1	7 00	Jun-13-11 i	7 00	Jun-13-11	17 00	Jun-13-11 1	7 00	Jun-13-11	17 00
	Units/RL	%	RL	%	RL	%	RL	%	RL	%	RL	<u></u> %	RL
Percent Moisture		611	1 00	3 53	1 00	4 50	1 00 [5 37	1 00	4 09	1 00	7 28	1 00

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Brent Barron, II Odessa Laboratory Manager



Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX



Project Id: A4117046

Contact: Barrett Bole

Project Name: Hobbs SWD-Key

Date Received in Lab: Mon Jun-13-11 11 30 am
Report Date: 15-JUN-11

Report Date: 15-JUN-11
Project Manager: Brent Barron, II

								Troject Ma.	nager. I	otent Darron,	11		
	Lab Id.	419668-0	019	419668-0	20	419668-0	21	419668-0)22	419668-0	23	419668-0)24
Anabasia Danasantad	Field Id.	TMW3 2	2-4	TMW3 4	-6	TMW3 6	-8	TMW3 8	-10	TMW3 20	-22	TMW3 30)-32
Analysis Requested	Depth.	2-4		4-6		6-8		8-10	ļ	20-22		30-32	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled.	Jun-09-11	11 30	Jun-09-11 1	1 30	Jun-09-11 1	1 30	Jun-09-11	11 30	Jun-09-11	1 30	Jun-09-11 1	11 30
Anions by E300	Extracted	-					i						
	Analyzed:	Jun-14-11	06 52	Jun-14-11 0	6 52	Jun-14-11 0	6 52	Jun-14-11 (06 52	Jun-14-11 (06 52	Jun-14-11 0	ე6 52
	Units/RL	mg/kg	RL.	mg/kg	RL	rng/kg	RL	mg/kg	RL.	mg/kg	RL	mg/kg	RL
Chloride		3370	90 4	2710	48 1	1890	48 2	1250	49 2	127	8 93	146	9 09
Percent Moisture	Extracted						·						
	Analyzed	Jun-13-11	17 00	Jun-13-11 I	7 00	Jun-13-11 1	7 00	Jun-13-11	17 00	Jun-13-11	7 00	Jun-13-11 1	17 00
	Units/RL.	%	RL	%	RL	%	RL	%	RĹ	%	RL	%	RL
Percent Moisture		7 05	1 00	12 7	1 00	129	1 00	14 6	1 00	5 90	1 00	7 61	1 00

Odessa Laboratory Manager



Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key



Project Id: A4117046 Contact: Barrett Bole

Date Received in Lab. Mon Jun-13-11 11 30 am

Report Date: 15-JUN-11

Project Manager: Brent Barron, II

								r rojeci iviai	ager. I	JICHI DAITOH,	**		
	Lab Id	419668-0)25	419668-0	26	419668-0)27	419668-0	28	419668-0	29	419668-0	30
Aughoria Danasand	Field Id	TMW3 40)-42	TMW3 50	-52	TMW3 60)-62	MW3 0-	2	MW3 2-	4	MW3 4-	6
Analysis Requested	Depth	40-42		50-52		60-62		0-2		2-4		4-6	
	Matrix	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled	Jun-09-11	11 30	Jun-09-11 1	1 30 -	Jun-09-11 1	11 30	Jun-09-11 1	6 00	Jun-09-11 1	6 00	Jun-09-11 1	6 00
Anions by E300	Extracted												
	Analyzed	Jun-14-11	06 52	Jun-14-11 0	6 52	Jun-14-11 (06 52	Jun-14-11 (6 52	Jun-14-11 ()6 52	Jun-14-11 0	6 52
	Units/RL	mg/kg	RL	mg/kg	RL.	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chlonde		64 5	4 34	45 9	4 40	72 3	4 39	555	177	1530	47 2	1610	47 5
Percent Moisture	Extracted												
	Analyzed Jun-13-11 17 00	17 00	Jun-13-11 I	7 00	Jun-13-11	17 00	Jun-13-11 1	7 00	Jun-13-11	17 00	Jun-13-11 !	7 00	
	Units/RL.	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3 23	1 00	4 64	1 00	4 23	1 00	5 04	1 00	111	1 00	11.5	1 00

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Brent Barron, II Odessa Laboratory Manager

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Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key



Project Id: A4117046 Contact: Barrett Bole

Date Received in Lab: Mon Jun-13-11 11 30 am

Report Date: 15-JUN-11

Project Manager: Brent Barron, Il

								I TOJECT MIA	lager.	orche Darron,	11		
	Lab Id.	419668-0	31	419668-0	32	419668-0)33	419668-0	34	419668-0	35	419668-0	36
Analysis Boonseted	Field Id.	MW3 6	-8	MW3 8-	10	MW3 20-	-22	MW3 30-	-32	MW3 40	-42	MW3 50-	-52
Analysis Requested	Depth.	h. 6-8		8-10		20-22		30-32		40-42		50-52	
	Matrix:	SOIL		SOIL		SOIL	1	SOIL		SOIL		SOIL	
	Sampled.	Jun-09-11	16 00	Jun-09-11 1	6 00	Jun-09-11 1	16 00	Jun-09-11 3	6 00	Jun-09-11	16 00	Jun-09-11 1	6 00
Anions by E300	Extracted:									.			••
	Analyzed	Jun-14-11	06 52	Jun-14-11 (6 52	Jun-14-11 (06 52	Jun-14-11 (6 52	Jun-14-11 (06 52	Jun-14-11 (06 52
	Units/RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL.
Chloride		1200	50 1	847	23 4	811	22 1	645	181	145	9 00	130	8 78
Percent Moisture	Extracted						ĺ						
	Analyzed	Jun-13-11	17 00	Jun-13-11 1	7 00	Jun-13-11	17 00	Jun-13-11 1	7 00	Jun-13-11	17 00	Jun-13-11 I	17 00
	Units/RL	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		16 I	1 00	102	1 00	5 08	1 00	7 00	1 00	6 71	1 00	4 38	1 00

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Odessa Laboratory Manager



Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX



Project Id: A4117046

Contact: Barrett Bole

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11 30 am

Report Date: 15-JUN-11

roject Location.			Project Manager: Brent	t Barron, II
	Lab Id.	419668-037		
Analysis Requested	Field Id.	MW3 60-62		
Anutysis Requested	Depth.	60-62		
	Matrix.	SOIL		Ì
	Sampled.	Jun-09-11 16 00		
Anions by E300	Extracted:			
	Analyzed	Jun-15-11 14 27		
	Units/RL.	mg/kg RL		
Chloride		40 7 4 33		
Percent Moisture	Extracted			
	Analyzed:	Jun-13-11 17 00		
	Units/RL	% RL		
Percent Moisture		3 02 1 00		

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Odessa Laboratory Manager
Final 1 000

Brent Barron, II



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit, therefore, the concentration is reported as estimated
- F RPD exceeded lab control limits
- J The target analyte was positively identified below the MQL and above the SQL
- U Analyte was not detected
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present, in the environmental sample
- **BRL** Below Reporting Limit
- **RL** Reporting Limit
- MDL Method Detection Limit
- POL Practical Quantitation Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable
- + Outside XENCO's scope of NELAC Accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio 1X 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West 1-20 East, Odessa, FX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lanc, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	



BS/BSD Recoveries



Project Name: Hobbs SWD- Key

Work Order #: 419668

Date Prepared: 06/13/2011 **Batch #**: 1

Project ID: A4117046

Analyst: LATCOR

Date Prepared 00/13/20

Date Analyzed: 06/13/2011

Lab Batch ID: 859872

Sample: 859872-1-BKS

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE	RECOVI	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup %R	RPD %	Centrol Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	D	[E]	Result [F]	[G]				
Chloride	<0 420	100	9 66	97	100	106	106	9	75-125	20	

Analyst: LATCOR

Date Prepared: 06/14/2011

Date Analyzed: 06/14/2011

Lab Batch ID: 859946

Sample: 859946-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<0 420	100	9 45	95	100	9 33	93	!	75-125	20	<u> </u>

Analyst: LATCOR

Date Prepared. 06/15/2011

Date Analyzed: 06/15/2011

Lab Batch ID: 860049

Sample: 860049-1-BKS

Batch #1

Matrix: Solid

Units: mg/kg	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
Chlonde	<0 420	10 0	811	81	100	8 19	82	1	75-125	20	<u> </u>

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: Hobbs SWD- Key



Work Order #: 419668

Lab Batch #: 859872 Date Analyzed: 06/13/2011

Project ID: A4117046

Date Prepared: 06/13/2011

Analyst: LATCOR

QC- Sample ID: 419517-008 S Batch #: Matrix: Soil

Reporting Units. mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300	Parent Spiked Sample Control Sample Spike Result %R Limits Fl. Result Added [C] [D] %R	lag								
Analytes	[A] B]									

