1RP-1662

Assessment and Closure Report

DATE: Oct. 2009



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October 12, 2009

Mr. Glenn von Gonten Senior Hydrologist/Acting Environmental Bureau Chief Environmental Bureau Oil Conservation Division Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, New Mexico 87505

RE: Assessment and Closure Report for the Pit Located at the Drickey Queen Unit Saltwater Plant # 3, Unit Letter H, Section 16, Township 14 South, Range 31 East, Chaves County, New Mexico, Operated by Celero Energy II, LP (NMOCD 1RP#1662)

Dear Mr. von Gonten:

Tetra Tech was contacted by Celero Energy (Celero) to assist in the closure of a pit at the Drickey Queen Unit Saltwater Plant # 3, located in Unit Letter H, Section 16, Township 14 South, Range 31 East, Chaves County, New Mexico (Site). The pit coordinates are N 33.10630° W 103.81912°. Both the State of New Mexico C-141 and C-144 (Initial and Final) are shown in Appendix E. The Site is shown on Figures 1 and 2.

Background

On October 11, 2007, Highlander submitted an Investigation and Characterization work plan for an open pit at this site. The ICP was approved by the New Mexico Oil Conservation Division (NMOCD).

The Drickey Queen Unit Saltwater Plant # 3 pit was dewatered and the residual sludge and tank bottom materials were removed in September 2007. Removed fluids were placed into an existing SWD system or taken to disposal, while the sludge and tank bottom materials were disposed of at the Gandy-Marley, Inc. landfill site in Lovington, New Mexico. Upon completion of the removal of the fluids and sludge, the underlying soils were visually inspected for obvious signs of impact. Approximately 1,400 cubic yards of soil were excavated and transported to Gandy-Marley, Inc for disposal. The pit was excavated to a point where the subsoil would support a soil boring rig.



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Groundwater and Regulatory

Neither the New Mexico State Engineer's Office database nor the USGS database show any wells in Section 16, Township 14 South, Range 31 East. The New Mexico State Engineer's Office database does show wells in Sections 23 and 34, Township 14S, Range 31E, with reported depths to water from 260 feet to 275 feet. This site is located west of Mescalero Ridge, and any groundwater would be derived from the Triassic Dockum or Quaternary Alluvium. See Appendix A for NM State Engineer's database report.

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Assessment and Results

On October 29, 2007, Highlander supervised the installation of soil borings at the pit. Prior to the installation of the borings, a visual inspection was performed around the perimeter of the pit. The area of the pit excavation measured approximately 57 feet by 69 feet. One soil boring (SB-1) was installed in the center of the pit. The remaining boreholes (SB-2 through SB-5) were installed outside the edges of the pit. The boring locations and the approximate edge of the pit are shown on Figure 3.

The borings were installed using an air-rotary type drilling rig. Soil samples from soil boring SB-1 were collected at 5 foot intervals to 20 feet and then 10 foot intervals thereafter during drilling operations. The samples were field screened for hydrocarbons with a PID, and field screened for chlorides. Soil samples from the remaining soil borings were collected at 10 foot intervals to depths up to 50 feet below ground surface (bgs).

The soil samples were field screened for chlorides to determine if impacts showed a distinctive decline with depth. Select soil samples were analyzed for Total Petroleum Hydrocarbons (TPH) by method modified 8015 DRO/GRO, benzene, toluene, ethylbenzene, and xylene (BTEX) by method 8021B and chloride by method 4500 CI-B. All samples were collected and preserved in



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laboratory prepared sample containers with standard QA/QC procedures. All samples were shipped under proper chain-of-custody control and analyzed within the standard holding times. The results of the sampling are shown in Table 1. The laboratory reports and chain-of-custody are included in Appendix B.

All down hole equipment was washed between boreholes or sampling events using a potable water and laboratory grade detergent. All down hole equipment (i.e., drill rods, drill bits, etc.) were thoroughly decontaminated between each use with a high-pressure hot water wash and rinse. Soil cuttings from drilling were stockpiled adjacent to the borehole. Following the completion of the drilling activities, all boreholes were grouted to the surface.

Referring to Table 1, the samples selected for TPH and BTEX analysis were all below the reporting limits. Chloride impact was found throughout SB-1. Horizontal chloride impact was defined inside the perimeter boreholes.

Soil Capping

During the week of December 22, 2007, Gandy-Marley Corporation of Lovington, New Mexico was onsite to install a one foot thick clay liner for the pit. The pit area was further extended out approximately 25 feet north and west, and 30 feet south of the original dimensions based upon the results of the borehole samples. See Figure 3 for pit liner dimensions. The soils were excavated to a depth of 4 feet bgs. The soils excavated soils were placed back into the center of the original excavation in order to bring the excavation up to a depth of 4 feet bgs. Upon completion of the clay liner, overburden material stripped from the expansion of the pit was utilized as backfill for the site and brought up to grade. A copy of the sieve analysis/permeability data for the clay is included in Appendix C.

Monitor Well Installation

On May 30, 2007, Tetra Tech was onsite to oversee the installation of temporary monitor well TMW-1, which was installed southeast of the pit. The monitor well was drilled to a depth of 100 feet and installed with 50 feet of 0.02" slotted screen at the bottom and 55 feet of schedule 40 blank PVC at the top of the boring. No groundwater was encountered during drilling of the monitor well. On July 30, 2008, Tetra Tech was onsite to gauge, develop, and sample temporary monitor well TMW-1. Approximately 10 gallons of water were removed from the well and stored in an onsite 55-gallon drum. Once the well stabilized, a sample was collected and submitted to Trace Analysis, Inc. of Midland, Texas for analysis of chlorides using EPA method E 300.0. Temporary Monitor well TMW-1 had analytical results of 64,500 mg/L chlorides. The results of the sampling are shown in Table 2. A copy of the laboratory reports and

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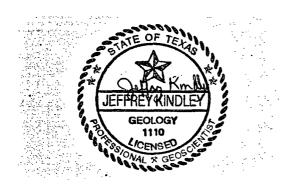
chain-of-custody are included in Appendix B, while the boring log is included in Appendix D.

Since the sampled water is believed to be perched water, and based on the results of the sampling, Tetra Tech plugged the temporary monitor well and proposes to reinstall a permanent monitor well east to southeast of the pit. Based on the findings of the new monitor well, additional monitor wells may be required to complete delineation of the groundwater.

Conclusions

Between October and December 2007, the pit area was excavated to dimensions of 95 feet by 115 feet. Approximately 1,400 cubic yards of soil were excavated and transported offsite for disposal at Gandy-Marley of Lovington, New Mexico. A clay liner was placed at 4 feet bgs in the excavation in order to impede the remaining chlorides at the site from migrating to the underlying groundwater. Upon completion of the clay liner, the site was backfilled with overburden material and brought up to surface grade.

Based upon the results of the pit closure work performed at the site, Celero Energy requests consideration of this pit for closure. If you require any additional information or have any questions or comments concerning the assessment/closure report, please call at (432) 682-4559.



Respectfully submitted,

Tetra Tech

Jeffrey Kihdley, P.O. Senior Environmental Geologist

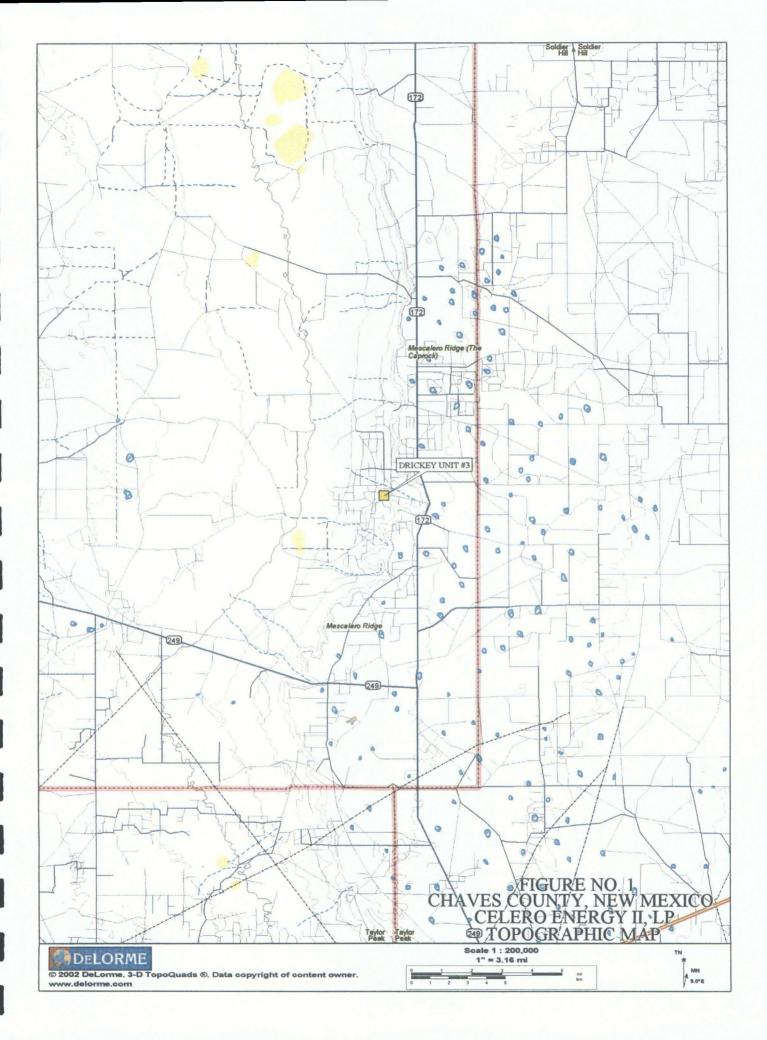
cc: Bruce Woodard – Celero Energy II LP Larry Johnson – NMOCD – Hobbs, New Mexico

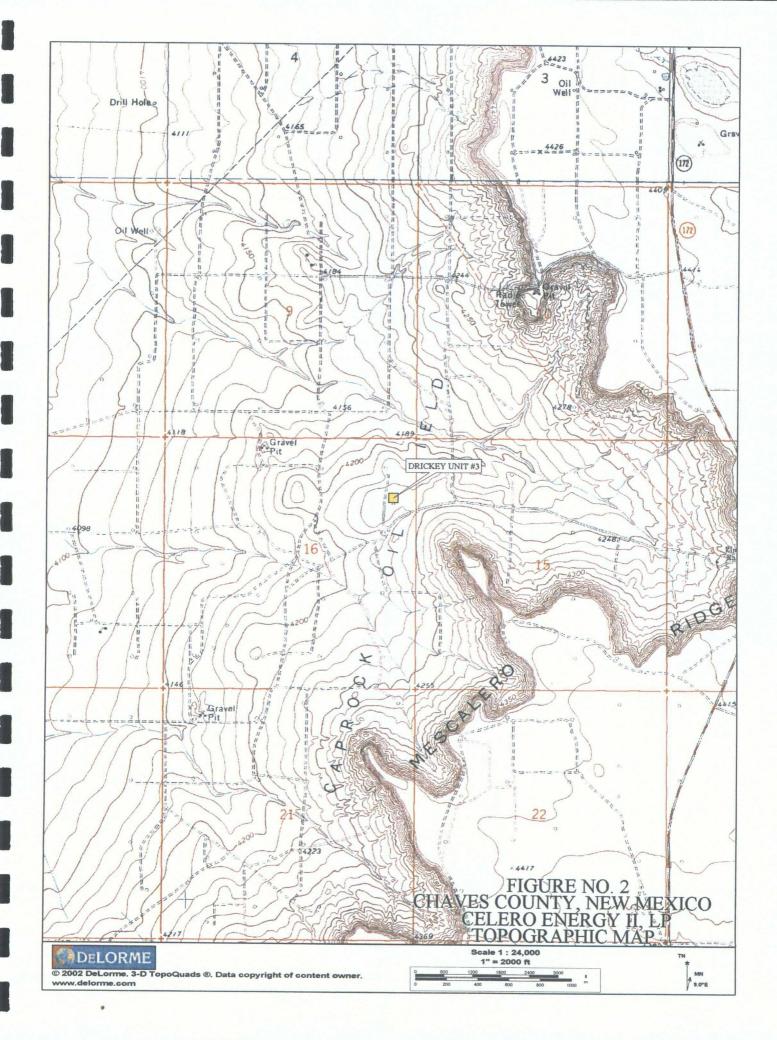
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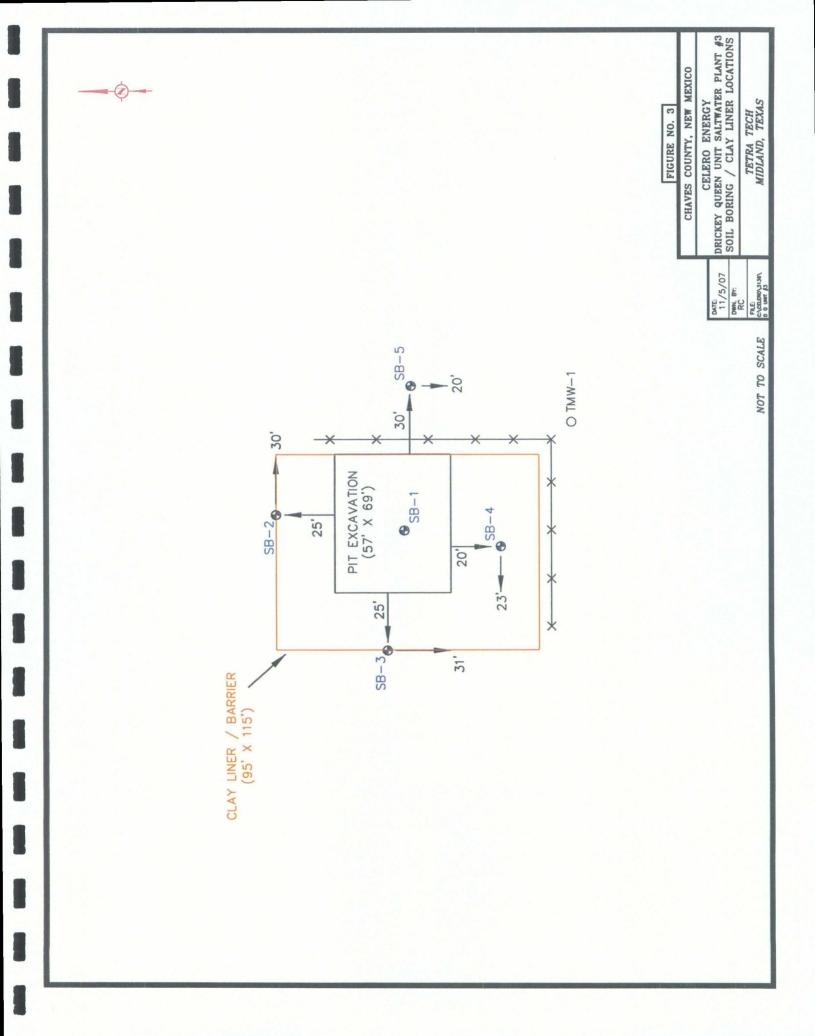
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APPENDIX A GROUNDWATER DATA

