

December 1, 2011

DEC 01 2011

NMOCD ARTESIA

Mr. Mike Bratcher
NMOCD District 2
811 S. 1<sup>st</sup> Street
Artesia, NM 88210

Phone 806.467.0607 Fax 806.467.0622 Subject:

Soil Assessment and Remediation Work Plan

Quantum Resources Management, LLC

Artesia Battery 1 to Battery 3 Transfer Line Release

Artesia Unit No. 88

API # 30-015-31488 - 2RP-839

Revision

**AUSTIN** 

**ARTESIA** 

AMARILLO
921 North Bivins

Amarillo, Texas 79107

408 West Texas Ave. Artesia, New Mexico 88210

Phone 575.746.8768

Fax 575 746.8905

9II West Anderson Lane Suite 202 Austin, Texas 78757 Phone 5I2.989.3428

Fax 512.989.3487

HOBBS

318 East Taylor Street Hobbs, New Mexico 88240 Phone 575.393.4261 Fax 575.393.4658

MIDLAND

290I State Hwy 349 Midland, Texas 79706 Phone 432.522.2133 Fax 432.522.2180

SAN ANTONIO

II Commercial Place Schertz, Texas 78154 Phone 2IO.265.8025 Fax 2IO.568.2I9I

TULSA 525 South Main Street Suite 535 Tulsa, Oklahoma 74I03 Phone 9I8.742.087I Fax 9I8.382.0232

ENVIRONMENTAL CONSULTING ENGINEERING

DRILLING
CONSTRUCTION
SPILL MANAGEMENT
GENERAL CONTRACTING

Dear Mr. Bratcher,

Quantum Resources Management, LLC has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the referenced Artesia Unit No. 88. Talon's soil assessment results and proposed remediation activities consist of the following:

### **Incident Date**

July 11, 2011

### **Background Information**

The Artesia Unit No. 88 is located approximately sixteen (16) miles southeast of Artesia, New Mexico. The legal location for the site is Section 35, Township 17 South and Range 28 East in Eddy County, New Mexico. More Specifically the latitude and longitude for the release are 32.78976 North and -104.15330 West.

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services, the soil in this area is made up of Kimbrough-Stegall loams complex soils with 0 to 3 percent slopes. The local surface and shallow geology, Quaternary Age sedimentary deposits, is comprised of alluvium and eolian sands under lain by sand stone and hard caliches. The New Mexico State Engineer web site indicates the nearest ground water data to be in S26-T17S-R27E. The ground water in Section 26 is reported to be at an average depth of 250' below ground surface (bgs). The referenced groundwater data is presented in Appendix I.

The ranking for this site is 0 based on the as following:

Depth to ground water >100'
Wellhead Protection Area >1000'
Distance to surface water body >1000'

Toll Free: 866.742.0742 www.talonlpe.com

### **Incident Description**

On July 11, 2011 the water transfer line coming from the Artesia Battery No. 1 to the Artesia Battery No. 3 had developed a leak. The line was shut-in, repaired and placed back into service. Nineteen to twenty-two (19-22) barrels of produced water were released with no fluids recovered. The release is located on the transfer line 200-yards north of the Artesia Unit No. 88 well location. The impacted area measured approximately 92-feet long by 18-feet to 61-feet wide in some areas. The impacted area on the lease road measured approximately 43-feet long by 1-2 feet wide. The visually impacted soil was immediately excavated and transported to a NMOCD approved disposal facility.

### **Actions Taken**

On July 18, 2011 Talon/LPE mobilized personnel to begin the assessment and soil sampling for the construction of a work plan. Grab soil samples were collected utilizing a backhoe. The soil samples labeled S-1 were collected from the impacted area to a depth of 12-feet.

On August 10, 2011 Talon/LPE mobilized personnel again to the site for soil sampling at greater depths utilizing a split spoon auger rig. Grab soil samples from location S-2 were collected from 10-feet bgs within the impacted area to a depth of 25-feet bgs.