Lab Batch # 859946

Chloride

Date Analyzed: 06/14/2011

Date Prepared: 06/14/2011

318

257

533

Analyst: LATCOR

75-125

QC- Sample ID: 419668-017 S

Batch #: 1

Matrix: Soil

84

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY								
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag			
Chlonde	36 3	104	128	88	75-125				

Lab Batch #: 860049

Date Analyzed: 06/15/2011

Date Prepared. 06/15/2011

Analyst; LATCOR

QC-Sample 1D: 419668-037 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg MATRIX / MATRIX SPIKE RECOVERY							
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	40 7	103	131	88	75-125		

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference [E] = 200*(C-A)/(C-B) All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Hobbs SWD-Key

Work Order #: 419668

Lab Batch #: 859872

Project ID: A4117046

Date Prepared: 06/13/2011 Analyst:LATCOR

Date Analyzed, 06/13/2011 18 53 QC-Sample ID: 419517-008 D

Batch #: 1

Matrix: Soil

Reporting Linits: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY

Keporting Omis, ingag	J SAMIL DE	SAME DE L'OAME DE DOI BIONTE RECOVERT							
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte	100	[B]							
Chloride	318	298	6	20					

Lab Batch #: 859946

Date Analyzed: 06/14/2011 06 52

Date Prepared: 06/14/2011

Analyst: LATCOR

QC- Sample ID: 419668-017 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY	
Anions by E300	Parent Sample Sample Control Result Duplicate RPD Limits Flag [A] Result %RPD	
Analyte	IBI	-

Lab Batch #: 860049

Chloride

Date Analyzed: 06/15/2011 14 40

Date Prepared: 06/15/2011

363

Analyst: LATCOR

QC- Sample ID: 419668-037 D

Batch #:

Matrix: Soil

29 6

Reporting Units: mg/kg	SAMPLE	SAMPLE SAMPLE DUPLICATE RECOVERY							
Anions by E300	Parent Sample Result A	Dupheate Result	RPD	Control Limits %RPD	Flag				
Analyte		[B]							
Chloride	40 7	36 3	11	20					

Lab Batch #: 859845

Date Analyzed: 06/13/2011 17 00 QC-Sample ID: 419668-001 D

Date Prepared: 06/13/2011-

Analyst: BEV

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE/SAMPLE DUPLICATE RECOVERY							
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Percent Moisture	10 3	10 6	3	20					
refeent Moisture	10.3	100	<u> </u>	20					



Sample Duplicate Recovery



Project Name: Hobbs SWD-Key

Work Order #: 419668

Lab Batch #: 859846 Project ID: A4117046

 Date Analyzed:
 06/13/2011 17 00
 Date Prepared:
 06/13/2011
 Analyst:
 BEV

 QC- Sample ID:
 419668-021 D
 Batch #:
 I
 Matrix:
 Soil

Reporting Units: %	SAMPLE/SAMPLE DUPLICATE RECOVERY								
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Percent Moisture	12 9	13 3	3	20					

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CHAIN OF CUSTODY RECORD

ENVIRONMENTAL, GEOT	ECHNICAL AND CONSTRUCTION MA	TERIALS SERVICES	CHAIN OF CUSTODY RECORD
TECCON Consulting Engineers & Scientists Office Location Midland X Project Manager Runch Bot Po	boratory:	ANALYSIS REQUESTED	Lab use only Due Date Temp of coolers when received (C*) 1 2 3 4 5 Page
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022 5 19-11 1130 X 7MW3	8-10		
073 5 1-9-11 1130 X TMW3	20-22		
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027 5 1-4-11 1131 X Trus	60-62	X	
028 5 6-971 1600 X MW3	0-2	X	
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Matrix WW - Wastewater W - Water S - Container VOA - 40 ml vial A/G - Amber / Or G		- Charcoal tube SL - studge O - Oil /O - Plastic or other	
Houston Office Dallas Office 11555 Clay Road, Suite 100 8901 Carpente Houston, Texas 77043 Dallas, Texas 7	Fort Worth Office of Preeway State 100 2601 Gravel Drive	Austin Office 5307 Industrial Oaks Blyd Austin, Texas 78735	Midland, Texas 79703

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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Title. Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date No. 01, 5/27/2010

Effective Date 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

4.		jii 7 140	110				- •		
Client 1() 6((6									
	// 30								
Lab ID #: 4/9/6/	o8								
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			Sa	ample Receipt Ch	ecki	ist 			
1. Samples on ice?					Ĭ	Blue	Water	No	
2. Shipping container in	good condi	tion?				(Yes)	No	None	
3. Custody seals intact	on shipping	container	(co	oler) and bottles?		Yes	No	NA >	
4. Chain of Custody pre	sent?	····				(Yes	No		
5. Sample instructions	complete on	chain of	cust	ody?		Yes	No	<u> </u>	
6. Any missing / extra s	amples?					Yes	(No)		····
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8. Chain of custody agr	ees with sar	nple label	(s)?			(Yes)	No		
9. Container labels legi						(Yes)	No		
10. Sample matrix / pro			in c	if custody?		Yes)	No		
11. Samples in proper	container / b	ottle?				(Yes)	No		
12. Samples property p	reserved?					(Yes)	No	N/A	
13. Sample container in	ntact?					(Yes)	No		
14. Sufficient sample a		dicated te	st(s)?		(Yes)	No		
15. All samples receive	d within suf	Ticient hol	ld ti	me?		(es)	No	1	
16. Subcontract of sam	iple(s)?					Yes	No	WA)	
17. VOC sample have a	ero head sp	ace?				Yes	No	(N/A)	
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 \Box Client understands and would like to proceed with analysis



LIMITED SITE INVESTIGATION

Trucker's #2 Brine Station West Broadway Place Hobbs NM

Terracon Project No. A4117046 June 22, 2011

Prepared for:

Key Energy Services Inc. 6 Desta Drive, Ste 4300 Midland TX 79705

Prepared by:

TERRACON Midland Texas



June 22, 2011

Key Energy Services Inc. 6 Desta Drive, Ste. 4300 Midland TX 79705 Attn: Daniel Gibson

Telephone: (432) 571-7536 Fax: (432) 571-7173

Re: Limited Site Investigation
Trucker's #2 Brine Station

West Broadway Place, Hobbs NM Terracon Project No. A4117046

Dear Daniel Gibson:

Terracon is pleased to submit three copies of the Limited Site Investigation (LSI) report for the above referenced site. This investigation was performed in accordance with Terracon's Proposal Number PA4110073 dated May 5, 2011.

The investigation-derived waste materials are currently staged on-site. Upon your request, Terracon will provide a proposal for characterization and disposal of these materials.

We appreciate the opportunity to perform these services for Key Energy Services, Inc. Please contact either of the undersigned at (432) 684-9600 if you have questions regarding the information provided in the report.

Sincerely,

Jerracon

Prepared by:

Wesley Ty Burrow

Staff Geologist

Reviewed by:

Barrett W. Bole Senior Associate

п

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Terracon

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Appendix D:	Laboratory Data Sheets									

LIMITED SITE INVESTIGATION

Trucker's #2 Brine Station West Broadway Place Hobbs NM

Terracon Project No. A4117046 June 22, 2011

1.0 INTRODUCTION

1.1 Site Description

Site Name	Trucker's #2 Brine Station
Site Location/Address	West Broadway Place, Hobbs NM
General Site Description	Former brine station facility

A topographic map is included as Figure 1, and a site plan is included as Figure 2 of Appendix A.

1.2 Scope of Work

Terracon conducted a Limited Site Investigation (LSI) at the Trucker's #2 Brine Station, West Broadway Place, Hobbs NM. At your request, Terracon installed one- 2-inch monitoring well and advanced three soil borings (completed as temporary groundwater sampling points). Upon completion of drilling operations, soil and groundwater samples were submitted for analysis.

The objective of the LSI was to evaluate the presence of chlorides in the on-site soils and groundwater (above relevant laboratory reporting limits) as a result of potential release from on-site brine sales activities. Terracon's LSI was conducted in accordance with Terracon's proposal dated May 11, 2011 as authorized by Daniel Gibson P.G., Corporate Environmental Director, Key Energy Services, Inc. on May 20, 2011.

1.3 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory

Trucker's #2 Brine Station Project Number: A4117046

June 22, 2011

agencies or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-97.

1.4 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

2.0 FIELD ACTIVITIES

2.1 Borings and Monitoring Wells

Terracon's field activities were conducted from June 8, 2011 to June 10, 2011 by Wesley Ty Burrow, a Terracon Staff Geologist. As part of the approved scope of work, one permanent groundwater monitoring well (MW-3) and three soil borings completed as temporary groundwater sampling points (TMW-1, TMW-2, TMW-3) were advanced on site. MW-3 was installed to the northeast of the former brine pit. TMW-1 was advanced to the west of the former brine pit, TMW-2 was installed in the center of the former brine pit. TMW-3 was installed to the southeast of the former brine pit.

Figure 1 presents the general boundaries and topography of the site on portions of the USGS topographic quadrangle map of Hobbs NM (Appendix A). Figure 2 is a site plan that indicates the approximate locations of the soil borings and monitoring wells in relation to the pertinent structures and general site boundaries (Appendix A).