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	NAD27 X: Y: Zone: Search Radius:
	County: Basin: Number: Suffix:
10 B	Owner Name: (First) (Last) ONon-Domestic ODomestic @All
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	Clear Form iWATERS Menu Help
3 4 M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AVERAGE DEPTH OF WATER REPORT 10/11/2007
T BURK	Bsn Tws Rng Sec Zone X Y Wells Min Max Avg L 14S 31E 23 2 275 275 275 L 14S 31E 34 2 260 260 260
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APPENDIX B LABORATORY ANALYTICAL

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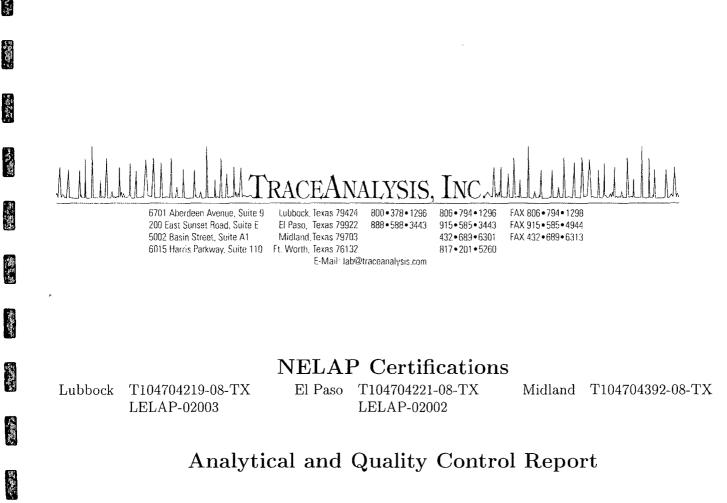
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Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX, 79705

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Report Date: August 5, 2008

Work Order: 8080109

Project Name: Celero-Dricky Queen Saltwater Plant #3 Project Number: 3136

Enclosed are t	the Analytical Report and	i Quality Control Rep	ort for the following sam	ple(s) submitted to '	TraceAnalysis, Inc.
			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
169222	TMW-1	water	2008-07-31	13:30	2008-08-01

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

This report consists of a total of 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abel

Dr. Blair Leftwich, Director

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 ${f B}$ - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Celero-Dricky Queen Saltwater Plant #3 were received by TraceAnalysis, Inc. on 2008-08-01 and assigned to work order 8080109. Samples for work order 8080109 were received intact at a temperature of 3.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (IC)	E 300.0

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Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 8080109 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Page 3 of 5

Report Date: August 5, 2008 3136

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Page Number: 4 of 5

Analytical Report

Sample: 169222 - TMW-1

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (1 51103 43811	IC)	Date A	tical Meth Analyzed: e Preparat	200	00.0 8-08-05 8-08-04			Analy	Method: zed By: red By:	N/A AR AR
			RL								
Parameter		Flag	Result		Uni	its	D	ilution			\mathbf{RL}
Chloride			64500		mg	/Ĺ		5000			0.500
Method Bla	ank (1)	QC Batch: 51103									
QC Batch:	51103		Date Ar	alvzed:	2008-08-0	05			Analy	yzed By:	AR
Prep Batch:	43811			paration:	2008-08-0					ared By:	
•				-						· ·	
					4DL						
Parameter		Flag		Re	esult		Uni				RL
		Flag		Re			Uni mg,				
Chloride Laboratory QC Batch:	Control S 51103 43811	Flag pike (LCS-1)	Date Ar QC Pre	Re	esult				•	yzed By: ared By:	0.5
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Chloride Laboratory QC Batch: Prep Batch: Param	51103	pike (LCS-1) I R	QC Pre	Re <0.0 nalyzed: paration: Units	2008-08-	04 Spike Amount	mg Mat Res	/L	Prepa Rec	ared By:	0.5 AR AR Rec. Limit
Chloride Laboratory QC Batch: Prep Batch:	51103	pike (LCS-1) I R	QC Pre	Re <0.0	esult 0181 2008-08- 2008-08-	04 Spike	mg	/L	Prep	ared By:	0.5 AR AR Rec. Limit
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Matrix Spike (MS-1) Spiked Sample: 168431

QC Batch:	51103	Date Analyzed:	2008-08-05	Analyzed By:	\mathbf{AR}
Prep Batch:	43811	QC Preparation:	2008-08-04	Prepared By:	\mathbf{AR}

Report Da	te: August 5, 20	08		Work Orde		• -]	Page Nurr	iber: 5 of 5
3136			Celero-L	Pricky Queer	n Saltwat	er Plant #3				
			MS			Spike	Ma	trix		Rec.
Param			Result	Units	Dil.	Amount		sult	Rec.	Limit
Chloride		1	90600	mg/L	50	625	90	576	4	90 - 110
Percent rec	covery is based or	n the spike re	sult. RPD is	based on th	ie spike a	nd spike du	plicate r	esult.		
		MS	-		Spike	Matrix		Rec.		RPD
Param		Res			Amount	Result	Rec.	Limit		<u> </u>
Chloride		905	500 mg/L	50	625	90576	0	90 - 11	10 0	
			Date A	nalyzed: 20	008-08-05	5			Analyzed	By: AR
			Date A	nalyzed: 20	008-08-05	ō			Analyzed	By: AR
			Date A ICVs	nalyzed: 20 ICVs		5 ICVs		Percent	·	By: AR
				·	S				·	By: AR Date
QC Batch:		Units	ICVs	ICVs	s d	ICVs		Percent	·	-
Standard QC Batch: Param Chloride	51103	Units mg/L	ICVs True	ICV: Found	s d c.	ICVs Percent		Percent Recovery	y	Date Analyzed
QC Batch: Param Chloride	51103		ICVs True Conc.	ICV: Found Conc	s d c.	ICVs Percent Recovery		Percent Recovery Limits	y	Date Analyzed
QC Batch: Param Chloride Standard	51103 Flag (CCV-1)		ICVs True Conc. 12.5	ICVs Found Conc 13.1	s d c.	ICVs Percent Recovery 105		Percent Recovery Limits 90 - 110	y)	Date Analyzed 2008-08-09
QC Batch: Param Chloride Standard	51103 Flag (CCV-1)		ICVs True Conc. 12.5	ICVs Found Conc 13.1	s d c. 	ICVs Percent Recovery 105		Percent Recovery Limits 90 - 110	y Analyzed	Date Analyzed 2008-08-08
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¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

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Analysis R	Analysis Request of Chain of Custody Record	8080109 PAGE: 1 OF: 1	
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	1910 N. Big Spring St.		
	Midland, Texas 79705	H 96	
(432) 682-4559	Fax (432) 682-3946	4 JA P	
CLIENT NAME:	SITE MANAGER:	70/625 Ba CC Ba CC	
		eA g eA g selite \$38\0 \$28\0 \$28.1a \$38.1a \$	
3/36		5 Mi 8 Aaka 8 Aa	
LAB I.D. NUMBER DATE TIME	MONE ICE HUO3 HUO3 COMP COMP COMP COMP COMP COMP COMP COMP	1508 Х902 178 Н97 178 H97 178 H97	
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6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298

6701 Aberdeen Avenue, Suite 9Lubbock, Texas 79424200 East Sunset Road, Suite EEl Paso, Texas 799225002 Basin Street, Suite A1Midland, Texas 797036015 Harris Parkway, Suite 110Ft. Worth, Texas 76132

Lubbock, Texas 79424 800 • 378 • 1296 El Paso, Texas 79922 888 • 598 • 3443 Midland, Texas 79703 't. Worth, Texas 76132 E-Mail: Tabi@traceanalysis.com

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Analytical and Quality Control Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring Street Midland, TX, 79705

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Report Date: November 13, 2007

Work Order: 7103136

Project Name: Drickey Queen Unit 3 Project Number: 3136

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

		•	Date	Time	Ďate
Sample	Description	Matrix	Taken	Taken	Received
141331	SB-1 (3-5')	soil	2007-10-29	00:00	2007-10-31
141332	SB-1 (8-10')	soil	2007-10-29	00:00	2007 - 10 - 31
141333	SB-1 (13-15')	soil	2007-10-29	00:00	2007 - 10 - 31
141334	SB-1 (18-20')	soil	2007-10-29	00:00	2007 - 10 - 31
141335	SB-1 (28-30')	soil	2007-10-29	00:00	2007 - 10 - 31
141336	SB-1 (38-40')	soil	2007-10-29	00:00	2007-10-31
141337	SB-1 (48-50')	soil	2007-10-29	00:00	2007 - 10 - 31
141338	SB-1 (58-60')	soil	2007-10-29	00:00	2007-10-31
141339	SB-1 (68-70')	soil	2007-10-29	00:00	2007-10-31
141340	SB-1 (78-80')	soil	2007-10-29	00:00	2007 - 10 - 31
141341	SB-2 (8-10')	soil	2007-10-29	00:00	2007-10-31
141342	SB-2 (18-20')	soil	2007-10-29	00:00	2007-10-31
141343	SB-2 (28-30')	soil	2007-10-29	00:00	2007 - 10 - 31
141344	SB-2 (38-40')	soil	2007-10-29	00:00	2007 - 10 - 31
141345	SB-2 (48-50')	soil	2007-10-29	00:00	2007-10-31
141346	SB-3 (8-10')	soil	2007-10-29	00:00	2007 - 10 - 31
141347	SB-3 (18-20')	soil	2007-10-29	00:00	2007 - 10 - 31
141348	SB-3 (28-30')	soil	2007-10-29	00:00	2007-10-31
141349	SB-3 (38-40')	soil	2007-10-29	00:00	2007-10-31
141350	SB-3 (48-50')	soil	2007-10-29	00:00	2007-10-31
141351	SB-4 (8-10')	soil	2007-10-29	00:00	2007-10-31
141352	SB-4 (18-20')	soil	2007-10-29	00:00	2007 - 10 - 31
141353	SB-4 (28-30')	soil	2007-10-29	00:00	2007-10-31
141354	SB-4 (38-40')	soil	2007-10-29	00:00	2007-10-31

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
141355	SB-4 (48-50')	soil	2007-10-29	00:00	2007-10-31
141356	SB-5 (8-10')	soil	2007-10-29	00:00	2007-10-31
141357	SB-5 (18-20')	soil	2007-10-29	00:00	2007-10-31
141358	SB-5 (28-30')	soil	2007-10-29	00:00	2007-10-31
141359	SB-5 (38-40')	soil	2007-10-29	00:00	2007 - 10 - 31
141360	SB-5 (48-50')	soil	2007-10-29	00:00	2007-10-31

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

This report consists of a total of 20 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Alp

Dr. Blair Leftwich, Director

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 $\,B\,$ - The sample contains less than ten times the concentration found in the method blank.