All soil samples were collected by Talon personnel wearing clean nitrile gloves. The soil samples were placed in laboratory provided sample containers and transported to Cardinal Laboratories in Hobbs, New Mexico for analysis of chlorides using method SM4500Cl-B. The complete laboratory report is attached as Appendix II.

### **Analytical Results**

Analytical results received from Cardinal Laboratories are summarized below:

July 20, 11

Samp	le, Depth	Chlorides
S-1	0'	20800 mg/kg
	2'	15200
	4'	14000
	6'	8800
	12'	1360

### December 1, 2011

Samp	ole, Depth	Chlorides
S-1	15'	1730
	25'	192

### **Summary and Conclusion**

- Groundwater in the project vicinity is greater than 250-feet below land surface per the New Mexico State Engineer Database.
- Based upon the results of the laboratory data obtained for this investigation, the vertical of the chloride release have been documented to be 192 mg/kg in the soil sample S-1 at 25-feet bgs.
- Based on the depth to groundwater and the chloride levels detected in the soil at the sample locations, it is unlikely that the chloride impacts identified from this release will not pose a threat to groundwater

### **Proposed Remedial Actions**

- The chloride impacted soil from this release will be excavated to the maximum extent practicable. The excavated soil will be transported to an NMOCD approved solid waste disposal facility.
- Soil samples will be collected for analytical testing from the side walls of the excavated area. The soil samples collected will be submitted to Cardinal Laboratories for analysis of chlorides using method SM4500Cl-B.
- Upon OCD approval of confirmation samples, a 20 Mil liner may be installed into the bottom of the excavated area.
- The excavated area will be backfilled to grade using new material transported from a local borrow pit, contoured to match existing terrain and seeded using an approved seed mixture for the area.
- A final report documenting all field activities and lab reports will be provided to the NMOCD Artesia Office including Form C-141.

If we can provide additional information or be of further assistance please contact our office at 575.746.8768.

Respectfully submitted,

TALON/LPE ·

Mike Stubblefield

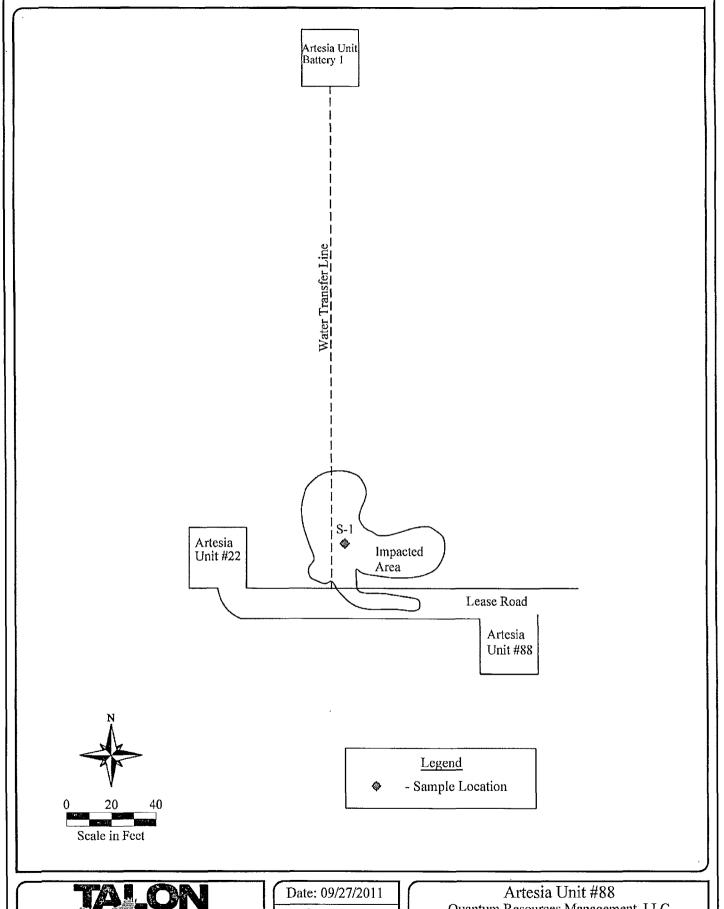
mike Swellfiell

Project Manager

David J. Adkins District Manager

J)