Drilling services were performed by Straub Drilling using a truck-mounted air rotary drilling rig (Versa-Drill) under the supervision of a Terracon Staff Geologist. Soil samples were collected using core barrel sampler. Drilling equipment was decontaminated using a high pressure washer prior to beginning the project and between each soil boring. Sampling equipment was cleaned using an

Alconox® wash and potable water prior to the beginning of the project and before collecting each soil sample.

Soil samples were collected continuously in the upper 10 feet and at 10- foot increments thereafter, while observed to document soil lithology, color, moisture content and sensory evidence of impairment.

The general soil lithology encountered during sample collection consisted of the following:

- Calcareous fine-grained silty sand 0 to 50-60 feet bgs.
- Fine-grained silty sand 50-60 feet bgs to terminus of borings at depths of 65 to 80 feet bgs.

Detailed lithologic descriptions are presented on the soil boring logs included in Appendix B.

Groundwater was encountered during installation of temporary groundwater sampling points TMW-1, TMW-2, TMW-3, and monitoring well MW-3 at depths of approximately 68.0 feet bgs, 58.0 feet bgs, 67.0 feet bgs, and 68.0 feet bgs, respectively.

Subsequent to advancement, temporary groundwater sampling points TMW-1, TMW-2, TMW-3 were completed as temporary monitoring wells. MW-3 was completed as flush-mounted groundwater monitoring well. The monitoring well and the temporary monitoring wells were completed using the following methodology:

- Installation of 20 feet of 2-inch diameter, 0.010-inch machine slotted PVC well screen with a threaded bottom cap;
- Installation of 58 feet of 2-inch diameter, threaded, flush joint PVC riser pipe to the surface;
- Addition of a pre-sieved [20/40-grade annular silica sand pack] from the bottom of the boring to approximately 2 feet above the top of the well screen;
- Addition of hydrated bentonite seal above the sand pack filter zone;
- Addition of a Portland cement to the near surface;
- Installation of an 8-inch diameter, circular, bolt-down, steel, monitoring well cover with locking well cap inset in a flush-mount, concrete well pad (permanent monitoring well only).

Monitoring well construction details are presented on the soil boring logs for these monitoring wells and are included in Appendix B.

Trucker's #2 Brine Station Project Number: A4117046

June 22, 2011

The monitoring wells were developed by surging and removing groundwater with a ProActiv submersible pump until the groundwater was relatively free of fine-grained sediment. The submersible pump was decontaminated with Alconox® wash and potable water before/after each well was purged. Approximately 5 gallons of groundwater were removed from each of the temporary groundwater sampling points TMW-1, TMW-2, and TMW-3. Approximately 8 gallons of groundwater was removed from monitoring well MW-3 during development activities. Following sampling, TMW-1, TMW-2, TMW-3 were removed and backfilled with hydrated bentonite pellets and Portland cement to near surface grade.

Soil generated during drilling was stored on site with existing stockpiles, as instructed by client. Groundwater and equipment cleaning water generated during the field activities were placed in Department of Transportation (DOT) approved, 55-gallon steel drums, closed and appropriately labeled with project-specific information and initial accumulation date. A total of two 55-gallon drums containing groundwater/ and decontamination water were generated during these field services and were left onsite for subsequent characterization and disposal.

2.2 Soil and Groundwater Sampling

Terracon's soil sampling program involved submitting up to 12 soil samples from each soil boring for laboratory analysis. Soil samples were collected continuously in upper 10 feet and at 10 foot intervals thereafter. Soil sample intervals for each boring are presented with the soil sample analytical results (Table 1) and are provided on the lithologic boring logs included in Appendix B.

One groundwater sample was collected and analyzed from each of two existing monitoring wells MW-1 and MW-2, newly installed monitoring well MW-3, and from temporary groundwater sampling points TMW-1, TMW-2, and TMW-3. Prior to sample collection, each monitoring well was purged of a minimum of three well casing volumes of groundwater. Subsequent to sufficient recharge, one groundwater sample was collected from each monitoring well utilizing a new ProActiv submersible pump. The submersible pump was decontaminated with Alconox® wash and potable water before/after each sample was collected.

Soil and groundwater samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to Xenco analytical laboratory in Odessa, Texas for standard turnaround analysis.

Trucker's #2 Brine Station Project Number: A4117046

June 22, 2011

3.0 LABORATORY ANALYTICAL METHODS

The soil and/ or groundwater samples collected from existing monitoring wells MW-1 and MW-2, temporary groundwater sampling points TMW-1, TMW-2, TMW-3, and newly installed monitoring well MW-3 were analyzed for chlorides using EPA method 300.1.

Laboratory results are summarized in the tables included in Appendix C. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

4.0 DATA EVALUATION

4.1 Soil Samples

The soil samples collected from the soil borings converted to MW-3 and temporary groundwater sampling points TMW-1, TMW-2, and TMW-3 displayed elevated chloride readings in shallow soils with decreasing concentrations with depth. Chloride concentrations decreased below 300 milligrams per kilogram (mg/Kg) between 22 and 30 fbgs (TMW-1), between 10 and 20 fbgs (TMW-2, TMW-3), and between 32 and 40 fbgs (MW-3).

4.2 Groundwater Samples

The groundwater samples yielded chloride concentrations ranging from 194 milligrams per liter (mg/L) to 1,790 mg/L. The groundwater sample with the most elevated concentration of 1,790 mg/L was collected from TMW-3. The groundwater sample from MW-1 (within 30 feet SE of TMW-3) exhibited a chloride concentration of 194 mg/L. Based on results from MW-1, it is likely that shallow soils with elevated chloride concentrations may have fallen from the boring sidewall during installation of the temporary monitoring well. This impacted soil would cause the elevated concentration. With the exception of TMW-3, the most elevated chloride concentration in groundwater collected was 919 mg/L from MW-2, which is hydraulically up gradient of the former brine pit on the northwest corner of the site. Remaining concentrations were 422 mg/L (MW-3), 452 mg/L (TMW-1), and 733 mg/L (TMW-2).

Trucker's #2 Brine Station Project Number: A4117046 June 22, 2011 Terracon

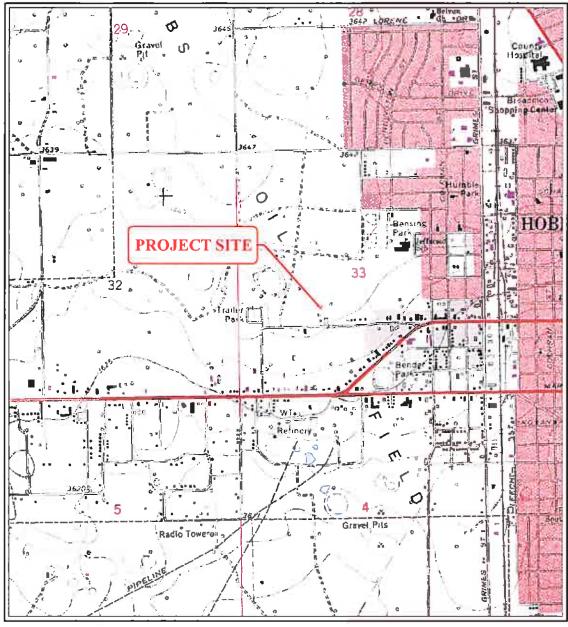
5.0 FINDINGS AND RECOMMENDATIONS

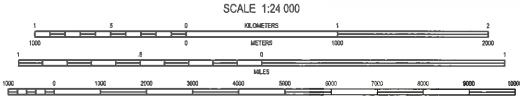
- Based on the analytical results, the on-site shallow soils in the vicinity of newly installed MW-3 and temporary groundwater sampling points TMW-1, TMW-2, and TMW-3 displayed elevated chloride readings. However, chloride concentrations in soil decreased with depth.
- Based on the analytical results, the on-site groundwater displayed elevated chloride readings, ranging from 194 mg/L to 919 mg/L (excluding data from TMW-3).
- The most elevated chloride concentration was identified in groundwater sampled from MW-2, up gradient of former site operations.