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Analytical Report

Sample:	141331	- SB-1	(3-5')
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Analysis:	BTEX		Analytical N	Method:	S 8021B		Prep Me	ethod: S	5035
QC Batch:	42934		Date Analy	zed:	2007-11-09		Analyze	d By: I	DC
Prep Batch:	37042		Sample Pre	paration:	2007-11-08		Prepared	d By: I	DC
			RI						
Parameter	Flag		Resul		Units		Dilution		RI
Benzene			< 0.0100)	mg/Kg		1		0.0100
Toluene			< 0.0100)	mg/Kg		1	(0.0100
Ethylbenzene			< 0.0100)	mg/Kg		1	().0100
Xylene			< 0.0100)	mg/Kg		1).0100
						Spike	Percent	Reco	overy
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery		nits
Trifluorotolu	ene (TFT)	<u>v</u>	1.09	mg/Kg	1	1.00	109	39.6	- 116
	· · ·		0.637	mg/Kg	1	1.00	64	47.3 -	144.3
	1331 - SB-1 (3-5')								
Sample: 14 Analysis: QC Batch:			Analy Date	vtical Meth Analyzed: le Preparat	2007-11-		Analy	Method: zed By: red By:	
Sample: 14 Analysis: QC Batch:	1331 - SB-1 (3-5') Chloride (Titration) 42947		Analy Date Samp	vtical Metho Analyzed:	2007-11-		Analy	zed By:	AR
Sample: 14	1331 - SB-1 (3-5') Chloride (Titration) 42947		Analy Date	vtical Metho Analyzed:	2007-11-		Analy	zed By:	N/A AR AR RI
Analysis: QC Batch: Prep Batch:	1331 - SB-1 (3-5') Chloride (Titration) 42947 37060		Analy Date Samp RL	vtical Metho Analyzed:	2007-11- ion:		Analy Prepa	zed By:	AR AR R
Sample: 14 Analysis: QC Batch: Prep Batch: Parameter Chloride	1331 - SB-1 (3-5') Chloride (Titration) 42947 37060		Analy Date Samp RL Result	vtical Metho Analyzed:	2007-11- ion: Units		Analy Prepa Dilution	zed By:	AR AR RI
Sample: 14 Analysis: QC Batch: Prep Batch: Parameter Chloride	1331 - SB-1 (3-5') Chloride (Titration) 42947 37060 Flag		Analy Date Samp RL Result 1150	vtical Metho Analyzed:	2007-11- ion: Units	12	Analy Prepa Dilution 50	zed By:	AR AR RI 2.0
Sample: 14 Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14	1331 - SB-1 (3-5') Chloride (Titration) 42947 37060 Flag 1331 - SB-1 (3-5')		Analy Date Samp RL Result 1150	vtical Metho Analyzed: le Preparat	2007-11- ion: Units mg/Kg	12	Analy Prepa Dilution 50 Prep 1	zed By: red By:	AR AR

			RL				ſ
Parameter	Fla	ıg	Result	Ur	nits	Dilution	\mathbf{RL}
DRO			<50.0	mg/	Жg	1	50.0
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		178	mg/Kg	1	150	119	17.3 - 169.6

Sample: 141331 - SB-1 (3-5')

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	42937	Date Analyzed:	2007-11-09	Analyzed By:	DC
Prep Batch:	37042	Sample Preparation:	2007-11-08	Prepared By:	DC

Report Date: November 13, 2007 3136

Parameter	Flag		RL Result		Units		Dilution	RL
GRO			<1.00		mg/Kg		1	1.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		_	0.762	mg/Kg	1	1.00	76	50.2 - 89.3
4-Bromofluorobenzene (4-H	3FB)		0.693	mg/Kg	1	1.00	69	51.2 - 107.4

Sample: 141332 - SB-1 (8-10')

Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42947 37060	7 Date Analyzed:		Prep Method: Analyzed By: Prepared By:	\overline{AR}
		RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	\mathbf{RL}
Chloride		1680	mg/Kg	50	2.00

Sample: 141333 - SB-1 (13-15')

Analysis: QC Batch:	Chloride (Titration) 42947	Analytical M Date Analyze		Prep Method: Analyzed By:	'
Prep Batch:		Sample Prepa		Prepared By:	
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		948	mg/Kg	50	2.00

Sample: 141334 - SB-1 (18-20')

Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42947 37060	Analytical M Date Analyze Sample Prep	ed: 2007-11-12	Prep Method: Analyzed By: Prepared By:	ÁR
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		1330	mg/Kg	50	2.00

Sample: 141335 - SB-1 (28-30')

Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42947 37060	Analytical Method: SM 4500-Cl B Date Analyzed: 2007-11-12 Sample Preparation:		Prep Method: Analyzed By: Prepared By:	AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		2350	mg/Kg	50	2.00

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Page Number: 5 of 20

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42947	Date Analyzed:	2007-11-12	Analyzed By:	AR
Prep Batch:	37060	Sample Preparation	::	Prepared By:	AR
_		RL	*1		DI
Parameter	Flag	Result	Units	Dilution	$\frac{\text{RL}}{2.00}$
Chloride		5780	mg/Kg	50	
Sample: 14	1337 - SB-1 (48-50')				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42947	Date Analyzed:	2007-11-12	Analyzed By:	AR
Prep Batch:	37060	Sample Preparation	1:	Prepared By:	\mathbf{AR}
		\mathbf{RL}			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Chloride		7290	mg/Kg	50	$\bar{2.00}$
Analysis: QC Batch:	1338 - SB-1 (58-60') Chloride (Titration) 42947	Analytical Method: Date Analyzed:	2007-11-12	Prep Method: Analyzed By:	AR
Analysis: QC Batch:	Chloride (Titration)	Date Analyzed: Sample Preparation	2007-11-12		N/A AR AR
Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42947 37060	Date Analyzed: Sample Preparation RL	2007-11-12 a:	Analyzed By: Prepared By:	AR AR
Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 42947	Date Analyzed: Sample Preparation	2007-11-12	Analyzed By:	AR AR RI
Analysis: QC Batch: Prep Batch: <u>Parameter</u> <u>Chloride</u> Sample: 14	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70')	Date Analyzed: Sample Preparation RL Result 6310	2007-11-12 a: Units mg/Kg	Analyzed By: Prepared By: Dilution 50	AR AR RI 2.00
Analysis: QC Batch: Prep Batch: <u>Parameter</u> <u>Chloride</u> Sample: 14 Analysis:	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration)	Date Analyzed: Sample Preparation RL Result 6310 Analytical Method:	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B	Analyzed By: Prepared By: Dilution 50 Prep Method:	AR AR RI 2.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch:	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration) 42948	Date Analyzed: Sample Preparation RL 6310 Analytical Method: Date Analyzed:	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By:	AR AR RL 2.00 N/A AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch:	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration)	Date Analyzed: Sample Preparation RL 6310 Analytical Method: Date Analyzed: Sample Preparation	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method:	AR AR RL 2.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration) 42948	Date Analyzed: Sample Preparation RL 6310 Analytical Method: Date Analyzed:	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By:	AR RL 2.00 N/A AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis:	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration)	Date Analyzed: Sample Preparation RL Result 6310 Analytical Method:	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B	Analyzed By: Prepared By: Dilution 50 Prep Method:	Al Al 1 2.
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration) 42948 37062	Date Analyzed: Sample Preparation RL Result 6310 Analytical Method: Date Analyzed: Sample Preparation RL	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B 2007-11-12 a:	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By:	AR AR 2.0 N/. AR AR R R
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 14	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration) 42948 37062 Flag 1340 - SB-1 (78-80')	Date Analyzed: Sample Preparation RL Result 6310 Analytical Method: Date Analyzed: Sample Preparation RL Result 2140	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B 2007-11-12 a: <u>Units</u> <u>mg/Kg</u>	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution 50	AR AR 2.00 N/A AR AR AR RI 2.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis:	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration) 42948 37062 Flag 1340 - SB-1 (78-80') Chloride (Titration)	Date Analyzed: Sample Preparation RL Result 6310 Analytical Method: Date Analyzed: Sample Preparation RL Result 2140 Analytical Method:	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B 2007-11-12 a: <u>Units</u> <u>mg/Kg</u> SM 4500-Cl B	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method:	AR AR RI 2.00 N/A AR AR AR RI 2.00 N/A
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 14	Chloride (Titration) 42947 37060 Flag 1339 - SB-1 (68-70') Chloride (Titration) 42948 37062 Flag 1340 - SB-1 (78-80')	Date Analyzed: Sample Preparation RL Result 6310 Analytical Method: Date Analyzed: Sample Preparation RL Result 2140	2007-11-12 a: <u>Units</u> <u>mg/Kg</u> <u>SM 4500-Cl B</u> 2007-11-12 a: <u>Units</u> <u>mg/Kg</u> <u>SM 4500-Cl B</u> 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution 50	AR AR 2.00 N/A AR AR AR RI 2.00

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sample 141340 continued ...

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		RL			
Parameter	Flag	Result	Units	Dilution	RL
		RL			
Parameter	Flag	\mathbf{Result}	Units	Dilution	RL
Chloride		1270	mg/Kg	50	2.00

Sample: 141341 - SB-2 (8-10')

Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42948 37062	Analytical Method: SM 4500-0 Date Analyzed: 2007-11-12 Sample Preparation:		Prep Method: Analyzed By: Prepared By:	AR
		RL			
Parameter	\mathbf{Flag}	\mathbf{Result}	Units	Dilution	\mathbf{RL}
Chloride		155	mg/Kg	50	2.00

Sample: 141342 - SB-2 (18-20')

Analysis:	Chloride (Titration)	Analytical Me	ethod: SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42948	Date Analyze	d: 2007-11-12	Analyzed By:	AR
Prep Batch:	37062	Sample Prepa	ration:	Prepared By:	AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		1960	mg/Kg	50	2.00

Sample: 141343 - SB-2 (28-30')

Analysis:	Chloride (Titration)	Analytical Me		Prep Method:	,
QC Batch:	42948	Date Analyze	d: 2007-11-12	Analyzed By:	AR
Prep Batch:	37062	Sample Prepa	ration:	Prepared By:	\mathbf{AR}
		RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Chloride		2410	mg/Kg	50	2.00

Sample: 141344 - SB-2 (38-40')

Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42948 37062	Analytical Metho Date Analyzed: Sample Preparat	2007-11-12	Prep Method: Analyzed By: Prepared By:	AR.
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		1100	mg/Kg	50	2.00

Report Date: November 13, 2007 3136

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Sample: 141345 - SB-2 (48-50')

Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42948 37062	Analytical Metho Date Analyzed: Sample Preparati	2007-11-12	Prep Method: Analyzed By: Prepared By:	AR
		RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Chloride		1190	mg/Kg	50	2.00

Sample: 141346 - SB-3 (8-10')

Analysis:	Chloride (Titration)	Analytical M	ethod: SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42948	Date Analyze	ed: 2007-11-12	Analyzed By:	AR
Prep Batch:	37062	Sample Prep	aration:	Prepared By:	AR.
		\mathbf{RL}			
Developmenter	Fl+ -		TI. it a	Dilution	DI
Parameter	Flag	Result	Units	Dilution	<u> </u>
Chloride		184	mg/Kg	50	2.00

Sample: 141347 - SB-3 (18-20')

Analysis:	Chloride (Titration)	Analytical M	Iethod: SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42948	Date Analyz	ed: 2007-11-12	Analyzed By:	AR
Prep Batch:	37062	Sample Prep	aration:	Prepared By:	\mathbf{AR}
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		533	mg/Kg	50	2.00

Sample: 141348 - SB-3 (28-30')

Analysis:	Chloride (Titration)	Analytical Metho	d: SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42948	Date Analyzed:	2007-11-12	Analyzed By:	AR
Prep Batch:	37062	Sample Preparati	ion:	Prepared By:	\mathbf{AR}
		RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	\mathbf{RL}
Chloride		931	mg/Kg	50	2.00

Sample: 141349 - SB-3 (38-40')

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42949	Date Analyzed:	2007-11-12	Analyzed By:	AR
Prep Batch:	37063	Sample Preparation:		Prepared By:	\mathbf{AR}

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Report Date: November 13, 2007