### SITE MAP





Scale: 1" = 40'

Drawn By: TJS

Artesia Unit #88
Quantum Resources Management, LLC
Artesia, Eddy County, New Mexico
Site Plan

# APPENDIX I GROUNDWATER DATA INITIAL C-141



## New Mexico Office of the State Engineer Water Column/Average Depth to Water

(quarters are	1=NW 2	=NE 3=8	W 4=SE)
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		(qu	arters	are	e sma	llest to	largest)	(NAD8	3 UTM in me	ters)	(In	feet)
\$	Sub	•	Q	Q (	Q	, 5	_	- ,		-	Depth D	epth Water
POD Number	basin Us	e County	64	16	4 Se	c Twis	Rng	X	<b>Y</b>	Distance	WellW	/aterColumn
RA 04561	PF	O ED		4	2 26	178	27E	570871	3630142*	8588	250	
RA 09588	DC	M ED		1	2 33	188	28E	576976	3619384*	8889	300	
RA 04048	O	S LE	1	4	4 14	188	27E	570841	3623030*	9710	2096	
									Averag	ge Depth to	Water:	
										Minimum	Depth:	

### Record Count: 3

### UTMNAD83 Radius Search (in meters):

Easting (X): 579187

Northing (Y): 3627994

Radius: 10000

Maximum Depth:

<u>District I</u> 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

### State of New Mexico Energy Minerals and Natural Resources

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

Revised October 10, 2003

Form C-141

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

### Release Notification and Corrective Action

				A COURT		OPERAT	OR	Г	7 Initia	ıl Report	[7]	Final Report	
Name of Co	ompany: (	Quantum Re	sources I	Management, LI			arrett Newton	<u>V_</u>	y min	it reopore		T Mid Ttoport	
				ew Mexico 882		Telephone No.: 575-513-0230							
Facility Nar Transfer Line	ne : Artesia					Facility Type: Water Transfer Line							
Surface Ow	ner : State			Mineral O	)wner	Er Lease No.: API #30-015-31488							
					ATION	OF REI	LEASE		_				
Unit Letter K	Section 35	Township 17S	Range 28E	Feet from the	North/S	South Line	Feet from the	East/We	est Line	County E	ldy		
			Lati	itude 32.7885	0	_Longitud	e104.14735						
				NAT	URE	OF REL							
Type of Rele							Release: 19-221			Recovered:			
Source of Re						7/12/11 9:			Date and 9:30am	Hour of Dis	covery:	7/12/11	
Was Immedi	iate Notice (		Yes [	No Not R	equired	If YES, To Voicemail	Whom? NMOCD/Mike	Bratcher					
By Whom?	Mike Stubb	lefield	·	<del>`</del> ,		Date and I	Hour: 7/12/11 2:3	30 pm					
Was a Water		ched?	Yes ⊠	] No			olume Impacting		course.		•		
If a Waterco	urse was Im	pacted, Descr	ihe Fully	*		<u></u>							
		lem and Reme he pipeline par		n Taken.* ng release. The sa	aturated s	soil was imm	ediately excavate	ed and tran	sported to	o a NMOCI	) approv	ved disposal	
The area aff	ected was e		200 yards	ken.* s due north of the oad measured 43'			ne impacted area	m <b>e</b> asured	approxin	nately 92' lo	ng by 1	8'-61' wide,	
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 federal, state, or local laws and/or regulations.													
		. 1		MARKET AND			OIL CON	ISERV.	ATION	DIVISI	NC		
Signature.	Na.	AL.	De,										
Printed Nan	ne: Garrett	Newton				Approved by District Supervisor:							
Title: Field	Supervisor					Approval Date: Exp			xpiration Date:				
E-mail Add	ress: gnew	ton@pvtnetwo	orks.net			Conditions	of Approval:			Attache	d 🗌		
Date: 7/13	3/11	Phon	e: <b>575-5</b> ]	13-0230									