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Groundwater Gradient Map for June 10, 2011

UNITED STATES - DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY





CONTOUR INTERVAL FEET FEET NATIONAL GEODETIC YERTICAL DATUM OF 1929

HOBBS WEST, N. MEX.
PHOTOREVISED 1979
7.5 MINUTE SERIES (TOPOGRAPHIC)

Project Mingri	WB	Project No A4117046
Drawn By:	RF	Scale; AS SHOWN
Checked By:	WB	File No A4117046
Approved By:	ВВ	Date: 06/21/2011

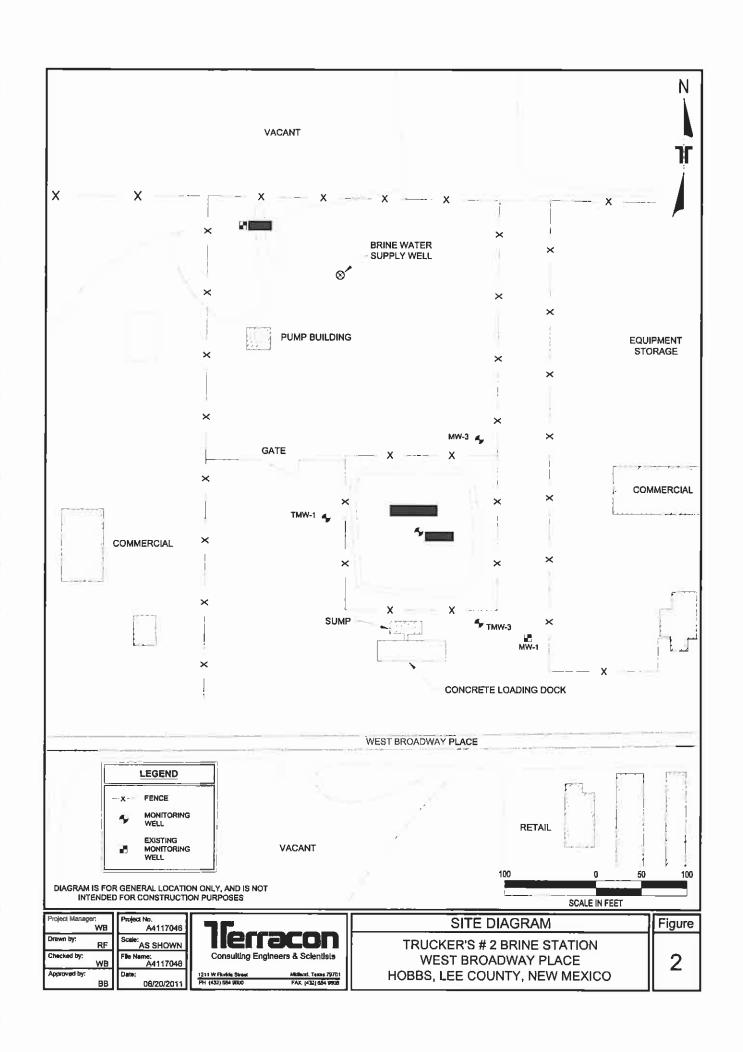


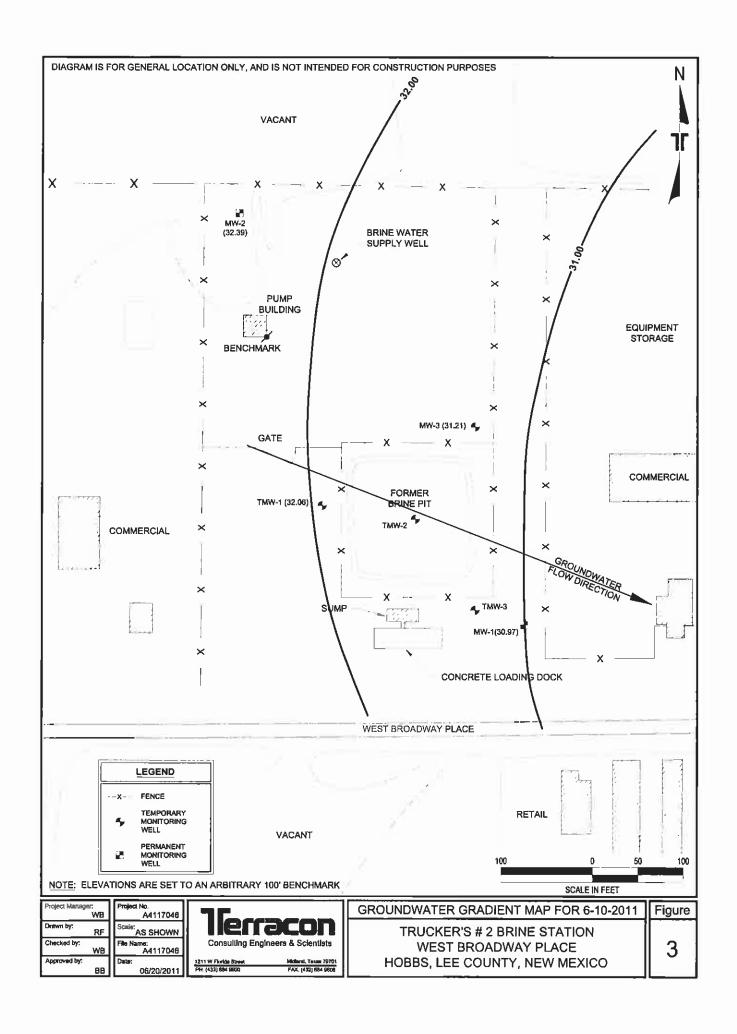
TOPOGRAPHIC QUADRANGLE MAP

TRUCKER'S # 2 BRINE STATION WEST BROADWAY PLACE HOBBS, LEE COUNTY, NEW MEXICO

FIG.	No.

1





APPENDIX B

Boring Logs

PROJECT: TRUCKERS #2 BRINE STATION PROJECT NUMBER: A4117046 CLIENT: Key Energy Services, Inc. BORING / WELL NUMBER: MW-3 TOTAL DEPTH: 80.0' TOP OF CASING: 3649 FIELD PERSONNEL: W. Burrow DATE DRILLIES: E. Bryan CASING: Dlam. 2' Length 20' Slot Size 0.01 CASING: Dlam. 2' Length 58' Type PVC TORUS BORNO DATE DRILLED: 6-9-11 PAGE OLD TORUS BURRON DATE DRILLED: 6-9-11 PAGE CALCAREOUS SILTY SAND, tan, fine, dry, medium dense, weakly cemented 10.0 10.0 10.0 10.0	
DRILLING METHOD: Air Rotray	
BORING / WELL NUMBER: MW-3 BORE HOLE DIAMETER: 6" TOTAL DEPTH: 80.0" TOP OF CASING: 3649 FIELD PERSONNEL: W. Burrow DATE DRILLED: 6-9-11 PAGE O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
TOTAL DEPTH: 80.0' SCREEN: Diam. 2' Length 20' Stot Size 0.00	
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							DRILLING METHOD: Air Rotray		
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CLIENT: Key Energy Services, In	nc.		DRILLING METHOD: Air Rotray	
BORING / WELL NUMBER: TMW	<u>'-1</u>		BORE HOLE DIAMETER: _6*	
TOTAL DEPTH: <u>75.0'</u>			SCREEN; Diam. 2" Length15' Slot Size	0.010"
TOP OF CASING: 3643			CASING: Dlam2" Length60' Type	PVC
FIELD PERSONNEL: W. Burrow			DATE DRILLED: <u>6-8-11</u>	
				PAGE 1 of 2
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		UMBER: <u>A41</u>					DRILLER: E. Bryan		
							DRILLING METHOD: Air Rotray		_
							BORE HOLE DIAMETER: 6"		_
					_		SCREEN: Diam. 2" Length 15' Slot Size 0.0		—
		SING: 3643					CASING: Diam. 2" Length 60' Type PV(<u> </u>	—
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Cultin: Key Energy Services. Inc. BORINO; WELL NUMBER: TMM/S BORINO; WELL NUMBER: TMM/S Sixt Size 0.010**								
BORNIN WILL NUMBER TMW-3 BORE HOLE DIAMETER B*							•	
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PROJECT	: TRUCKERS	#2 BRIN	•			DRILLING COMPANY: Straub		·
	NUMBER: A41					DRILLER: E. Bryan		_
	Key Energy Ser					DRILLING METHOD: Air Rotray		
BORING /	WELL NUMBER:	_TMW						
TOTAL DE	ЕРТН: <u>75.0'</u>					SCREEN: Diam. 2" Length 15' Slot Size 0.0)10"	
TOP OF C	ASING: <u>3650</u>		_			CASING: Diam. 2" Length 60' Type PV	<u> </u>	
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APPENDIX C

Tables

Table 1

CONCENTRATIONS OF CHLORIDES IN SOIL

Key Energy Services, Inc. Trucker's #2 Brine Station Lea County, NM **Terracon Project Number A4117046**