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Report Date	e: November 13, 2007	Work Order: Drickey Quee		Page Number:
sample 1413.	49 continued			
Parameter	Flag	RL Result	Units	Dilution
	· · · · · · · · · · · · · · · · · · ·	RL		
Parameter	Flag	Result	Units	Dilution
Chloride		110	mg/Kg	1
Sample: 14	1350 - SB-3 (48-50')			
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:
QC Batch:	42949	Date Analyzed:	2007-11-12	Analyzed By:
Prep Batch:	37063	Sample Preparation	:	Prepared By:
		\mathbf{RL}		
Parameter	Flag	Result	Units	Dilution
Chloride		<100	mg/Kg	50
Sample: 14 Analysis: QC Batch: Prep Batch:	A1351 - SB-4 (8-10') Chloride (Titration) 42949 37063	Analytical Method: Date Analyzed: Sample Preparation	SM 4500-CI B 2007-11-12	Prep Method: Analyzed By: Prepared By:
		RL		
Parameter	Flag	Result	Units	Dilution
Chloride	1352 - SB-4 (18-20')	<100	mg/Kg	50
Analysis:		Analatical Mathed	CM 4500 CL D	Dues Method
QC Batch: Prep Batch:	Chloride (Titration) 42949 37063	Analytical Method: Date Analyzed: Sample Preparation	SM 4500-Cl B 2007-11-12 ::	Prep Method: Analyzed By: Prepared By:
_		RL		
Parameter	Flag	Result	Units	Dilution
Chloride		876	mg/Kg	50
Sample: 14	11353 - SB-4 (28-30')			
Sample: 14 Analysis:	11353 - SB-4 (28-30') Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:
Analysis: QC Batch:	Chloride (Titration) 42949	Date Analyzed:	2007-11-12	Prep Method: Analyzed By:
-	Chloride (Titration)		2007-11-12	
Analysis: QC Batch:	Chloride (Titration) 42949 37063	Date Analyzed: Sample Preparation RL	2007-11-12	
Analysis: QC Batch:	Chloride (Titration) 42949	Date Analyzed: Sample Preparation	2007-11-12	Analyzed By:

Report Date: November 13, 2007 3136

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Sample: 14					
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42949	Date Analyzed:	2007-11-12	Analyzed By:	AR
Prep Batch:	37063	Sample Preparation		Prepared By:	\mathbf{AR}
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		728	mg/Kg	50	2.00
Sample: 14	1355 - SB-4 (48-50')				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42949	Date Analyzed:	2007-11-12	Analyzed By:	ÁŔ
Prep Batch:	37063	Sample Preparation	:	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00
Analysis:	1356 - SB-5 (8-10') Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	
Analysis: QC Batch:		Analytical Method: Date Analyzed: Sample Preparation	2007-11-12	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42949 37063	Date Analyzed: Sample Preparation RL	2007-11-12	Analyzed By: Prepared By:	AR AR
Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 42949	Date Analyzed: Sample Preparation RL Result	2007-11-12 : Units	Analyzed By: Prepared By: Dilution	AR AR RI
Sample: 14 Analysis: QC Batch: Prep Batch: Parameter Chloride	Chloride (Titration) 42949 37063	Date Analyzed: Sample Preparation RL	2007-11-12	Analyzed By: Prepared By:	
Analysis: QC Batch: Prep Batch: Parameter Chloride	Chloride (Titration) 42949 37063	Date Analyzed: Sample Preparation RL Result	2007-11-12 : Units	Analyzed By: Prepared By: Dilution	AR AR RI
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis:	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration)	Date Analyzed: Sample Preparation RL Result <100 Analytical Method:	2007-11-12 Units mg/Kg SM 4500-Cl B	Analyzed By: Prepared By: Dilution 50 Prep Method:	AR AR RI 2.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch:	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed:	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By:	AR AR RI 2.00 N/A AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch:	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration)	Date Analyzed: Sample Preparation RL Result <100 Analytical Method:	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method:	AR AR RI 2.00
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch:	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949 37063	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed: Sample Preparation RL	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By:	AR AR 2.00 N/A AR AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed: Sample Preparation RL Result	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12 Units	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution	AR AR RI 2.00 N/A AR AR AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Parameter	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949 37063	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed: Sample Preparation RL	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By:	AR AR RI 2.00 N/A AR AR AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 14	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949 37063 Flag 1358 - SB-5 (28-30')	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed: Sample Preparation RL Result 263	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12 Units	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution	AR AR RI 2.00 N/A AR AR AR
Analysis: QC Batch: Prep Batch: Prep Batch: Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis:	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949 37063 Flag 1358 - SB-5 (28-30') Chloride (Titration)	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed: Sample Preparation RL Result 263 Analytical Method:	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12 Units	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method:	AR AR RI 2.00 N/A AR
Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 14 Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 14	Chloride (Titration) 42949 37063 Flag 1357 - SB-5 (18-20') Chloride (Titration) 42949 37063 Flag 1358 - SB-5 (28-30')	Date Analyzed: Sample Preparation RL Result <100 Analytical Method: Date Analyzed: Sample Preparation RL Result 263	2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12 Units mg/Kg SM 4500-Cl B 2007-11-12	Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution 50	AR AR 2.00 N/A AR AR RI 2.00

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Report Date: November 13, 2007 3136

sample 141358 continued ...

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Parameter		Flag	RL Result	Ur	iits	Dilution		RL
		<u> </u>			100			102
Danamatan		Wlo a	RL Result	II.	nits	Dilution		\mathbf{RL}
Parameter Chloride		Flag	345	01		50		2.00
			<u> </u>	ing/	Kg			2.00
Sample: 14	1359 - SB-5	(38-40')						
Analysis:	Chloride (Ti	tration)	Analytical M	lethod: SI	M 4500-Cl B	Prep	Method:	N/A
QC Batch:	42980		Date Analyz		07-11-12	Analy	zed By:	AR
Prep Batch:	37085		Sample Prep	aration:		Prepa	ared By:	AR
_ ·			RL					
Parameter		Flag	Result		nits	Dilution		RL
Chloride			571	mg/	Kg	50		2.00
Sample: 14	1360 - SB-5	(48-50')						
Analysis:	Chloride (Ti	tration)	Analytical M	lethod: Sl	M 4500-Cl B	Prep	Method:	N/A
QC Batch:	42980	,	Date Analyz		07-11-12		zed By:	AR
Prep Batch:	37085		Sample Prep	aration:		Prepa	ared By:	AR
D .		T-1	RL		•.			ъſ
Parameter Chloride		Flag	Result 486	-	nits	Dilution 50		RL 2.00
			*200	mg/	<u></u>			2.00
Method Bla		QC Batch: 42653		0005 11				
QC Batch: Prep Batch:	$\begin{array}{c} 42653\\ 36804 \end{array}$		Date Analyzed: QC Preparatior				lyzed By: bared By:	LD LD
				MDL				
Parameter		Flag	R	esult		Units		RL
DRO		<u> </u>		32.6		mg/Kg		50
Cuuno moto	Flore	Denult	I.I. ita	Dilution	Spike	Percent	Reco	
Surrogate n-Triacontan	Flag	Result 86.5	Units mg/Kg	Dilution 1	Amount 150	Recovery 58	Lin 32.9 -	
					130	00		130.1
Method Bla		QC Batch: 42934						
QC Batch:	42934		Date Analyzed:	2007-11-			lyzed By:	DC
Prep Batch:	37042		QC Preparation	n: 2007-11-0	08	Prep	bared By:	DC

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Deve w star	Els m		ME Resu		Un	:+-	RL
Parameter Benzene	Flag		<0.001		mg/		0.01
							0.01
Toluene			< 0.001		mg,		
Ethylbenzene			< 0.001	60	mg		0.01
Xylene	· · · - · · · · · · · · · · · · · · · ·		< 0.004	10	mg,	/Kg	0.01
			·		Spike	Percent	Recovery
Surrogate	Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.950	mg/Kg	1	1.00	95	58.2 - 121.3
4-Bromofluorobenzene (4-BFB)		0.615	mg/Kg	1	1.00	62	25 - 123.7

Method Blank (1) QC	Batch: 42937						
QC Batch: 42937 Prep Batch: 37042		Date Ana QC Prep		2007-11-09 2007-11-08		~	ed By: DC ed By: DC
•		•	MI			×	v
Parameter	Flag		Res	ult	Units	8	RL
GRO .			0.9	72	mg/K	g	1
					Spike	Percent	Recovery
Surrogate	Flag	\mathbf{Result}	Units	5 Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.727	mg/K	g 1	1.00	73	67.8 - 103
4-Bromofluorobenzene (4-BFE	5)	0.617	mg/K	•	1.00	62	24.6 - 123

Method Blank (1)	QC Batch: 42947				
QC Batch: 42947 Prep Batch: 37060		Date Analyzed: 2007-11-12 QC Preparation: 2007-11-12		Analyzed By: Prepared By:	
		MDL			
Parameter	Flag	\mathbf{Result}	Units		RL
Chloride	·····	< 0.500	mg/Kg		2

Method Blank (1) QC Batch: 42948

QC Batch: Prep Batch:	42948 37062		Date Analyzed: QC Preparation:			Analyzed By: Prepared By:	
			М	DL			
Parameter		Flag	Res	sult	Units		\mathbf{RL}
Chloride			<0.	500	mg/Kg		2

Method Blank (1) QC Batch: 42949

QC Batch:	.42949	Date Analyzed:	2007-11-12	Analyzed By:	\mathbf{AR}
Prep Batch:	37063	QC Preparation:	2007-11-12	Prepared By:	\mathbf{AR}

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		MDL		
Parameter	\mathbf{Flag}	Result	Units	RL
Chloride		< 0.500	mg/Kg	2

Method Blank (1) QC Batch: 42980

QC Batch: Prep Batch:	42980 37085	Date Analyzed: 2007-11-12 QC Preparation: 2007-11-12		yzed By: AR ared By: AR
		MDL		
Parameter	Flag	Result	Units	RL
Chloride		< 0.500	mg/Kg	2

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	42653 36804		e Analyzed: Preparation:	2007-1 2007-1			•	yzed By: LD ared By: LD
Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		198	mg/Kg	1	250	<13.4	79	49.1 - 142.3

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

	LCSD			Spike	Matrix		$\operatorname{Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	209	mg/Kg	1	250	<13.4	84	49.1 - 142.3	5	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	119	118	mg/Kg	1	150	79	79	49 - 133.2

Laboratory Control Spike (LCS-1)

QC Batch:	42934	Date Analyzed:	2007-11-09	Analyzed By:	DC
Prep Batch:	37042	QC Preparation:	2007-11-08	Prepared By:	DC

	LCS			Spike	Matrix		Rec.
Param	\mathbf{Result}	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Benzene	1.03	mg/Kg	1	1.00	< 0.00110	103	71.2 - 119
Toluene	0.969	mg/Kg	1	1.00	< 0.00150	97	76.3 - 116.5
Ethylbenzene	0.865	mg/Kg	1	1.00	< 0.00160	86	77.6 - 114
Xylene	2.55	mg/Kg	1	3.00	< 0.00410	85	78.8 - 113.9

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	\mathbf{Limit}	RPD	Limit
Benzene	1.04	mg/Kg	1	1.00	< 0.00110	104	71.2 - 119	1	20
continued									

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Report Date: November 13, 2007 3136

control spikes continued											
	LCSD			Spike	Ν	Iatrix		R	.ec.		RPE
Param	Result	Units	Dil.	Amount		Result	Rec.		mit	RPD	Limi
Toluene	1.04	mg/Kg	g 1	1.00).00150	104		- 116.5	7.	20
Ethylbenzene	0.864	mg/Ka	g 1	1.00		0.00160	86	77.6	- 114	0	20
Xylene	2.56	mg/K	<u>g 1</u>	3.00	<(0.00410	85	78.8	- 113.9	0	20
Percent recovery is based on the s	spike result.	RPD i	is based	on the spil	ke and	l spike du	iplicat	te result	•		
	LC	S L	CSD			Spik	æ	LCS	LCSD]	Rec.
Surrogate	Resu		esult	Units	Dil.	Amou	unt	Rec.	Rec.		imit
Trifluorotoluene (TFT)	0.94		1.04	mg/Kg	1	1.0		94	104		- 107.
4-Bromofluorobenzene (4-BFB)	0.78	2 ().784	mg/Kg	1	1.0	0	78	78	56.2	- 118
QC Batch: 42937 Prep Batch: 37042		QC P	Analyze reparati							yzed By ared By	: D(
D	LC		T	D.1		Spike		Aatrix	D		Rec.
Param	Res		Units		· 1	Amount		Result	Rec.		Limit
GRO Percent recovery is based on the s	9.		mg/Kg			10.0		<0.739	93	00	- 105
Param GRO	LCSD Result 9.76	Unit mg/F			nt	Matrix Result <0.739	Rec 98	. Li	tec. imit 105.2	RPD 4	RP Lim 20
Percent recovery is based on the	spike result			on the spil	ke and	l spike du	uplica	te result	·.		
	LC	S L	CSD			Spil	кe	LCS	LCSD		Rec.
Surrogate	Resi	ilt R	tesult	Units	Dil.	Amo		Rec.	Rec.		imit
Trifluorotoluene (TFT)	0.86		0.974	mg/Kg	1	1.0		87	97		- 148
4-Bromofluorobenzene (4-BFB)	0.72	2 0).685	mg/Kg	1	1.0	0	72	68	67.2	- 119
Laboratory Control Spike (Lo QC Batch: 42947 Prep Batch: 37060	CS-1)		Analyze reparati		11-12 11-12					yzed By ared By	
Param	Re	CS sult	Units			Spike Amount		Matrix Result	Rec		Rec. Limi
Chloride	98	3.2	mg/K	g 1		100		< 0.500	98	5	35 - 1
Percent recovery is based on the s	spike result	. RPD i	is based	on the spil	ke and	l spike di	uplica	te result			
	LCSD			Spil	ke	Matrix]	Rec.		RP
Param	Result	Uni	tsD			\mathbf{Result}	Re	ec. I	imit	RPD	Lin
	00.0	/1	77 -	1 10	~	O FOO		0 07	4.4.8	-	