<sup>\*</sup> Attach Additional Sheets If Necessary

# APPENDIX II LABORATORY RESULTS



July 20, 2011

MIKE STUBBLEFIELD

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ARTESIA UNIT #88

Enclosed are the results of analyses for samples received by the laboratory on 07/19/11 13:00.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021

Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method SW-846 8260

Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005

Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keene

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



### Analytical Results For:

TALON LPE
MIKE STUBBLEFIELD
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:

07/19/2011

Reported:

07/20/2011

Project Name:

ARTESIA UNIT #88

Project Number:

701407.012.01

Project Location:

NONE GIVEN

Sampling Date:

07/18/2011

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S-1 0' (H101496-01)

Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	20800	16.0	07/20/2011	ND	448	112	400	0.00	
Sample ID: S-1 2' (H10:	1496-02)								
Chloride, SM4500Cl-B	mg,	'kg	Analyze	d By: HM					11.12
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15200	16.0	07/20/2011	ND	448	112	400	0.00	
Sample ID: S-1 4' (H10:	1496-03)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	14000	16.0	07/20/2011	ND	448	112	400	0.00	
Sample ID: S-1 6' (H10	1496-04)								
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	В\$	% Recovery	True Value QC	RPD	Qualifier
Chloride	8800	16.0	07/20/2011	ND	448	112	400	0.00	

### Cardinal Laboratories

\*=Accredited Analyte

REASE NOTE: Uability and Dumopes. Cardina's (a)Zity and Cert's suduktive remaily for any darm arrang, whether based in contract or but, shall be finised to the amount paid by client for arranges. All claims, healuring those for nephysicism and any other cause whethouser shall be deemed review infeas made in writing and received by Cardina's within thirty (35) days after completion of the approache sould. In no event shall Certified be 6alve for independ or companyed all certified by the feel companyed or companyed and companyed

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TALON LPE

MIKE STUBBLEFIELD 408 W. TEXAS AVE. ARTESIA NM, 88210

Fax To: (575) 745-8905

Received:

07/19/2011

07/20/2011

Reported: Project Name:

ARTESIA UNIT #88

Project Number: Project Location:

701407.012.01 NONE GIVEN Sampling Date:

07/18/2011

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S-1 12' (H101496-05)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By; HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1360	16.0	07/20/2011	ND	448	112	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Labority and Damages. Cardina's Eablity and clients enduance namedy for any claim arising, whether besed in contract or tord, shall be included to the amount paid by client for analyses. All cleans, including those for nephysions and any other cause whethereon shall be decimal network in the contract paid by cleans within the labority claims and contract paid by cleans and classical by labority and Cardinal be table for including, within thirties and contract in the performance of the services here, index only to the samples Kontrived by Cardinal, instant by the samples Kontrived by Cardinal, instant be reproduced except in No.11 with written approprial of Cardinal Labority cardinal background of Cardinal Labority cardinal background in the performance of the services here. The report cardinal background accept in No.11 with written approprial of Cardinal Labority cardinal background cardinal Labority ca

Celeg & Keene

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Demajos. Carchai's liability and dirent conductive meta-size for any darn arising, whether based in contract or but, shall be finited to the amount paid by client for analysis. All classes, including those for negligence and any other cause whitehouse shall be feeded white middle within fifty (30) days after completed or the approximate senter. In no next shall Castriel be feede or including, without limitation, whitehouse shall be feeded to the performance of the sentence of the sentence because of whitehouse shall possible classes arising out of or related to the performance of the sentence the sentence of the sentence because of whether such classification provided provided and possible classes arising out of or related to the performance of the sentence because the such classes arising out of or related to the performance of the sentence because the such classes arising out of or related to the performance of the sentence because the such classes arising out of or related to the performance of the sentence because the such classes arising out of or related to the performance of the sentence because the such classes arising out of or related to the performance of the sentence of the sentence because the such classes arising out of or related to the performance of the sentence of the sentence