All concentrations are in mg/ kg

			EPA Method
SAMPLE LOCATION	SAMPLE DATE	SAMPLE INTERVAL	300.1
			Total Chlorides
TMW-1	06/08/11	0-5 fbgs	2,770
TMW-1	06/08/11	5-7 fbgs	2,110
TMW-1	06/08/11	8-10 fbgs	1,650
TMW-1	06/08/11	20-22 fbgs	541
TMW-1	06/08/11	30-32 fbgs	194
TMW-1	06/08/11	40-42 fbgs	83.5
TMW-1	06/08/11	50-52 fbgs	67.1
TMW-1	06/08/11	60-62 fbgs	18.0
TMW-2	06/08/11	0-2 fbgs	5,130
TMW-2	06/08/11	2-4 fbgs	6,180
TMW-2	06/08/11	4-6 fbgs	4,780
TMW-2	06/08/11	6-8 fbgs	5,580
TMW-2	06/08/11	8-10 fbgs	3,340
TMW-2	06/08/11	20-22 fbgs	27.7
TMW-2	06/08/11	30-32 fbgs	50.5
TMW-2	06/08/11	40-42 fbgs	72.1
TMW-2	06/08/11	50-52 fbgs	36.3
TMW-3	06/09/11	0-2 fbgs	3,170
TMW-3	06/09/11	2-4 fbgs	3,370
TMW-3	06/09/11	4-6 fbgs	2,710
TMW-3	06/09/11	6-8 fbgs	1,890
TMW-3	06/09/11	8-10 fbgs	1,250
TMW-3	06/09/11	20-22 fbgs	127
TMW-3	06/09/11	30-32 fbgs	146
TMW-3	06/09/11	40-42 fbgs	64.5
TMW-3	06/09/11	50-52 fbgs	45.9
TMW-3	06/09/11	60-62 fbgs	72.3
MW-3	06/09/11	0-2 fbgs	555
MW-3	06/09/11	2-4 fbgs	1,530
MW-3	06/09/11	4-6 fbqs	1,610
MW-3	06/09/11	6-8 fbgs	1,200
MW-3	06/09/11	8-10 fbgs	847
MW-3	06/09/11	20-22 fbgs	811
MW-3	06/09/11	30-32 fbgs	645
MW-3	06/09/11	40-42 fbgs	145
MW-3	06/09/11	50-52 fbgs	130
MW-3	06/09/11	60-62 fbgs	40.7
1414 4-0	00/03/11	00-02 ibgs	TV.!

fbgs = feet below ground surface
TMW-2 was advanced beginning 10 fbgs, making the sample interval effectively 10 feet deeper than documented on laboratory identification information.

Table 2

CONCENTRATIONS OF CHLORIDES IN GROUNDWATER

Key Energy Services, Inc. Trucker's #2 Brine Station Lea County, NM Terracon Project Number A4117046

All concentrations are in mg/ L

SAMPLE LOCATION	SAMPLE DATE	Top of Casing Elevation *	GROUNDWATER DEPTH (in feet below top-of- casing)	Groundwater Elevation	EPA Method 300.1 Total Chlorides
MW-1	06/10/11	97.71	66.74	30.97	194
MW-2	06/10/11	99.09	66.70	32.39	919
MW-3	06/10/11	97.86	66.65	31.21	422
TMW-1	06/10/11	99.52	67.46	32.06	452
TMW-2	06/10/11	not measured	57.35	not measured	733
TMW-3	06/10/11	not measured	66.92	not measured	1,790

NOTES:

fbgs = feet below ground surface
locations surveyed in relation to an onsite benchmark with an assigne d elevation of 100.00 feet

APPENDIX D

Laboratory Data Sheets

Analytical Report 419675

for

Terracon Consultants, Inc.- Midland

Project Manager: Barrett Bole
Hobbs SWD- Key

A4117046

14-JUN-11

Collected By: Client



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12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALII), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917) North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)





14-JUN-11

Project Manager: Barrett Bole
Terracon Consultants, Inc.- Midland
1211 W. Florida Avenue
Midland, TX 79701

Reference: XENCO Report No: 419675

Hobbs SWD- Key Project Address:

Barrett Bole:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 419675. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 419675 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 419675



Terracon Consultants, Inc.- Midland, Midland, TX Hobbs SWD- Key

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW3	W	Jun-10-11 09:30		419675-001
MW2	W	Jun-10-11 10:00		419675-002
MW1	W	Jun-10-11 10:30		419675-003
TMW3	W	Jun-10-11 11:00		419675-004
TMW1	W	Jun-10-11 11:30		419675-005
TMW2	W	Jun-10-11 12:00		419675-006

CASE NARRATIVE



Client Name: Terracon Consultants, Inc.- Midland

Project Name: Hobbs SWD- Key



Project ID:

A4117046

Work Order Number: 419675

Report Date: 14-JUN-11 Date Received: 06/13/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Contact: Barrett Bole Project Id: A4117046

Project Location:

Certificate of Analysis Summary 419675

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am Report Date: 14-JUN-11

Project Manager: Brent Ватгоп, II

	Lab Id:	419675-001	419675-002	419675-003	419675-004	419675-005	419675-006
Austria Donner	Field Id:	MW3	MW2	MWI	TMW3	TMWI	TMWZ
Thursday Neguesieu	Depth:						
	Matrix	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Jun-10-11 09:30	Jun-10-11 10:00	Jun-10-11 10:30	Jun-10-11 11:00	Jun-10-11 11:30	Jun-10-11 12:00
Anions by E300	Extracted:	; : :		1			
	Analyzed:	Jun-13-11 14:06	Jun-13-11 14:28	Jun-13-11 14:50	Jun-13-11 15:12	Jun-13-11 15:34	Jun-13-11 15:56
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride		422 12.5	919 25.0	194 10.0 1790 100	1790 100	452 25.0	733 25.0

Odessa Laboratory Manager Brent Barron, II

Page 5 of 11

Houston - Dallas - San Autonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

This snalytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expersable thoughout the analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no exponsibility and makes no warranty to the end use of fite data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL and above the SQL.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

POL Practical Quantitation Limit

LOD Limit of Detection

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116
3725 E. Atlanta Ave., Phoenix, AZ 85040	(602) 437-0330	



BS / BSD Recoveries

Project Name: Hobbs SWD- Key

Date Prepared: 06/13/2011

Batch#: 1

Project ID: A4117046 **Date Analyzed:** 06/13/2011

Matrix: Water

Sample: 859870-1-BKS

Work Order #: 419675 Analyst: LATCOR Lab Batch ID: 859870

Units: mg/L		BLAN	LANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / B	LANKS	PIKE DUPL	ICATE	RECOVE	RY STUD	Ϋ́	П
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	BIK. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	<u>[C</u>	[a]	ত্র	Result F	<u>ত</u>				
Chlonde	<0.500	10.0	9.80	86	10.0	9.75	86	∴	80-120	20	

Relative Percent Difference RPD = 200*[(C-F)/(C+F)] Blank Spike Recovery [D] = 100*(CV[B] Blank Spike Duplicate Recovery [G] = 100*(F)/[E] All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: Hobbs SWD- Key



Work Order #: 419675

Lab Batch #: 859870

Date Analyzed: 06/13/2011

Date Prepared: 06/13/2011

Project ID: A4117046

Analyst: LATCOR

QC- Sample ID: 419517-001 S Batch #: 1

Matrix: Water

Reporting Units: mg/L	MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R D	Control Limits %R	Flag
Chloride	<25.0	500	533	107	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Hobbs SWD- Key

Work Order #: 419675

Lab Batch #: 859870

Project ID: A4117046

Date Prepared: 06/13/2011

Analyst: LATCOR

Date Analyzed: 06/13/2011 11:10 QC-Sample ID: 419517-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte		[6]			_
Chloride	<25.0	<25.0	0	20	

ANALYSIS REQUESTED REQUESTED REQUESTED REQUESTED Note Date: Note of coolers when received (C): E. Note Date:
(-0) (-0) (-0) (-0) (-0) (-0) (-0) (-0)
20 Containers (CPA 300)
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20 Containers 20
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× × × ×
× × ×
Date: Time: NOTES: place congil angly to be regult
Date: Time: Burch Ble W Terracon
Date: Time:
Date: Time:
C - Cherrosal Arbe SL - sludge O - Oil P/Q - Plassip or other
5 76118
(21C) 444-211-2 AR (21C) 444-1101
Time: Time:



XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

1		,			•	·		
Client: Jillaco		<u> </u>		-				
Date/Time: 6/13/1		<u>) </u>		_				
<u>Lab ID#: 4196</u>	7 <u>5 </u>			_				
Initials: 7			 	_				
		S	ample Recei	ipt Checkl	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good condi	tion?			(Yes)	No	None	
3. Custody seals intact of	n shipping	container (co	ooler) and bottle	26?	Yes	No	N/A	
4. Chain of Custody pres	ent?				Yes	No		
5. Sample instructions c	omplete on	chain of cus	tody?		Yes	No		
6. Any missing / extra sa	mples?				Yes	No		
7. Chain of custody sign	ed when rei	inquished / r	eceived?		Yes	No		
8. Chain of custody agre	es with san	rple label(s)?	·		(Yes)	No		
9. Container labels legib	le and intac	1?	····		(Yes)	No		
10. Sample matrix / prop	erties agree	with chain o	of custody?		Yes	No .		
11. Samples in proper co	ontainer / bo	ttie?			Yes	No		
12 Samples property pr	eserved?				(Yes)	No	N/A	
13. Sample container int	act?				Yes	No		
14. Sufficient sample an	ount for Inc	licated test(s	:)?	•	Yes	No		
15. All samples received	within suff	icient hold ti	me?		Yes	No		
16. Subcontract of same	de(s)?				Yes	No	(N/A)	
17. VOC sample have ze	ro head apa	ece?			Yes	No	(N/A	
18. Cooler 1 No.	Cooler 2 N	0	Cooler 3 No.		Cooler 4 No),	Cooler 5 No.	
bs 5 (°c	lbs	<u>°</u> ℃	16	s °C	lbs	°C	lbs	°C
		None	conformance	e Docume	ntation			
Contact:		Contacted by	y:			Date/Time:		
Regarding:								
Corrective Action Taker	:							
Check all that apply:	Cooling pr	ocess has be	eous shortly afi	iar esmolina	event and o	ut of tompo	eaturn	

condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Initial and Backup Temperature confirm out of temperature conditions☐ Client understands and would like to proceed with analysis