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

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Report Date: November 13, 2007	Work Order: 7103136
3136	Drickey Queen Unit 3

Page Number: 14 of 20

Laboratory	Control	Spike	(LCS-1)
Laboratory	Control	opmo	(1001)

QC Batch: 42948	Date Analyzed:	2007-11-12	Analyzed By:	\mathbf{AR}
Prep Batch: 37062	QC Preparation:	2007-11-12	Prepared By:	AR

	LCS	_		Spike	Matrix	_	Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	97.1	mg/Kg	1	100	< 0.500	97	85 - 115

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	98.1	mg/Kg	1	100	< 0.500	98	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch:	42949	Date Analyzed:	2007-11-12	Analyzed By:	\mathbf{AR}
Prep Batch:	37063	QC Preparation:	2007-11-12	Prepared By:	\mathbf{AR}

			LCS			Spike	Matrix		Rec.
Param			\mathbf{Result}	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	 		100	mg/Kg	1	100	< 0.500	100	85 - 115
		 .,	L DDD		, .,				

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{Result}	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	101	mg/Kg	1	100	< 0.500	101	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	Date Analyzed: QC Preparation:	Analyzed By: Prepared By:	

Param Result Units Dil. Amount Result		Rec.
	Rec.	Limit
Chloride 97.5 mg/Kg 1 100 <0.500	98	85 - 115

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

	RPD		Rec.		Matrix	Spike			LCSD	
Chloride 98.5 mg/Kg 1 100 <0.500 98 85 - 115	RPD Limit	R	Limit	Rec.	Result	Amount	Dil.	Units	Result	Param
	1 20	_	85 - 115	98	< 0.500	100	1	mg/Kg	98.5	Chloride

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

Matrix Spike (MS-1) Spiked Sample: 140623

QC Batch:	42653	Date Analyzed:	2007-11-02	Analyzed By:	LD
Prep Batch:	36804	QC Preparation:	2007-11-02	Prepared By:	LD

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3136		Work Order: 7103136 Drickey Queen Unit 3						Page Number: 15 of 20			
		MS	5			Spike	Matri	x		1	Rec.
Param		Resu		Units	Dil.	Amount	Resul	t	Rec.		Limit
DRO		37.	1 n	ng/Kg	1	250	276		38	30.2	- 201.4
Percent recovery is base	d on the sp	ike result.	RPD is	based o	on the spike	and spike d	uplicate r	esult.			
		MSD			Spike	Matrix		Re	с.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Lin		RPD	Limit
DRO	1	291	mg/Kg	1	250	276	6	30.2 -	201.4	24	20
Percent recovery is base	d on the sp	ike result.	RPD is	based o	on the spike	and spike d	uplicate 1	esult.			
	MS	MS	D			Spike	M	IS	MSD	1	Rec.
Surrogate	\mathbf{Result}	Resu	ılt	Units	Dil.	Amoun	t Re	ec.	Rec.		Limit
n-Triacontane	164	164	1	mg/Kg	1	150	1()9	109		10 - 194
			-	•	n: 2007-1	. 00			1 tep	ared By	r: DC
		MS		-		Spike	Matri		-		Rec.
Param		Resu	lt (Units	Dil.	Spike Amount	Resul	t	Rec.	I	Rec. Limit
Benzene		Resu 1.07	lt (7 m	Units g/Kg	Dil.	Spike Amount 1.00	Result <0.001	t 10	Rec	I 65.7	Rec. Limit 7 - 119.1
Benzene Toluene		Resu 1.07 1.21	lt (7 m l m	Units g/Kg g/Kg	Dil. 1 1	Spike Amount 1.00 1.00	Result <0.001 <0.001	t 10 50	Rec.	<u>I</u> 65.7 47.7	Rec. Limit 7 - 119.1 7 - 153.8
Benzene Toluene Ethylbenzene		Resu 1.07 1.21 1.26	lt (7 m l m 3 m	Units ng/Kg ng/Kg ng/Kg	Dil. 1 1 1	Spike Amount 1.00 1.00 1.00	Result <0.001 <0.001 <0.001	t 10 50 60	Rec	I 65.7 47.7 73.5	Rec. Limit 7 - 119.1 7 - 153.8 6 - 126.3
Benzene Toluene Ethylbenzene Xylene	d on the sp	Resu 1.07 1.21 1.26 3.76	lt (7 m 1 m 3 m 3 m	Units g/Kg g/Kg g/Kg g/Kg	Dil. 1 1 1 1	Spike Amount 1.00 1.00 1.00 3.00	Result <0.001 <0.001 <0.001 <0.004	t 10 50 60 10	Rec.	I 65.7 47.7 73.5	Rec. Limit 7 - 119.1 7 - 153.8 6 - 126.3
Benzene Toluene Ethylbenzene	d on the sp	Resu 1.07 1.21 1.26 3.76 ike result.	lt (7 m 1 m 3 m 3 m	Units g/Kg g/Kg g/Kg g/Kg	Dil. 1 1 1 1 0n the spike	Spike Amount 1.00 1.00 3.00 e and spike d	Result <0.001 <0.001 <0.001 <0.004	t 10 50 60 10 result.	Rec. 107 121 126 125	I 65.7 47.7 73.5	Rec. Limit 7 - 119.1 7 - 153.8 6 - 126.3 6 - 125.9
Benzene Toluene Ethylbenzene Xylene	d on the sp	Resu 1.07 1.21 1.26 3.76	lt (7 m 1 m 3 m 3 m	Units ng/Kg ng/Kg ng/Kg ng/Kg based o	Dil. 1 1 1 1	Spike Amount 1.00 1.00 1.00 3.00	Result <0.001 <0.001 <0.001 <0.004	t 10 50 60 10	Rec. 107 121 126 125	I 65.7 47.7 73.5	Rec.
Benzene Toluene Ethylbenzene Xylene Percent recovery is base	- 2	Resu 1.07 1.21 1.26 3.76 ike result. MSD	lt (7 7 m b m 6 m 6 m RPD is Units mg/Kg	Units ng/Kg ng/Kg ng/Kg ng/Kg based o	Dil. 1 1 1 0n the spike Spike	Spike Amount 1.00 1.00 3.00 e and spike d Matrix	Result <0.001 <0.001 <0.001 <0.004 uplicate n	t 10 50 60 10 result. Re Lir	Rec. 107 121 126 125	I 65.7 47.7 73.5 73.6	Rec. Limit 7 - 119.1 7 - 153.8 6 - 126.3 6 - 125.9 RPD
Benzene Toluene Ethylbenzene Xylene Percent recovery is base Param Benzene Toluene	2 3	Resu 1.07 1.21 1.26 3.76 ike result. MSD Result 1.26 1.51	It U 7 m 6 m 6 m 7 m 8 m 9 m 1 </td <td>Units g/Kg g/Kg g/Kg based c Dil.</td> <td>Dil. 1 1 1 on the spike Amount</td> <td>Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150</td> <td>Result <0.001 <0.001 <0.004 uplicate n Rec.</td> <td>t 10 50 60 10 result. Re Lir 65.7 -</td> <td>Rec. 107 121 126 125 ec. nit</td> <td>I 65.7 47.7 73.5 73.6 RPD</td> <td>Rec. Limit 7 - 119.1 7 - 153.8 5 - 126.3 6 - 125.9 RPD Limit 20 20</td>	Units g/Kg g/Kg g/Kg based c Dil.	Dil. 1 1 1 on the spike Amount	Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150	Result <0.001 <0.001 <0.004 uplicate n Rec.	t 10 50 60 10 result. Re Lir 65.7 -	Rec. 107 121 126 125 ec. nit	I 65.7 47.7 73.5 73.6 RPD	Rec. Limit 7 - 119.1 7 - 153.8 5 - 126.3 6 - 125.9 RPD Limit 20 20
Benzene Toluene Ethylbenzene Xylene Percent recovery is base Param Benzene Toluene Ethylbenzene	2 3 4	Resu 1.07 1.21 1.26 3.76 ike result. MSD Result 1.26 1.51 1.55	It U 7 m 6 m 6 m 7 m 8 m 9 m 10 m 10 m 10 m 11 m 11 m 12 m 11 m 12 m 12 m 13 m 14 m 15 m 15 m 16 m 17 m 18 m 19 m 10 m 10 <	Units Ig/Kg Ig/Kg Ig/Kg based c Dil. 1	Dil. 1 1 1 1 on the spike Spike Amount 1.00	Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110	Result <0.001	t 10 50 60 10 result. Re Lir 65.7 - 47.7 -	Rec. 107 121 126 125 ec. nit 119.1	I 65.7 47.7 73.5 73.6 RPD 16	Rec. Limit 7 - 119.1 7 - 153.8 5 - 126.3 5 - 125.9 RPD Limit 20 20 20
Benzene Toluene Ethylbenzene Xylene Percent recovery is base Param Benzene Toluene	2 3	Resu 1.07 1.21 1.26 3.76 ike result. MSD Result 1.26 1.51	It U 7 m 6 m 6 m 7 m 8 m 9 m 1 </td <td>Units Ig/Kg Ig/Kg Ig/Kg based c Dil. 1 1</td> <td>Dil. 1 1 1 1 on the spike Spike Amount 1.00 1.00</td> <td>Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150</td> <td>Result <0.001</td> <0.001	Units Ig/Kg Ig/Kg Ig/Kg based c Dil. 1 1	Dil. 1 1 1 1 on the spike Spike Amount 1.00 1.00	Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150	Result <0.001	t 10 50 60 10 cesult. 65.7 - 47.7 - 73.5 -	Rec. 107 121 126 125 ec. nit 119.1 153.8	I 65.7 47.7 73.5 73.6 RPD 16 22	Rec. Limit 7 - 119.1 7 - 153.8 5 - 126.3 6 - 125.9 RPD Limit 20 20
Benzene Toluene Ethylbenzene Xylene Percent recovery is base Param Benzene Toluene Ethylbenzene	2 3 4 3	Resu 1.07 1.21 1.26 3.76 ike result. MSD Result 1.26 1.51 1.55 4.78	lt (7 m b m b m G m RPD is mg/Kg mg/Kg mg/Kg mg/Kg	Units g/Kg gg/Kg gg/Kg based o Dil. 1 1 1 1 1	Dil. 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150 <0.00160 <0.00410	Result <0.001	t 10 50 60 10 result. Re Lir 65.7 - 47.7 - 73.5 - 73.6 -	Rec. 107 121 126 125 ec. nit 119.1 153.8 126.3	I 65.7 47.7 73.5 73.6 RPD 16 22 21	Rec. Limit 7 - 119.1 7 - 153.8 5 - 126.3 5 - 125.9 RPD Limit 20 20 20
Benzene Toluene Ethylbenzene Xylene Percent recovery is base Param Benzene Toluene Ethylbenzene Xylene Percent recovery is base	2 3 4 3	Resu 1.07 1.21 1.26 3.76 ike result. MSD Result 1.26 1.51 1.55 4.78	lt U 7 m 6 m 7 m 6 m 7 m 7 m 7 m 8 m 7	Units gg/Kg gg/Kg gg/Kg based of Dil. 1 1 1 1 1 1 SD	Dil. 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150 <0.00160 <0.00410 e and spike d	Result <0.001	t 10 50 60 10 result. Re Lir 65.7 - 47.7 - 73.5 - 73.6 -	Rec. 107 121 126 125 ec. nit 119.1 153.8 126.3	I 65.7 47.7 73.5 73.6 RPD 16 22 21 24	Rec. Limit 7 - 119.1 7 - 153.8 5 - 126.3 5 - 125.9 RPD Limit 20 20 20
Benzene Toluene Ethylbenzene Xylene Percent recovery is base Param Benzene Toluene Ethylbenzene Xylene	2 3 4 3	Result 1.07 1.21 1.26 3.76 ike result. MSD Result 1.26 1.51 1.55 4.78 ike result.	lt U m m m m m m m m m m m m m m m m m m m	Units gg/Kg gg/Kg gg/Kg based o Dil. 1 1 1 1 1 1 1 1 1 1 1 1	Dil. 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	Spike Amount 1.00 1.00 3.00 e and spike d Matrix Result <0.00110 <0.00150 <0.00160 <0.00410 e and spike d Sp Dil. Am	Result <0.001	t 10 50 60 10 result. Re Lir 65.7 - 47.7 - 73.5 - 73.6 - result.	Rec. 107 121 126 125 ec. mit 119.1 153.8 126.3 125.9	I 65.7 47.7 73.5 73.6 RPD 16 22 21 24	Rec. Limit 7 - 119.1 7 - 153.8 6 - 126.3 6 - 125.9 RPD Limit 20 20 20 20 20

Matrix Spike (MS-1) Spiked Sample: 141491

4-Bromofluorobenzene (4-BFB)