Celey D. Keine

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

### -ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name	Company Name: Joseph 114E					ANALYSIS REQUEST							<del>*** - ; ** ; ** ** ; **</del> ·														
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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2475

#26



December 01, 2011

MIKE STUBBLEFIELD

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ARTESIA UNIT #88

Enclosed are the results of analyses for samples received by the laboratory on 08/16/11 13:15.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021 Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260 Benzene, Toluene, Ethyl Benzene, and Total Xylenes

Method TX 1005 Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



### Analytical Results For:

TALON LPE MIKE STUBBLEFIELD 408 W. TEXAS AVE. ARTESIA NM, 88210

Fax To:

(575) 745-8905

Received:

08/16/2011

Sampling Date:

08/10/2011

Reported:

12/01/2011

Sampling Type:

Soil

Project Name:

ARTESIA UNIT #88

Sampling Condition:

\*\* (See Notes)

Project Number:

701407.012.01

Sample Received By:

Jodi Henson

Project Location:

K-35-17S-28E

### Sample ID: S - 1, 15' (H101721-02)

Chloride, SM4500CI-B	mg	mg/kg		d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1730	16.0	08/17/2011	ND	416	104	400	0.00	

### Sample ID: S - 1, 25' (H101721-03)

Chloride, SM4500CI-B	SM4500Cl-B mg/kg			d By: AP					_
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	08/17/2011	, ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE Liability and Damages Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsever shall be deemed waved unless made in writing and recovered by Cardinal within thirty (30) days after completion of the applicable service. In no event shall be deaded be labele for nodehal or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiance, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratones.

Celey & Keine

Celey D. Keene, Lab Director/Quality Manager



### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE Lability and Damages Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its substances, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratones.

Celeg & Keine



### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name	Talon/LPE mike stubblefield W. Texas Ave		BILL TO ANALYSIS REQUEST									
Project Manage	nike stubblefield		P.O. #:									
Address 408	W. Texas Ave		Company: Talonlife	25								
City: Artes	ia) State: NN	7Zip: 88210	Attn:									
Phone # 575	-746-8768 FAX#:575	-746-8905	Address:									
Project #: 70/	407.012.01 Project Owne	Quantum	City:	3								
Project Name:	State: NN -746-8768 Fax #:575 407.012.01 Project Owner Artesia Unit #	88	State: Zip:									
Project Location	K-35-175-38E		Phone #:									
Sampler Name:	Miks Stubblefeels	(	Fax #:									
FOR LAS USE ONLY		MATRIX	PRESERV SAMPLING									
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Lab I.D.	Sample I.D.	WAT ATER	ا با ان	12								
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H101721	1.	(G)RAB OR (C)OO # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL	OTHER: ACIDIBASE: ICE/COOL OTHER: ALVO ALVO ALVO ALVO ALVO ALVO ALVO ALVO	ME THILLIAN								
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rifiliates or threesesors mion	Minel be liable for inciriental or consequental demogra, includin 9 out of or related to the performence of services hereunder by	mile date tell advise of whather such claim	is based upon any of the above stated reasons or	elhervise.								
Relinquished By	8/16/11	Received By:	Cart I	ne Result: ☐ Yes ☐ No Add'i Phone #: Result: ☐ Yes ☐ No Add'i Fax #:								
Mile Gullet	Al Fina	Simherly	M.Wilson *	ARKS: 10-TD changed as meckin Glistin								
Relinguished By	Date / 11	Received By:	*	Sample ID changed as per kim. 9/13/11 Ch								
Inhor	mulling This	John M.	2									
Delivered by	(Circle One)	Sample Condit	ION CHECKED BY:									
Sampler - UPS	- Bus - Other:	Cool Intact  Yes G Yes  No G No	s (taltina)									
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476