Final 1,000

Analytical Report 419668

for

Terracon Consultants, Inc.- Midland

Project Manager: Barrett Bole
Hobbs SWD- Key
A4117046
15-JUN-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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Xenco-Houston (EPA Lab code: TX00122):

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Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALII), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)





15-JUN-11

Project Manager: Barrett Bole Terracon Consultants, Inc.- Midland 1211 W. Florida Avenue Midland, TX 79701

Reference: XENCO Report No: 419668

Hobbs SWD- Key Project Address:

Barrett Bole:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 419668. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 419668 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 419668



Terracon Consultants, Inc.- Midland, Midland, TX Hobbs SWD- Key

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TMW1 0-5	S	Jun-08-11 12:00	0 - 5	419668-001
TMW1 5-7	S	Jun-08-11 12:00	5 - 7	419668-002
TMW1 8-10	S	Jun-08-11 12:00	8 - 10	419668-003
TMW1 20-22	S	Jun-08-11 12:00	20 - 22	419668-004
TMW1 30-32	S	Jun-08-11 12:00	30 - 32	419668-005
TMW1 40-42	S	Jun-08-11 12:00	40 - 42	419668-006
TMW1 50-52	S	Jun-08-11 12:00	50 - 52	419668-007
TMW1 60-62	S	Jun-08-11 12:00	60 - 62	419668-008
TMW2 0-2	S	Jun-08-11 16:00	0 - 2	419668-009
TMW2 2-4	S	Jun-08-11 16:00	2 - 4	419668-010
TMW2 4-6	S	Jun-08-11 16:00	4 - 6	419668-011
TMW2 6-8	S	Jun-08-11 16:00	6 - 8	419668-012
TMW2 8-10	S	Jun-08-11 16:00	8 - 10	419668-013
TMW2 20-22	S	Jun-08-11 16:00	20 - 22	419668-014
TMW2 30-32	S	Jun-08-11 16:00	30 - 32	419668-015
TMW2 40-42	S	Jun-08-11 16:00	40 - 42	419668-016
TMW2 50-52	S	Jun-08-11 16:00	50 - 52	419668-017
TMW3 0-2	S	Jun-09-11 11:30	0 - 2	419668-018
TMW3 2-4	S	Jun-09-11 11:30	2 - 4	419668-019
TMW3 4-6	S	Jun-09-11 11:30	4 - 6	419668-020
TMW3 6-8	S	Jun-09-11 11:30	6 - 8	419668-021
TMW3 8-10	S	Jun-09-11 11:30	8 - 10	419668-022
TMW3 20-22	S	Jun-09-11 11:30	20 - 22	419668-023
TMW3 30-32	S	Jun-09-11 11:30	30 - 32	419668-024
TMW3 40-42	S	Jun-09-11 11:30	40 - 42	419668-025
TMW3 50-52	S	Jun-09-11 11:30	50 - 52	419668-026
TMW3 60-62	S	Jun-09-11 11:30	60 - 62	419668-027
MW3 0-2	S	Jun-09-11 16:00	0 - 2	419668-028
MW3 2-4	S	Jun-09-11 16:00	2 - 4	419668-029
MW3 4-6	S	Jun-09-11 16:00	4 - 6	419668-030
MW3 6-8	S	Jun-09-11 16:00	6 - 8	419668-031
MW3 8-10	S	Jun-09-11 16:00	8 - 10	419668-032
MW3 20-22	S	Jun-09-11 16:00	20 - 22	419668-033
MW3 30-32	S	Jun-09-11 16:00	30 - 32	419668-034
MW3 40-42	S	Jun-09-11 16:00	40 - 42	419668-035
MW3 50-52	S	Jun-09-11 16:00	50 - 52	419668-036
MW3 60-62	S	Jun-09-11 16:00	60 - 62	419668-037

CASE NARRATIVE



Client Name: Terracon Consultants, Inc.- Midland

Project Name: Hobbs SWD- Key



Project ID:

A4117046

Work Order Number: 419668

Report Date: 15-JUN-11 Date Received: 06/13/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Project Id: A4117046 Contact: Barrett Bole

Project Location:

Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Report Date: 15-JUN-11 Project Manager: Brent Barron, II

	Lab Id:	419668-001	419668-002	419668-003	419668-004	419668-005	419668-006
A rentricio Danierosta	Field Id:	TMW1 0-5	TMW1 5-7	TMW1 8-10	TMW1 20-22	TMWI 30-32	TMW1 40-42
Amulysis Acquesieu	Depth:	0-5	5-7	8-10	20-22	30-32	40-42
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-08-11 12:00	Jun-08-11 12:00	Jun-08-11 12:00	Jun-08-11 12:00	Jun-08-11 12:00	Jun-08-11 12:00
Anions by E300	Extracted:) 			+	
	Analyzed:	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53
	Units/RL:	mg/kg RL					
Chloride		2770 46.8	2110 50.3	1650 49.0	541 9.27	194 9.09	
Percent Moisture	Extracted:						
	Analyzed:	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00
	Units/RL:	% RL					
Percent Moisture		10.3 1.00	16.5 1.00	14.2 1.00	9,41 1.00	7.57 1.00	6.19 1.00

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Brent Barron, II
Odessa Laboratory Manager



Contact; Barrett Bole Project Id: A4117046

Project Location:

Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Project Manager: Brent Barron, II

Report Date: 15-JUN-11

	Lab Id:	419668-007	419668-008	419668-009	419668-010	419668-011	419668-012
Americ Donnoctor	Field Id:	TMWI 50-52	TMW1 60-62	TMW2 0-2	TMW2 2-4	TMW2 4-6	TMW2 6-8
Amarysis wednessea	Depth:	50-52	60-62	0-2	2-4	4-6	8-9
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-08-11 12:00	Jun-08-11 12:00	Jun-08-11 16:00	Jun-08-11 16:00	Jun-08-11 16:00	Jun-08-11 16:00
Anions by E300	Extracted:						
	Analyzed:	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53	Jun-13-11 18:53
	Units/RL:	mg/kg RL	ıng/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg R1
Chloride			18.0 4.35	5130 184	6180 185	4780 181	5580 183
Percent Moisture	Extracted:						
	Analyzed:	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00
	Units/RL:	% RL					
Percent Moisture		5.25 1.00	3.48 1.00	8.93 1.00	9.04 1.00	7.25 1.00	7.95 1.00

Odessa Laboratory Manager Brent Barron, II

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Project Id: A4117046 Contact: Barrett Bole

Project Location:

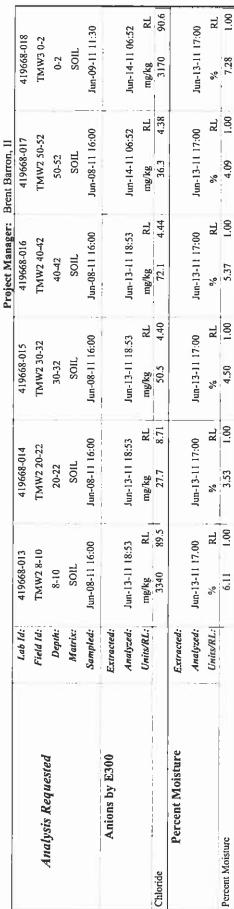
Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Report Date: 15-JUN-11



Brent Barron, II
Odessa Laboratory Manager

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Project Id: A4117046 Contact: Barrett Bole

Project Location:

Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Report Date: 15-JUN-11

Analysis Requested							
	Lab Id:	419668-019	419668-020	419668-021	419668-022	419668-023	419668-024
Thursday they wester	Field Id:	TMW3 2-4	TMW3 4-6	TMW3 6-8	TMW3 8-10	TMW3 20-22	TMW3 30-32
	Depth:	2-4	4-6	8-9	8-10	20-22	30-32
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
S	Sampled:	Jun-09-11 11:30	Jun-09-11 11:30	Jun-09-11 11:30	Jun-09-11 11:30	Jun-09-11 11:30	Jun-09-11 11:30
Anions by E300 Ex	Extracted:	1			1		
¥	Analyzed:	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52
a	Units/RL:	mg/kg	ıng/kg RL	mg/kg RL	mg/kg RL	mg/kg R1	mg/kg RL
Chloride	-	3370 90.4	2710 48.1	1890 48.2	1250 49.2	127 8.93	146 9.09
Percent Moisture Ex	Extracted:						
¥	Analyzed:	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00
0	Units/RL:	% RL					
Percent Moisture		7.05 1.00	12.7 1.00	12.9 1.00	14 6 1.00	5.90 1.00	7.61 1.00