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QC Batch:	42937	Date Analyzed:	2007-11-09	Analyzed By:	DC
Prep Batch:	37042	QC Preparation:	2007-11-08	Prepared By:	DC

mg/Kg

1

116

1

107

60.3 - 124.3

¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control. ²Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control. ³RPD out due to extractio process. Use LCS/LCSD to show method is in control. •

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⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control. ⁵Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control. Report Date: November 13, 2007 3136

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					Spike			_		Rec.
Param		-	-	Dil.		-				Limit
GRO								94	10) - 102.
Percent recovery is based on the	spike result.	RPD is l	based on	the spike a	and spike	duplicate	e result.			
	MSD			Spike	Matrix		Re	ec.		RPI
Param	Result	Units	Dil.	Amount					RPD	Limi
GRO	6 25.5	mg/Kg	1	10.0	23.7787	7 17	10 -	102.2	26	20
Percent recovery is based on the	spike result.	RPD is	based on	the spike a	and spike	duplicate	e result.			
	MS	М	SD			Spike	MS	MSD		Rec.
Surrogate	Resu	lt Rea	sult	Units	Dil. A	mount	Rec.	Rec.		Limit
Trifluorotoluene (TFT)	0.53	5 0.8	541 n	ng/Kg	1	1	54	54		
4-Bromofluorobenzene (4-BFB)	1.34	1.	.21 n	ng/Kg	1	1	134	121	58	- 162.
Matrix Spike (MS-1) Spik QC Batch: 42947 Prep Batch: 37060	ed Sample: 14	Date Ar								
	MS	3			Spike	. N	Aatrix			Rec.
Param			Units	Dil.	-			Rec		Limit
Chloride	109	1 00		50	5000	6	310.73			85 - 11
					Watri					
	Result	Units	Dil.	Amount	Resul	t Rec	e. Li	mit	RPD	Lim
Chloride	Result 10900	mg/Kg	50	Amount 5000	Resul 6310.7	t Rec 73 92	2. Li 85 -	mit	RPD 0	Lim
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948	Result 10900 e spike result.	mg/Kg RPD is 11348 Date Ar	50 based on nalyzed:	Amount 5000 the spike 2007-11-	Resul 6310.7 and spike	t Rec 73 92	2. Li 85 -	mit - 115 Analy	0 yzed B	Lim 20 y: AF
Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062	Result 10900 e spike result. ed Sample: 14	mg/Kg RPD is 11348 Date Ar QC Prej	50 based on nalyzed: paration:	Amount 5000 the spike 2007-11- 2007-11-	Resul 6310.7 and spike 12 12 Spike	t Rec 73 92 duplicat	2. Li 85 - e result. Matrix	mit - 115 Analy Prepa	0 yzed By ared By	Lim 20 y: AR y: AR Rec.
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param	Result 10900 spike result. ed Sample: 14 MS Resu	mg/Kg RPD is 11348 Date Ar QC Prej S ilt	50 based on nalyzed: paration: Units	Amount 5000 the spike 2007-11- 2007-11- Dil.	Resul 6310.7 and spike 12 12 Spike Amour	t Rec 73 92 duplicat	2. Li 85 e result. Matrix Result	mit - 115 Analy Prepa Rec	0 yzed B ared By	Lim 20 y: AF y: AF Rec. Limit
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride	Result 10900 spike result. ed Sample: 14 MS Resu 583	mg/Kg RPD is 11348 Date Ar QC Prep S ilt 0 r	50 based on nalyzed: paration: Units mg/Kg	Amount 5000 the spike 2007-11- 2007-11- Dil. 50	Resul 6310.7 and spike 12 12 Spike Amoun 5000	t Rec 73 92 duplicat	2. Li 85 e result. Matrix Result 30.683	mit - 115 Analy Prepa	0 yzed B ared By	Lim 20 y: AF y: AF Rec. Limit
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride	Result 10900 spike result. ed Sample: 14 MS Resu 583 spike result.	mg/Kg RPD is 11348 Date Ar QC Prep S ilt 0 r	50 based on nalyzed: paration: Units mg/Kg	Amount 5000 the spike 2007-11- 2007-11- Dil. 50 the spike a	Resul 6310.7 and spike 12 12 12 Spike Amoun 5000 and spike	t Rec 73 92 duplicat	e result. Matrix Result 30.683 e result.	mit - 115 Analy Prepa Rec 98	0 yzed B ared By	Lim 20 y: AF y: AF Rec. Limit 85 - 11
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride Percent recovery is based on the	Result 10900 spike result. ed Sample: 14 MSD	mg/Kg RPD is 11348 Date Ar QC Prej S ilt 0 r RPD is 1	50 based on nalyzed: paration: <u>Units</u> mg/Kg based on	Amount 5000 the spike 2007-11- 2007-11- Dil. 50 the spike Spike	Resul 6310.7 and spike 12 12 12 Spike Amoun 5000 and spike Matri	t Rec 73 92 duplicat ht 1 g duplicat	2. Li 85 e result. Matrix Result 30.683 e result. R	mit - 115 Analy Prepa Rec 98	0 yzed B ared By	Lim 20 y: AF y: AF Rec. Limit 85 - 11
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride Percent recovery is based on the Param	Result 10900 spike result. ed Sample: 14 MSD Result	mg/Kg RPD is 11348 Date Ar QC Prep S ilt 0 r RPD is 1 Units	50 based on nalyzed: paration: <u>Units</u> <u>mg/Kg</u> based on Dil.	Amount 5000 the spike 2007-11- 2007-11- Dil. 50 the spike Amount	Resul 6310.7 and spike 12 12 12 Amoun 5000 and spike Matri Resul	t Rec 73 92 duplicat ht 1 duplicat x t Rec	2. Li 85 e result. Matrix Result 30.683 e result. R c. Li	mit - 115 Analy Prepa Rec 98 .ec. mit	0 yzed B ared By	Limi 20 y: AR y: AR kec. Limit 85 - 11 RPI Limi
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride Percent recovery is based on the Param Chloride	Result 10900 spike result. ed Sample: 14 MSD Result 5870	mg/Kg RPD is 11348 Date Ar QC Prep S Ilt 0 r RPD is Units mg/Kg	50 based on nalyzed: paration: <u>Units</u> mg/Kg based on <u>Dil.</u> 50	Amount 5000 the spike a 2007-11- 2007-11- Dil. 50 the spike a Spike Amount 5000	Resul 6310.7 and spike 12 12 12 Amour 5000 and spike Matri Resul 930.68	$\begin{array}{ccc} t & Rec\\ \hline 3 & 92\\ \hline duplicat\\ \hline \\ nt & 1\\ \hline \\ g\\ duplicat\\ x\\ t & Rec\\ \hline \\ 3 & 99 \end{array}$	2. Li 85 e result. datrix Result 30.683 e result. R 2. Li 85	mit - 115 Analy Prepa Rec 98 .ec. mit	0 yzed B ared By	Lim 20 y: AF y: AF Rec. Limit 85 - 11
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride Percent recovery is based on the Param Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik	Result 10900 spike result. ed Sample: 14 MSD Result 5870 spike result.	mg/Kg RPD is 11348 Date Ar QC Prep 3 Ilt 0 r RPD is mg/Kg RPD is 11358	50 based on nalyzed: paration: <u>Units</u> mg/Kg based on <u>Dil.</u> 50 based on	Amount 5000 the spike s 2007-11- 2007-11- Dil. 50 the spike s Spike Amount 5000 the spike s	Resul 6310.7 and spike 12 12 12 Amoun 5000 and spike Matri Resul 930.68 and spike	$\begin{array}{ccc} t & Rec\\ \hline 3 & 92\\ \hline duplicat\\ \hline \\ nt & 1\\ \hline \\ g\\ duplicat\\ x\\ t & Rec\\ \hline \\ 3 & 99 \end{array}$	2. Li 85 e result. datrix Result 30.683 e result. R 2. Li 85	mit - 115 Analy Prepa Rec 98 .ec. mit	0 yzed B ared By	Lim 20 y: AF y: AF Rec. Limit 85 - 11 RP1 Lim
Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42948 Prep Batch: 37062 Param Chloride Percent recovery is based on the Param Chloride Percent recovery is based on the Matrix Spike (MS-1) Spik QC Batch: 42949	m Result Units Dil. Amount Result Res. Limi 0 33.2 mg/Kg 1 10.0 23.7787 P4 10-10 ent recovery is based on the spike result. MSD Spike Matrix Rec. HI m Result Units Dil. Amount Result rec. HI 0 6 25.5 mg/Kg 1 10.0 23.7787 17 10-102 26 2 ent recovery is based on the spike result. RPD is based on the spike result. RPD Limits Dil. Amount Rec. HI ordel recovery is based on the spike result. MS MSD Spike MS MSD Rec. Limits Dil. Amount Rec. Limits Dil. Amount Res. Limits Dil. Amount Rec. Limits Dil. Amount Rec. Limits Dil. Amount Rec. Limits Dil. Amount Result Rec. Limits Dil. Amount Rec. Limits		Lim 20 y: AF y: AF Rec. Limit 85 - 11 Lim 20 y: AF							

⁶RPD out of control limits due to extraction process. Use LCS/LCSD to show method is in control. •

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_			MS		D /-	Spike	Mat			Rec.
Param			Result	Units	Dil	Amount	Res		lec.	Limit
Chloride			5320	mg/Kg	50	5000	344.	828 1	100	85 - 115
Percent reco	overy is based	l on the spike res	ult. RPD	is based on	the spike a	nd spike du	plicate re	esult.		
		MSI)		Spike	Matrix		Rec.		RPD
Param		Resu			Amount	Result	Rec.	Limit	RPD	Limit
Chloride		5370)mg/	Kg 50	5000	344.828	100	85 - 115	1	20
Percent reco	overy is based	l on the spike res	ult. RPD	is based on	the spike a	nd spike du	plicate re	esult.		
Matrix Sp	ike (MS-1)	Spiked Sample	e: 141467							
QC Batch:	42980		Date	Analyzed:	2007-11-1	12		An	alyzed B	y: AR
Prep Batch:	37085		QC I	Preparation:	2007-11-1	12		Pre	epared B	y: AR
			MS			Spike	Ma	trix		Rec.
Param			Result	Units	Dil.	Amount	Res		lec.	Limit
Chloride		7	9260	mg/Kg	50	5000	519		81	85 - 115
Percent reco	overy is based	l on the spike res	ult. RPD	is based on	the spike a	nd spike du	plicate r	esult.		· · · · · · · · · · · · · · · · · · ·
		MSI)		Spike	Matrix		Rec.		RPD
Param		Resu	lt Un	its Dil.	Amount	Result	Rec.	Limit	RPD	Limi
Chloride		8 931	0 mg/	Kg 50	5000	5198.11	82	85 - 115	0	20
Standard (QC Batch:	. ,		Date	Analyzed:	2007-11-02	2		An	nalyzed E	sy: LD
			CCVs	CC	Vs	CCVs		Percent		
			True		ind	Percent		Recovery		Date
Param	Flag	Units	Conc.	Co		Recovery	1	Limits	А	nalyzed
DRO		mg/Kg	250	22	21	88		85 - 115		07-11-0
Standard ((CCV-2)									
QC Batch:	42653		Date	Analyzed:	2007-11-02	2		Ar	nalyzed E	By: LD
			CCVs True		Vs Ind	CCVs Percent		Percent Recovery		Date
Param	Flag	Units	Conc.		nc.	Recovery	1	Limits	А	.nalyzed
DRO		mg/Kg	250		33	93		85 - 115		07-11-02
Standard ((ICV-1)									
QC Batch:	42934		Date	Analyzed:	2007-11-09)		An	alyzed E	y: DC

⁷Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. ⁸Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. Report Date: November 13, 2007 3136 Work Order: 7103136 Drickey Queen Unit 3

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0950	95	85 - 115	2007-11-09
Toluene		mg/Kg	0.100	0.0952	95	85 - 115	2007-11-09
Ethylbenzene		mg/Kg	0.100	0.0891	89	85 - 115	2007-11-09
Xylene		mg/Kg	0.300	0.267	89	85 - 115	2007-11-09

Standard (CCV-1)

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QC Batch: 429	934		Date Analyzed:	: 2007-11-09		Analy	yzed By: DC
			CCVs True	CCVs Found	CCVs Percent	Percent	Date
				Found		Recovery	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0986	99	85 - 115	2007-11-09
Toluene		mg/Kg	0.100	0.100	100	85 - 115	2007-11-09
Ethylbenzene		mg/Kg	0.100	0.0950	95	85 - 115	2007-11-09
Xylene		mg/Kg	0.300	0.286	95	85 - 115	2007-11-09

Standard (ICV-1)

QC Batch:	42937		Date Ana	alyzed: 2007-1	1-09	Anal	yzed By: DC
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.938	94	85 - 115	2007-11-09

Standard (CCV-1)

QC Batch:	42937		Date Ana	alyzed: 2007-1	1-09	Anal	yzed By: DC
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.09	109	85 - 115	2007-11-09

Standard (ICV-1)

QC Batch:	42947		Date Anal	lyzed: 2007-11	-12	Anal	yzed By: AR
			ICVs True	ICVs Found	ICVs Demosrat	Percent	Data
			True	round	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2007-11-12

Standard (CCV-1)

QC Batch: 42947

Date Analyzed: 2007-11-12

Analyzed By: AR

Report Dat 3136	e: November 1	13, 2007		Work Order: 71 Drickey Queen		Page Nu	umber: 19 of 20
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-11-12
Standard	(ICV-1)						
QC Batch:	42948		Date Anal	lyzed: 2007-11	-12	Anal	yzed By: AR
			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2007-11-1
Standard	(CCV-1)						
QC Batch:	42948		Date Ana	lyzed: 2007-11	-12	Anal	yzed By: AR
			CCVs	CCVs	CCVs	Percent	D .
Danam	Flor	TInita	True	Found	Percent	Recovery	Date
Param Chloride	Flag	Units mg/Kg	<u>Conc.</u> 100	Conc. 99.1	Recovery 99	Limits 85 - 115	Analyzed 2007-11-1
QC Batch:	42949		Date Ana	lyzed: 2007-11	-12	Anal	yzed By: AR
			ICVs	ICVs	ICVs	Percent	_
D		TT •/	True	Found	Percent	Recovery	Date
Param Chloride	Flag	Units mg/Kg	<u>Conc.</u> 100	<u>Conc.</u> 97.9	Recovery 98	Limits 85 - 115	Analyzed 2007-11-1
		mg/ Kg		91.9		00 - 110	2007-11-1
Standard							
QC Batch:	42949			lyzed: 2007-11		Anal	yzed By: AR
			CCVs True	CCVs Found	CCVs	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2007-11-1
Standard	(ICV-1)						
QC Batch:	42980		Date Ana	lyzed: 2007-11	-12	Anal	yzed By: AR
			ICVs	ICVs	ICVs	Percent	
D	D 1	T T •-	True	Found	Percent	Recovery	Date
Param	Flag	Units	<u>Conc.</u> 100	<u>Conc.</u> 100	Recovery	Limits 85 - 115	Analyzed 2007-11-1
Chloride		mg/Kg			100		

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Report Date: November 13, 2007 3136

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Standard (CCV-1)

QC Batch:	42980		Date Anal	yzed: 2007-11	-12	Anal	yzed By: AR
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2007-11-12

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HIGHLANDER 1910 1 1910 1 1910 1 1910 1 Midla. No: PROJECT NALL NO: DATE TER EN No: DATE TALE EN PROJECT NALL NO: DATE TALE EN PROJECT NALL NO: DATE TALE EN PROJECT NALL NO: DATE TALE EN PARTE TAL			NUMPOR RUSSON NUMPOR RUSS NUMPOR	Alpha Beia (Alr) 2 Alpha Beia (Alpha) 2
2) 682-4559 Midla: 2) 682-4559 Midla: VAME: PROJECT NAM VAME: PROJECT NAM IDATE TTARE IDATE S			CC.NE AOT ES40/808 K LEH LETE S030/803 KCIF REFUTE VERTIE LETE ACTUR VOLATION LETE S030/803 LETE S030/803	Р.С.В.'в. 8080/808 Р.е.а. 808/608 Р.е.а. 808/608 ПОЛ, ГЗЗ, Р.Н. ТОЗ, Споліde 5 Саплия Брес. 5
2) 682-4559 Midland, Eco No.: PROJECT NAME: THE PROJECT NAME: 136 Dricky Que 10[29]07 10[29]07 10[29]07 10[29]07 10[29]07 10[29]07 10[29]07 10[29]07 10[29]07 10[20]07	Hax Harden Contractor 133		Image: Construction Construction Image: Construction Construc	PCH's 8080/608 PCH's 808/608 Gamma Spec. Alpha Beia (Mr)
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APPENDIX C PERMEABILITY/SIEVE ANALYSIS

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Hines, Joleen

From: Hines, Jolean

Sent: Monday, September 28, 2005 3:46 PM

To: 'John P Pellicer'

Subject: Cover Bucket Density & Clay K-Sat

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I have attached the results for the density of the cover material 'as-is' in the 5-gal bucket, and the saturated hydraulic conductivity for the clay (remolded at 90%). Please let me know how to proceed.

Thank you,

Joieen

Jolean Hines Danlel B. Stephens & Associates Laboratory 5840 Osuna Rd., NE Albuquerque, NM 87109

505.889.7752 505.889.0258(fax) jhines@dbstephens.com GANDY MARLEY INC



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Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Gandy Marley Job Number: LB05.0208.00 Sample Number: Cover (Bucket) Ring Number: N/A Depth: N/A

Test Date: 23-Sep-06

Field weight" of sample (g): 21538.00 Tare weight, ring (g): 0.00 Tere weight, cep/plets/epoxy (g): 0.00

> Dry weight of sample (g): 20511.00 Sample volume (c:n³): 14884.53 Assumed particle density: 2.85

initial Volumetric Moisture Content (% vol): 6 9 Initial Grøvimetric Moisture Content (% g/g): 5.0 Dry bulk density (g/cm³): 1 38 Wet bulk density (g/cm³): 1.45 Celculated Porosity (% vol): 48.0 Percent Saturation: 14.3

Comments:

" Weight Including tares NA = Not analyzed

> Laboratory analysis by: D. O'Dowd Data entered by: D. O'Dowd Checked by: J. Hines

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Daniel B. Stephens & Associates, Inc.

Summary of Saturated Hydraulic Conductivity Tests

		Kual	Method o	Method of Analysis				
Sample Numbe	er	(cm/sec)	Constant Head Flexible Wall	Falling Head Flexible Wall				
Clay		1,5E-08		×				

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SAMPLE RECEIPT FO)KM	
CLIENT: Gandy Marley, Inc.	DATE RECE	VED: <u>9/16/05</u>
PROJECT #:		
DBS&A	·	
PROJECT #:		
1) Are the custody seals on the cooler intact?		NA
2) Are the custody seals on the sample containers intact?		Yes
 Are there Chain of Custody(COC), or other directive shi 	ipping papers?	Yeş
4) Is the COC complete?		See Note
5) Is the COC In agreement with the samples received?		See Note
6) Did all the samples arrive intact?		Yes
7) Comments		
Three samples arrived, each in full 5-gallon clay sample is being prepared today and tes further instuction on the Cover and Caliche s clay core sample.	ting will begin soon. V	Vill await
If you have any questions or concerns pleas 889-7752,	e contact Joleen Hine	es at (505)
	ne completion of testi	
NOTE: Samples will be held for a period of 30 days after the	receives other instruc	tions
NOTE: Samples will be held for a period of 30 days after the 30 days after the 30 days samples will be disposed of locally unless DBS&A	/	
NOTE: Samples will be held for a period of 30 days after the 30 days after the 30 days samples will be disposed of locally unless DBS&A	1	
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NOTE: Samples will be held for a period of 30 days after the 30 days samples will be disposed of locally unless DBS&A Signature:		

charged at our regular schedule of professional services feas, which is available upon request. The testing utilized to generate laboratory reports follows methods that are standard for the industry. The results do not constitute a professional or expert opinion by DBS&A, nor can the results affect any professional or expert opinions rendered with respect thereto by DBS&A. All testing undertaken by DBS&A, and any and all reports provided from said testing, constitute mere test results using standardized methods, and cannot be used to disqualify DBS&A from rendering any waive any claim of conflict of interest by DBS&A in the event professional or expert opinion is requested of gualified professionals or experts DBS&A, for or against any party. Other than the express warranty that the testing utilized under this Contract uses standard methods, DBS&A

APPENDIX D BORING LOGS

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Sec. 19

Boring/Well:TMW-1Project Number:3136Client:Celero EnergySite Location:Drickey Queen Unit SWD Plant #3Location:Chavez County, New MexicoTotal Depth100Date Installed:10/30/07

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DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-10	2.1	Tan/yellow fine grain sand
15-20	2.2	Tan fine grain sand
25-30	2.3	Yellowish/red fine grain sand
. 35-40	2.6	Red fine grain sand
45-50	2.8	Red/brown fine grain sand
55-60	2.1	Tan/red fine grain sand
65-70	2.4	Red sandy clay
75-80	2.6	Red clay of high plasticity (red clay)
85-90	2.7	Red clay of high plasticity (red clay)
95-100	2.2	Red clay of high plasticity (red clay)

Total Depth is 100 feet No Groundwater encountered during drilling

Boring/Well:	SB-1
Project Number:	3136
Client:	Celero Energy
Site Location:	Drickey Queen Unit SWD Plant #3
Location:	Chavez County, New Mexico
Total Depth	80
Date Installed:	10/29/07

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DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	18.2	Tan fine grain well sorted sand
5-10	10.4	Tan fine grain well sorted sand
10-15	3.2	Tan fine grain well sorted sand
15-20	2.2	Tan fine grain well sorted sand
25-30	2.3	Brown/red well sorted sand
35-40	2.2	Brown/red well sorted sand
45-50	2.1	Brown/red well sorted sand
55-60	1.9	Brown clayey sand
65-70	2.0	Red clay (Red bed)
75-80	2.1	Red clay (Red bed)

Total Depth is 70 feet

No Groundwater encountered during drilling

.

Boring/Well:SB-2Project Number:3136Client:Celero EnergySite Location:Drickey Queen Unit SWD Plant #3Location:Chavez County, New MexicoTotal Depth50Date Installed:10/29/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-10	2.3	Brown fine grain sand
15-20	2.2	Tan fine grain sand
25-30	2.1	Tan fine grain sand
35-40	2.2	Brown/red well sorted sand
45-50	2.1	Brown/red well sorted sand

Total Depth is 50 feet

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No Groundwater encountered during drilling

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Boring/Well:SB-3Project Number:3136Client:Celero EnergySite Location:Drickey Queen Unit SWD Plant #3Location:Chavez County, New MexicoTotal Depth50Date Installed:10/29/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-10	2.2	Brown well sorted sand with hydrocarbon odor
15-20	2.2	Tan fine grain well sorted sand
25-30	2.3	Tan fine grain well sorted sand
35-40	2.4	Brown well sorted fine grain sand
45-50	2.1	Brown well sorted fine grain sand

Total Depth is 50 feet

No Groundwater encountered during drilling

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Boring/Well:SB-4Project Number:3136Client:Celero EnergySite Location:Drickey Queen Unit SWD Plant #3Location:Chavez County, New MexicoTotal Depth50Date Installed:10/29/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-10	2.4	Brown fine grain sand
15-20	2.3	Tan fine grain well sorted sand
25-30	2.1	Tan fine grain well sorted sand
35-40	2.2	Red fine grain well sorted sand
45-50	1.9	Tan/red fine grain well sorted sand

Total Depth is 50 feet

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No Groundwater encountered during drilling

SB-5
3136
Celero Energy
Drickey Queen Unit SWD Plant #3
Chavez County, New Mexico
50
10/30/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-10	2.3	Tan/brown fine grain well sorted sand
15-20	2.1	Tan fine grain well sorted sand
25-30	2.2	Tan fine grain well sorted sand
35-40	2.3	Reddish tan/brown well sorted fine grain sand
45-50	2.1	Reddish tan/brown well sorted fine grain sand

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Total Depth is 50 feet No Groundwater encountered during drilling

APPENDIX E INITIAL/FINAL C-141 & C-144

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			f New Mex: and Natura				Form C-141 Revised June 10, 2003			
	 1301 W. Grand Avenue, Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505 	1220 Sout	ervation Division Submit 2 Copies District Office with St. Francis Dr. with Ru Fe, NM 87505			Copies to appropriate Office in accordance th Rule 116 on back side of form				
	Release N	otificatio	n and Co	orrective A						
	Name of Company: Celero Energy II, LP Address: 400 W. Illinois, Suite 1601, Midland, TX Facility Name: Drickey Queen Unit Salt Water Plar		OPERATOR ☑ Initial Report ☐ Final Re Contact: Bruce Woodard ☐ ☐ Telephone No. 432-686-1883 ☐ ☐ Facility Type: Pit at Facility ☐ ☐							
111 111		neral Owner			Lease	No.				
			ON OF REI	EASE						
	Unit LetterSection\TownshipRangeH1614S31E		h/South Line	Feet from the	East/West Line	County Chaves				
10 10 ARC	Latitude _33.132		Longitu		971°					
	Type of Release Produced Water	MATURI		Release Unknow	n Volume	Recovered 1	None			
State of the	Source of Release						covery			
97 88	Was Immediate Notice Given?	Not Required	Unknown N/A If YES, To Whom? d Larry Johnson, NMOCD							
and the second	By Whom? Bruce Woodard		Date and Hour							
	Was a Watercourse Reached?		If YES, Volume Impacting the Watercourse.							
いたい	If a Watercourse was Impacted, Describe Fully.*									
一部である」、「	Describe Cause of Problem and Remedial Action Taken.* This is an historic pit location. Celero acquired from Palis		the process of	closing.						
a mark a superior	Pit has been dewatered and visually impacted soil remove	d as per Inves	tigation and Ch	aracterization Pla	n. Soil borings h	ave been plac	ed in and around			
	I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other									
And the second se	Signature:			OIL CON	SERVATION	N DIVISIO	<u>ON</u>			
the the second se	Printed Name: Bruce Woodard		Approved by	District Supervis	sor:					
1 100	Title: Engineer		Approval Da	te:	Expiratio	n Date:				
	E-mail Address: bwoodard@celeroenergy.com		Conditions o	f Approval:		Attached	1			
R	Date: Phone: (432) 686-1883		<u> </u>							
	* Attach Additional Sheets If Necessary									