Breit Barron, II Odessa Laboratory Manager

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Contact: Barrett Bole Project Id: A4117046

Project Location:

Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Project Manager: Brent Barron, II Report Date: 15-JUN-11

					The state of the s	THE WATER CARS, LA	
	Lab Id:	419668-025	419668-026	419668-027	419668-028	419668-029	419668-030
Annivois Dannachad	Field Id:	TMW3 40-42	TMW3 50-52	TMW3 60-62	MW3 0-2	MW3 2-4	MW3 4-6
naicanhau ciclimut	Depth:	40-42	50-52	60-62	0-2	2.4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-09-11 11:30	Jun-09-11 11:30	Jun-09-11 11:30	Jun-09-11 16:00	Jun-09-11 16:00	Jun-09-11 16:00
Anions by E300	Extracted:						
	Analyzed:	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52	Jun-14-11 06:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		64.5 4.34	45.9 4.40	72.3 4.39	555 17.7	1530 47.2	1610 47.5
Percent Moisture	Extracted:						
	Analyzed:	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00	Jun-13-11 17:00
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.23 1.00	4.64 1.00	4.23 1.00	5.04 1.00	11.1 1.00	11.5

Odessa Laboratory Manager Brent Barron, II

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Project Id: A4117046 Contact: Barrett Bole

Project Location:

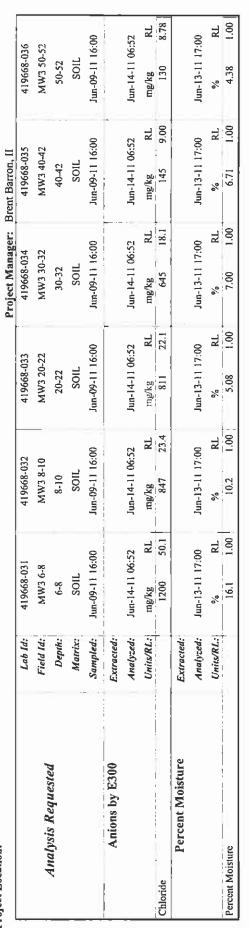
Certificate of Analysis Summary 419668

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Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Report Date: 15-JUN-11



Brent Barron, II Odessa Laboratory Manager

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Project Id: A4117046 Contact: Barrett Bole

Project Location:

Certificate of Analysis Summary 419668

Terracon Consultants, Inc.- Midland, Midland, TX

Project Name: Hobbs SWD- Key

Date Received in Lab: Mon Jun-13-11 11:30 am

Report Date: 15-JUN-11 Project Manager: Brent Barron, II

	Lab Id;	419668-037	
According Danie acted	Field Id:	MW3 60-62	
Umarysis Weywesten	Depth:	60-62	
	Matrix:	ZIOS	_
	Sampled:	Jun-09-11 16:00	
Anions by E300	Extracted:		
	Analyzed:	Jun-15-11 14:27	
	Units/RL:	mg/kg RL	
Chloride		40.7 4.33	-
Percent Moisture	Extracted:		1
	Analyzed:	Jun-13-11 17:00	
	Units/RL:		
Percent Moisture	4-	3.02 1.00	

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Brent Barron, II

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Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL and above the SQL.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit
- MDL Method Detection Limit
- PQL Practical Quantitation Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable
- + Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	



BS / BSD Recoveries



Project Name: Hobbs SWD- Key

Work Order #: 419668

Analyst: LATCOR

Date Prepared: 06/13/2011

Batch #: 1

Project ID: A4117046 Date Analyzed: 06/13/2011 Matrix: Solid

Sample: 859872-1-BKS Lab Batch ID: 859872

Units: mg/kg		BLAN	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE/B	LANKS	PIKE DUPL	CATE F	ECOVE	RY STUD	Y	
Anions by E300	Blank Sample Result A	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R IDI	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD	Control Limits	Control Limits %RPD	Flag
Chloride	<0.420	10.0	99.6	26	10.0	10.6	106	6	75-125	20	
Amoleust. I ATCOR	i a	ate Prepar	Date Prepared: 06/14/201	_			Date Ar	Date Analyzed: 06/14/201	6/14/2011		

Analyst: LATCOR

Lab Batch ID: 859946

Batch #: 1 Sample: 859946-1-BKS

Date Prepared: 06/14/2011

Matrix: Solid

Units: mg/kg		BLAN	SLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE/B	LANKS	PIKE DUPL	ICATE F	RCOVE	RY STUD	Y	
Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	BIK. Spk Dup. %R [G]	RPD %	Control Limits	Control Limits %RPD	Flag
Chloride	<0.420	10.0	9.45	95	10.0	9.33	93	-	75-125	20	

Date Prepared: 06/15/2011

Batch #: 1

Sample: 860049-1-BKS

Analyst: LATCOR

Lab Batch 1D: 860049

Matrix: Solid

Date Analyzed: 06/15/2011

Units: mg/kg		BLAN	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	PIKE / B	LANKS	PIKE DUPL	ICATE F	RECOVE	RY STUD	, 	
Anions by E300	Blank Sample Result (A)	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	BIK. Spk Dup. %R	RPD %	Control Limits	Control Limits %RPD	Flag
Analytes		[8]	[C]	lat	[E]	Result [F]	i 5				
Chloride	<0.420	10.0	8.11	81	10.0	8.19	82	1	75-125	20	

Relative Percent Difference RPD = 200*[(C-F)/(C+F)]
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Final 1,000



Form 3 - MS Recoveries

Project Name: Hobbs SWD- Key



Work Order #: 419668

Lab Batch #: 859872

Date Analyzed: 06/13/2011

Date Prepared: 06/13/2011

Project ID: A4117046

Analyst: LATCOR

QC- Sample ID: 419517-008 S

Batch #:

Matrix: Soil

١	Reporting Units: mg/kg	MATE	CIX / MA	TRIX SPIKE	RECO	VERYSIU	DY
	Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
1	Analytes	[6]	[B]				
	Chloride	318	257	533	84	75-125	

Lab Batch #: 859946

Date Analyzed: 06/14/2011

Date Prepared: 06/14/2011

Analyst: LATCOR

QC-Sample ID: 419668-017 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATE	RIX / MA	TRIX SPIKE	RECOV	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R D]	Control Limits %R	Flag
Chloride	36.3	104	128	88	75-125	

Lab Batch #: 860049

Date Analyzed: 06/15/2011

Date Prepared: 06/15/2011

Analyst: LATCOR

QC- Sample ID: 419668-037 S

Batch #:

Matrix: Soil

	Reporting Units: mg/kg	MATE	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
	Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R (D)	Control Limits %R	Flag
	, u	40.7	102	121	88	75-125	
7	Chloride	40.7	103	131	00	13-123	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference [E] = 200*(C-A)/(C+B) All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Hobbs SWD- Key

Work Order #: 419668

Lab Batch #: 859872

Project ID: A4117046

Date Analyzed: 06/13/2011 18:53

Date Prepared: 06/13/2011

Analyst: LATCOR

QC-Sample ID: 419517-008 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Chloride	318	298	6	20	

Lab Batch #: 859946

Date Analyzed: 06/14/2011 06:52

Date Prepared: 06/14/2011

Analyst: LATCOR

QC-Sample ID: 419668-017 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE/SAMPLE DUPLICATE RECOVERY

Anions by E300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [H]	RPD	Control Limits %RPD	Flag
Chloride	36.3	29.6	20	20	

Lab Batch #: 860049

Date Analyzed: 06/15/2011 14:40

Date Prepared: 06/15/2011

Analyst: LATCOR

QC-Sample ID: 419668-037 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	40.7	36.3	11	20	

Lab Batch #: 859845

Date Analyzed: 06/13/2011 17:00

Date Prepared: 06/13/2011

Analyst: BEV

QC- Sample ID: 419668-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result A	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	10.3	10.6	3	20	