78.5

1 205

District 1 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

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State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised June 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Release Notification and Corrective Action

Th							OPERA	FOR	Initi	al Report	\boxtimes	Final H	Report	
	Name of Co	ompany: C	Celero Energ	y II, LP			Contact: Br	uce Woodard						
35					and, TX 79701		Telephone No. 432-686-1883							
413	Facility Nat	me: Drick	ey Queen U	nit Salt W	/ater Plant #3		Facility Type: Pit at Facility							
and derived and	Surface Ow	mer State			Mineral (Owner	ner Lease No.							
					LOCA	ATIO	N OF REI	LEASE						
	Unit Letter H	Section\ 16	Township 14S	Range 31E	Feet from the		/South Line	Feet from the	East/West Line	County Chaves				
His and			Lat	titude _	<u>33.13221°</u>	TIPF	Longitu OF REL	de <u>103.809</u> EASE	71°					
	Type of Rele	ase Produc	ed Water			UNE		Release Unknow	n Volume	Recovered Non	e			
m								lour of Occurrenc		Hour of Discov	_			
							Unknown		N/A					
	was immedia	ate Notice (Yes 🗌	No 🗌 Not Re	equired	If YES, To Larry John	Whom? son, NMOCD						
14, 11, 14, 16, 19 14, 14, 14, 14, 16, 16	By Whom? Bruce Wood	ard					Date and H	lour			_			
	Was a Water	course Read	ched?		N.		If YES, Vo	olume Impacting t	he Watercourse.					
And a line	Yes No													
1	If a Watercou	urse was Im	pacted, Desci	ribe Fully.	*									
1.1	Describe Cau	ise of Probl	em and Reme	dial Actio	n Taken.*									
1. S.					from Palisades ar	nd is in t	he process of	closing.						
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Describe Are Pit has been	Describe Area Affected and Cleanup Action Taken.* Pit has been dewatered and visually impacted soil removed as per Investigation and Characterization Plan. Soil borings have been placed in and around												
37 G.		ner was ins	talled at 4 fee	t bgs with	dimensions of 95	feet by	115 feet to pr	eclude further ver	tical migration of nderstand that put	chlorides.			_	
		ll operators	are required	to report a	nd/or file certain i	release n	otifications a	nd perform correc	tive actions for re	leases which ma	iy er	ndanger		
Sec. Brent	public health	or the envi	ronment. The	e acceptan	ce of a C-141 rep	ort by th	e NMOCD m	arked as "Final R	eport" does not re	lieve the operato	or of	liability	y Jah	
	should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other									11111				
1						· 								
All Burnt	Signature:	/ /		/				OIL CON	SERVATION	<u>DIVISION</u>	_			
1	1	m		·			Approved by	District Supervis	or:					
12.4	Printed Name	e: Bruce Wo	oodard											
_	Title: Engine	er					Approval Da	te:	Expiration	Date:				
22 2 2 2 2	<u>E-mail Addre</u>	ess: bwooda	rd@celeroen	ergy.com	`		Conditions of	f Approval:		Attached [٦			
	Date:	Phor	ne: (432) 686-	1883							.			
19 19	Attach Addi													
4														

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District 1 1625 N. French Dr., Hobbs, NM 88240 District 41 1301 W. Grand Avenue, Artesia, NM 88210 <u>District 141</u> 1000 Rio Brazos Road, Aztee, NM 87410 <u>District 17</u> 1220 S. St. Francis Dr. Santa Fe. NM 87505

State of New Mexico Energy Minerals and Natural Resources

Form C-144 June 1, 2004

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 For drilling and production facilities, submit to appropriate NMOCD District Office. For downstream facilities, submit to Santa Fe office

	5 Sa	inta re, nivi 87505	office				
	Pit or Below-Gra	de Tank Registration or (Closure				
•	Is pit or below-grade tan	k covered by a "general plan"? Yes [
Турсо	faction: Registration of a pit of	or below-grade tank 🛛 Closure of a pit or be	low-grade tank				
Operator Colero Energy II, LP	Telephone:	(432) 686-1883	e-mail address: bwoodard@ceferoenergy.com				
Address: 400 West Illinois, Suite 1601	, Midland, Texas 79701						
Facility or well name: Drickey Queen Unit S	Saltwater Plant # 3 API #:	U/L or Qtr/Qtr	H Sec 16 T-14-S R-31-E				
County: Chaves	Latitude	e 33.13221 N Longitude 103.8097	71 W NAD: 1927 🛛 1983 🗋				
Surface Owner: Federal 🔲 State 🔀 Private 🗋 Indian 🗍							
<u>Pit</u>		Below-grade tank					
Type: Oritting 🗋 Production 🗋 Disposal		Volume:bbl Type of fluid:	· · · · · · · · · · · · · · · · · · ·				
Workover 🔲 Emergency 🛛		Construction material:					
Lined 🗍 Unlined 🛛		Double-walled, with leak detection? Yes	🗌 If not, explain why not.				
Liner type: None Thickness Unknown m	nil Clay 🗌						
Pit Volume 5,000 bbl							
Constitution and a sector of a sector of the	n hottom of nit to operational	Less than 50 feel	(20 points)				
Depth to ground water (vertical distance from bottom of pit to seasonal		50 feet or more, but less than 100 feet	(10 points)				
high water devation of ground water.)	high water elevation of ground water.)		(0 points) 0				
		Yes	(20 points)				
Wellhead protection area: (Less than 200 fe	•	No	(0 points)				
water source, or less than 1000 feet from all	other water sources.)						
Distance to surface water: (horizontal dista	nce to all wetlands playas	Less than 200-feet	(20 points)				
	enhemeral watercourses)	200 feet or more, but less than 1000 feet	(10 points) 10				
irrigation canals, ditches, and perennial and	ephemeral watercourses.)	200 feet or more, but less than 1000 feet 1000 feet or more	(10 points) 10 (0 points)				
	ephemerał watercourses.)						
irrigation canals, ditches, and perennial and	· 	1000 feet or more Ranking Score (Total Points)	(0 points) 10				
irrigation canals, ditches, and perennial and	of the facility showing the pit	1000 feet or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) 10 (2) Indicate disposal location: (check the onsite box if				
irrigation canals, ditches, and perennial and <u>If this is a pit closure:</u> (1) Attach a diagram your are burying in place) onsite [] offsite [of the facility showing the pit	1000 feet or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) 10 (2) Indicate disposal location: (check the onsite box i general description of remedial action taken including				
irrigation canals, ditches, and perennial and It this is a pit closure: (1) Attach a diagram your are burying in place) onsite [] offsite [remediation start date and end date. (4) Grou	of the facility showing the pit If offisite, name of facility_ ndwater encountered: No	1000 feet or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) 10 (2) Indicate disposal location: (check the onsite box if				
irrigation canals, ditches, and perennial and If this is a pit closure: (1) Attach a diagram your are burying in place) onsite [] offsite [remediation start date and end date. (4) Grou (5) Attach soil sample results and a diagram of	of the facility showing the pit If offsite, name of facility_ indwater encountered: No of sample locations and excava	1000 fect or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) 10 (2) Indicate disposal location: (check the onsite box in general description of remedial action taken including faceft. and attach sample results.				
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Irrigation canals, ditches, and perennial and If this is a pit closure: (1) Attach a diagram your are burying in place) onsite [] offsite [remediation start date and end date. (4) Grou (5) Attach soil sample results and a diagram of Additional Comments: This registration is This pit is out of service and a work plan for [] hereby certify that the information above	of the facility showing the pit If offsite, name of facility_ ndwater encountered: No sof sample locations and excava for information purposes only. r closure is being prepared. is true and complete to the bes	1000 fect or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) (2) Indicate disposal location: (check the onsite box i general description of remedial action taken including faceft. and attach sample results. vere inventoried, but never registered in 1997. ify that the above-described pit or below-grade tag				
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Irrigation canals, ditches, and perennial and If this is a pit closure: (1) Attach a diagram your are burying in place) onsite [] offsite [remediation start date and end date. (4) Grou (5) Attach soil sample results and a diagram of Additional Comments: This registration is: This pit is out of service and a work plan for This pit is out of service and a work plan for this been/will be constructed or closed ac Date: 6-15-2007 Printed Name/Title Bruce Woodard, Enging Your certification and NMOCD approval c	of the facility showing the pit If offsite, name of facility_ ndwater encountered: No st sample locations and excava for information purposes only. r closure is being prepared. is true and complete to the bes cording to NMOCD guidelin incer of this application/closure does	1000 feet or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) 10 (2) Indicate disposal location: (check the onsite box if general description of remedial action taken including faceft, and attach sample results.				
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Irrigation canals, ditches, and perennial and If this is a pit closure: (1) Attach a diagram your are burying in place) onsite [] offsite [remediation start date and end date. (4) Grou (5) Attach soil sample results and a diagram of Additional Comments: This registration is: This pit is out of service and a work plan for This pit is out of service and a work plan for has been/will be constructed or closed ac Date: 6-15-2007 Printed Name/Title Bruce Woodard, Enging Your certification and NMOCD approval conterwise endanger public health or the em- regulations. Approval:	of the facility showing the pit If offsite, name of facility_ ndwater encountered: No sample locations and excava for information purposes only. r closure is being prepared. is true and complete to the bes cording to NMOCD guidelin incer of this application/closure does vironment. Nor does it relieve	1000 fect or more Ranking Score (Total Points) 's relationship to other equipment and tanks.	(0 points) (2) Indicate disposal location: (check the onsite box if general description of remedial action taken including faceit. and attach sample results. vere inventoried, but never registered in 1997. ify that the above-described pit or below-grade tan b) alternative OCD-approved plan []. See above [X] c contents of the pit or tank contaminate ground water				

	 1301 W. Grand Avenue, Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505 	nergy Mir Oil C 1220 Sa	ate of New Mexico nerals and Natural Resources conservation Division South St. Francis Dr. nta Fe, NM 87505	Form C-144 June 1, 2004 For drilling and production facilities, submit to appropriate NMOCD District Office. For downstream facilities, submit to Santa Fe office						
	Pit or Below-Grade Tank Registration or Closure Is pit or below-grade tank covered by a "general plan"? Yes INO X Type of action: Registration of a pit or below-grade tank I Closure of a pit or below-grade tank I									
	Operator: Celero Energy II. LP Telephone: (432) 686-1883 e-mail address: bwoodward@celeroenergy.com Address: 400 West Illinios, Suite 1601, Midland, Texas 79701									
	Pit Type: Drilling Production Disposal Workover Emergency Lined Unlined Liner type: None Thickness Unknown Clay Pit Volume 5,000	Below-grade tank sposal Volume:bbl Type of fluid: Construction material: Construction material: Double-walled, with leak detection? Yes If not, explain why not. vn Clay								
-10 S	Depth to ground water (vertical distance from bottom of pit to s high water elevation of ground water.) approximately 110 feet		Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(1	0 points) 0 points) 0 points) 0					
	Wellhead protection area: (Less than 200 feet from a private do water source, or less than 1000 feet from all other water sources		Yes No	()	0 points) 0 points) 0					
	Distance to surface water: (horizontal distance to all wetlands, irrigation canals, ditches, and perennial and ephemeral waterco		Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(1	0 points) 0 points) 10 0 points)					
			Ranking Score (Total Points)		10)				
)	<u>this is a pit closure</u>: (1) Attach a diagram of the facility show your are burying in place) onsite cluding remediation start date and end date. (4) Groundwater e b) Attach soil sample results and a diagram of sample locations a	of facility_G	andy-Marley Landfill, Lovington, NM	. (3) Attach a	general descriptio					
	Additional Comments: Pit was constructed in the 1960s and was inventoried in 1997 but never registered. This pit is out of service and a work plan has been completed and									
approved for closure. In September 2007 fluids were removed from site and placed into an existing SWD system. The site was excavated and the sludge and tank bottoms were disposed of at Gandy-Marley, Inc. landfill in Lovington, New Mexico. Upon completion of the removal of the fluids the underlying soils were visually inspected for obvious signs of impact. Approximately 1,400 cubic yards of soil were transported to Gandy-Marley for disposal. On October 29, 2007, one soil boring was placed within the										
	pit and four along the perimeter to delineate the chlorides. See liner measuring approximately 95 feet by 115 feet was placed in site was then backfilled with clean soil and brought up to surface	n the pit to a								
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines , a general permit , or an (attached) alternative OCD-approved plan . Date: Printed Name/Title Bruce Woodward, Engineer Signature Signature Signature Signature Signature Signature NOUCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or potherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.										
	Approval: Printed Name/Title		Signature		Date: _					