Sample Duplicate Recovery



Project Name: Hobbs SWD- Key

Work Order #: 419668

Lab Batch #: 859846

Project ID: A4117046

Date Prepared: 06/13/2011

Analyst:BEV

Date Analyzed: 06/13/2011 17:00 QC- Sample ID: 419668-021 D

Batch #: 1

Matrix: Soil

nantina II-ita. 9/

#; I [Viatri

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	12.9	13.3	3	20	

L						CHAINES OF INTERNATION OF THE PRINTERS OF INVITED OF THE PRINTERS OF THE PRINT			The second secon	The state of the last of the l				
-					Lab	Laboratory:	Yenco	¢.		ANALYSIS REQUESTED	Na.			Lab use only Due Date:
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G	A4117046	46	Preject	Name I	Project Name 15 5 W B-	7	2	Maryon of Containers	ritativers 0.4	20/4				402 0.5.
Matrix	rix Date	Титв	೧೦೯೮ ೧೯೮೮	ldentify	Identifying Marks of Semple(s)	(\$)	Start Depth End Depth	VOA AG	250 PS	7				4/9/6/28 Lab Use Only)
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2005 5	11-8-1	1200	×	TAWI	ĺ	8-10				×				
2 400	11-8-9	COLI		N Ta	TAW! Z	27.02			-	×			-	
5000	11-8-9	1700	×	TARI		76-35				×				
2000	11-8-9	1200		7	TAW! 4	7h-oh			_	ΙX				
27	11-8-9	1730	4		TMW1 5	50-52			-	X				
88	1-8-9	1200	×		TMWI 6	29-09			-	X				
80 7	1-8-9	1600		F	TWM	2-0			-	X				
2010	11-8-9	=		1	7					X				
5 3	lurn around time			L 25% Russ	ď	5	II 100% Rush							
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Matrix Contag	ją	WW - Wastewater VOA - 40 ml vial	<u> </u>	W - Wate A/G - Ami	W - Water S - Soil SO - Sol A/G - Amber / Or Class 1 Liter	SO - Solid	7. Light	uid A - Air Beg - Glass wide mouth		C - Charcoal tube P/O - Plastic or other	St sludge	ē0-0		
Hour Hour	Houston Office 11555 Clay Road, Swite 100 Houston, Texas 77043 (713) 600, 8009 Feb. (713) 600,8787	ale 100	5	88 D	llas Office 1 Carpenter Fr las, Texas 7524	Dallas Office 8901 Carpenter Freeway, Suite 100 Dallas, Texas 75247		Fort Worth Office 2601 Gravel Drive Fort Worth, Texas 76118	761		Austin Office 5307 Industria Austin, Teras	Austin Office 5307 Industrial Oaks Blvd. # 160 Austin, Texas 78735	# 160	Midland Office 24 Smith Rd., # 261 Midhard, Texas 79705
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Mark: WWW - Westewater W - Wrater S - Soil	SD - Solid	L - Liquid A Air Bag 250 ml - Glass wide mouth	C - Charcoal tube P/O - Plastic or other	정	
	Dallas Office 8901 Carpenter Freeway, Suite 100 Dallas, Texas 75247		8119/	Austin Office 5307 Industrial Oais Blvd. # 160 Austin, Texas 18735 (<17) 442-1122 Fax (512) 442-1181	Midland Office 24 Smith Rd. # 261 Midland, Texas 79705 (432) 684-9600 Fax (432) 684-9608
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XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

Prelogin.	/ Nonconformance	Report - Sa	ample Log-	In
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Date/Time: 6/13/1	1 11:30								
Lab 10#: 4/96	68								
Initials:									
·		Sa	imple Red	eipt Ch	eckii	ist			
1. Samples on ice?						Blue	Water	No	
2. Shipping container I	n good condit	ion?				Yes	No	None	
3. Custody seals intact	on shipping o	container (co	oler) and bo	ttles?		Yes	No	N/A	
4. Chain of Custody pr	esent?					Yes	No		
5. Sample instructions	complete on	chain of cust	ody?			Yes	No		
6. Any missing / extra	samples?					Yes	No		
7. Chain of custody sig	ned when reli	inquished / n	ceived?		_	Yes	No		
8. Chain of custody ag						Yes	No		
9. Container labels leg					1	(Yes)	No		
10. Sample matrix / pro			f custody?		j	Yes	No ·		
11. Samples in proper						(Yes)	No		
12. Samples property						Yes	No	N/A	
13. Sample container i						(Yes)	No		
14. Sufficient sample a		licated test/s	1?			(Yes)	No		
15. All samples receiv						(es)	No		
16. Subcontract of sar		iologic ilological				Yes	No	(A)	
17. VOC sample have		ice?				Yes	No	(N/A)	
18. Cooler 1 No.	Cooler 2 N		Cooler 3 No	`		Cooler 4 No.		Cooler 5 No.	
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bing Maps

Hobbs, NM

My Notes

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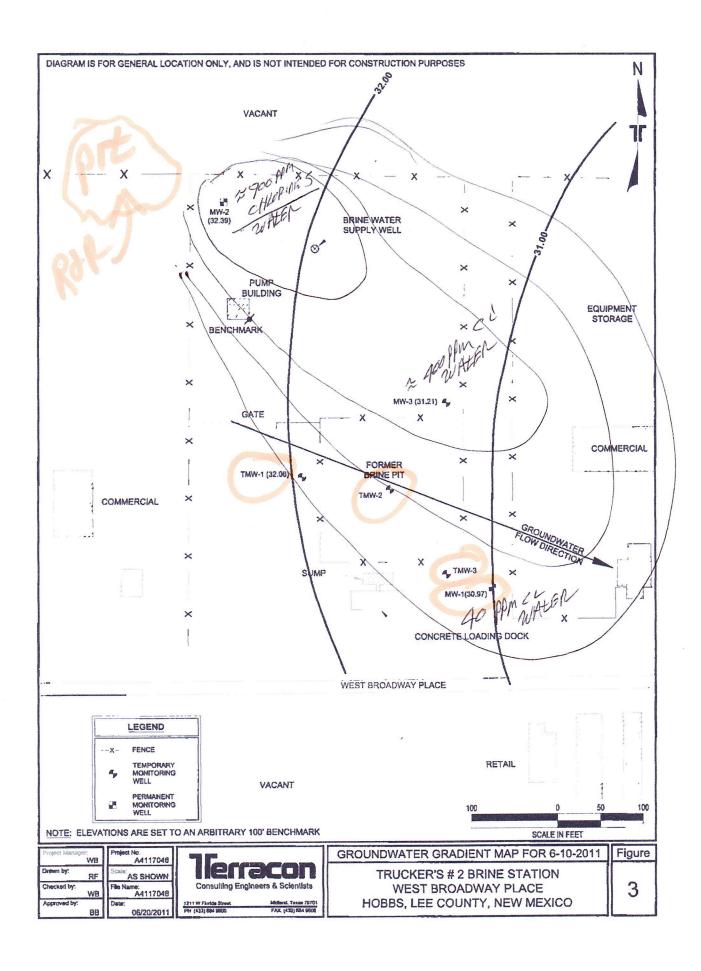


Table 1

CONCENTRATIONS OF CHLORIDES IN SOIL

Key Energy Services, Inc. Trucker's #2 Brine Station Lea County, NM **Terracon Project Number A4117046**

All concentrations are in mg/ kg

			EPA Method
SAMPLE LOCATION	SAMPLE DATE	SAMPLE INTERVAL	300.1
			Total Chlorides
TMW-1	06/08/11	0-5 fbgs	2,770
TMW-1	06/08/11	5-7 fbgs	2,110
TMW-1	06/08/11	8-10 fbgs	1,650
TMW-1	06/08/11	20-22 fbgs	541
TMW-1	06/08/11	30-32 fbgs	194
TMW-1	06/08/11	40-42 fbgs	83.5
TMW-1	06/08/11	50-52 fbgs	67.1
TMW-1	06/08/11	60-62 fbgs	18.0
TMW-2	06/08/11	0-2 fbgs	5,130
TMW-2	06/08/11	2-4 fbgs	6,180
TMW-2	06/08/11	4-6 fbgs	4,780
TMW-2	06/08/11	6-8 fbgs	5,580
TMW-2	06/08/11	8-10 fbgs	3,340
TMW-2	06/08/11	20-22 fbgs	27.7
TMW-2	06/08/11	30-32 fbgs	50.5
TMW-2	06/08/11	40-42 fbgs	72.1
TMW-2	06/08/11	50-52 fbgs	36.3
TMW-3	06/09/11	0-2 fbgs	3,170
TMW-3	06/09/11	2-4 fbgs	3,370
TMW-3	06/09/11	4-6 fbgs	2,710
TMW-3	06/09/11	6-8 fbgs	1,890
TMW-3	06/09/11	8-10 fbgs	1,250
TMW-3	06/09/11	20-22 fbgs	127
TMW-3	06/09/11	30-32 fbgs	146
TMW-3	06/09/11	40-42 fbgs	64.5
TMW-3	06/09/11	50-52 fbgs	45.9
TMW-3	06/09/11	60-62 fbgs	72.3
MW-3	06/09/11	0-2 fbgs	555
MW-3	06/09/11	2-4 fbgs	1,530
MW-3	06/09/11	4-6 fbgs	1,610
MW-3	06/09/11	6-8 fbgs	1,200
MW-3	06/09/11	8-10 fbgs	847
MW-3	06/09/11	20-22 fbgs	811
MW-3	06/09/11	30-32 fbgs	645
MW-3	06/09/11	40-42 fbgs	145
MW-3	06/09/11	50-52 fbgs	130
MW-3	06/09/11	60-62 fbgs	40.7

NOTES: fbgs = feet below ground surface TMW-2 was advanced beginning 10 fbgs, making the sample interval effectively 10 feet deeper than documented on laboratory identification information.