

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 96850	4. Contact Name: Karolina Blaney	Complete the Attachment Checklist OP OGCC
2. Name of Operator: Williams Production RMT	Phone: 970 683 2295	
3. Address: 1058 County Road 215	Fax: 970 285 9573	
City: Parachute State: CO Zip: 81635		
5. API Number: 05-045-06586	OGCC Facility ID Number: 2606768	Survey Plat
6. Well/Facility Name:	7. Well/Facility Number: DOE 1-W-28	Directional Survey
8. Location (Qtr, Sec, Twp, Rng, Meridian): SWNE 528 T6S R95W 6PM		Surface Expt Diagram
9. County: Garfield	10. Field Name: Parachute	Technical Info Page
11. Federal, Indian or State Lease Number:		Other

General Notice

☐ CHANGE OF LOCATION: Attach New Survey Plat (a change of surface strip is substantive and requires a new permit)

Change of Surface Footage from Exterior Section Lines:	FWL/FSL	FSL/FW
Change of Surface Footage to Exterior Section Lines:		
Change of Bottomhole Footage from Exterior Section Lines:		
Change of Bottomhole Footage to Exterior Section Lines:		

Bottomhole location Qtr, Sec, Twp, Rng, Mer: _____

Latitude: _____ Distance to nearest property line: _____ Distance to nearest bldg, public rd, utility or RR: _____

Longitude: _____ Distance to nearest lease line: _____ Is location in a High Density Area (rule 603b)? Yes/No: _____

Ground Elevation: _____ Distance to nearest well same formation: _____ Surface owner consultation date: _____

GPS DATA: _____

Date of Measurement: _____ PDOP Reading: _____ Instrument Operator's Name: _____

☐ CHANGE SPACING UNIT: Formation: _____ Formation Code: _____ Spacing order number: _____ Unit Acreage: _____ Unit configuration: _____

☐ Remove from surface bond: Signed surface use agreement attached: _____

☐ CHANGE OF OPERATOR (prior to drilling): Effective Date: _____ Plugging Bond: ☐ Blanket ☐ Individual

☐ CHANGE WELL NAME: From: _____ To: _____ Effective Date: _____

☐ ABANDONED LOCATION: Was location ever built? ☐ Yes ☐ No Is site ready for inspection? ☐ Yes ☐ No Date Ready for inspection: _____

☐ NOTICE OF CONTINUED SHUT IN STATUS: Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? ☐ Yes ☐ No MIT required if shut in longer than two years. Date of last MIT: _____

☐ SPUD DATE: _____ ☐ REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)

☐ SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK: Method used: _____ Cementing tool setting/perf depth: _____ Cement volume: _____ Cement top: _____ Cement bottom: _____ Date: _____

☐ RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately: _____ ☐ Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

☒ Notice of Intent: Approximate Start Date: 4/18/2011 ☐ Report of Work Done: Date Work Completed: _____

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flame	<input checked="" type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other: _____	

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Karolina Blaney Date: 4/15/2011 Email: Karolina.Blaney@Williams.com
Print Name: Karolina Blaney Title: Environmental Specialist

OGCC Approved: [Signature] Title: FOR Date: 04/15/2011

CONDITIONS OF APPROVAL, IF ANY:

A Fischer
E Supervisor

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: _____ API Number: _____

2. Name of Operator: _____ OGCC Facility ID # _____

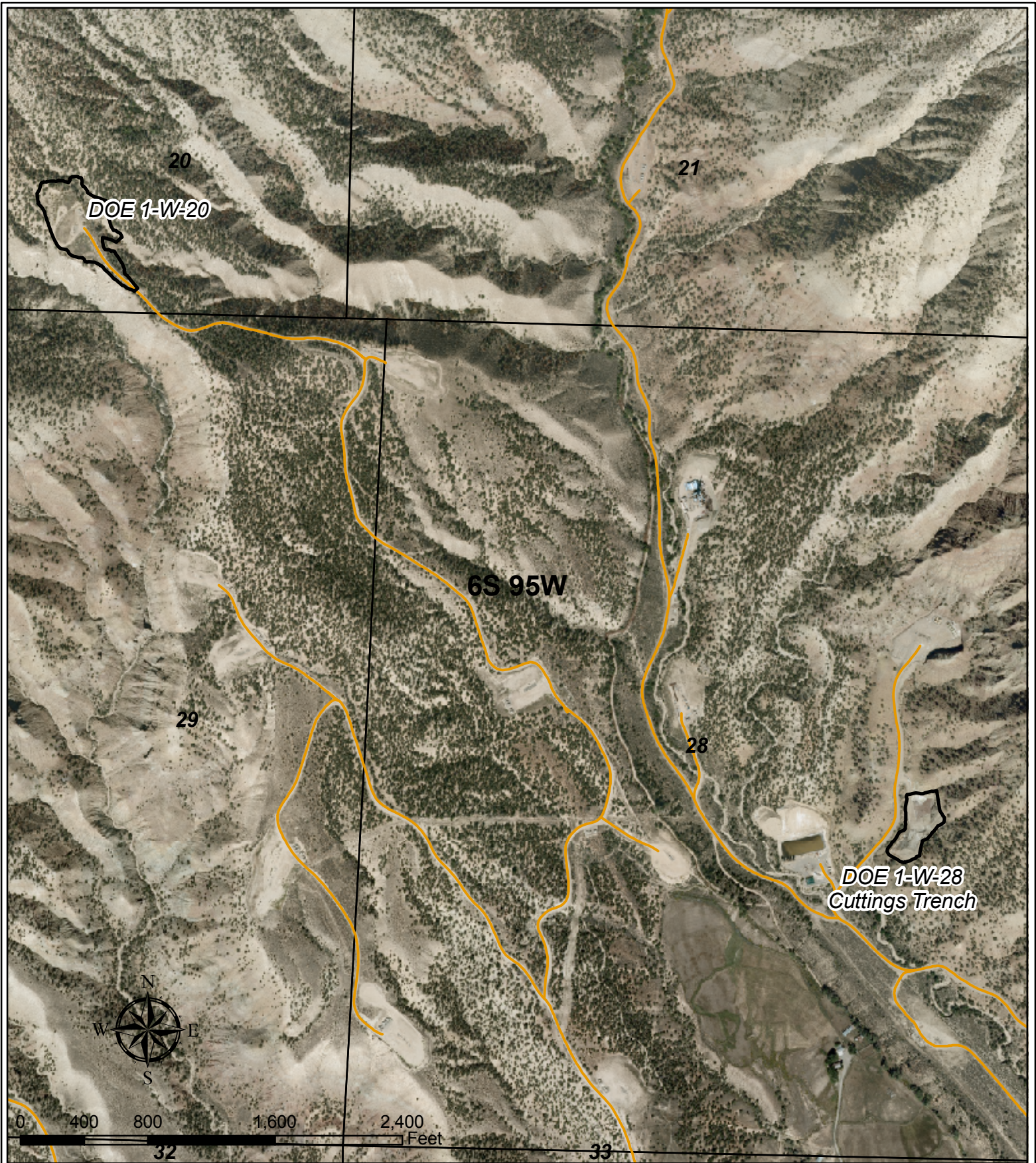
3. Well/Facility Name: _____ Well/Facility Number: _____

4. Location (QtrQtr, Sec, Twp, Rng, Meridian): _____



This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5.

DESCRIBE PROPOSED OR COMPLETED OPERATIONS



Legend

-  Existing Pad
-  Existing Road

Attachment A



Report of Analysis

Client Sample ID:	DOE 1-W-28-B-1	Date Sampled:	04/05/10
Lab Sample ID:	T50475-6	Date Received:	04/07/10
Matrix:	SO - Soil	Percent Solids:	84.5
Project:	PA11-32,DOE 1-W-28 Background		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	8.9	0.65	0.13	mg/kg	1	04/12/10	04/13/10 NS	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA4663
(2) Prep QC Batch: MP11519

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DOE 1-W-28-B-2	Date Sampled:	04/05/10
Lab Sample ID:	T50475-7	Date Received:	04/07/10
Matrix:	SO - Soil	Percent Solids:	86.3
Project:	PA11-32,DOE 1-W-28 Background		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	9.1	0.62	0.12	mg/kg	1	04/12/10	04/13/10 NS	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA4663
(2) Prep QC Batch: MP11519

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DOE 1-W-28-B-3	Date Sampled:	04/05/10
Lab Sample ID:	T50475-8	Date Received:	04/07/10
Matrix:	SO - Soil	Percent Solids:	91.7
Project:	PA11-32,DOE 1-W-28 Background		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.0	0.64	0.13	mg/kg	1	04/12/10	04/13/10 NS	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA4663
(2) Prep QC Batch: MP11519

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DOE 1-W-28-B-4	Date Sampled:	04/05/10
Lab Sample ID:	T50475-9	Date Received:	04/07/10
Matrix:	SO - Soil	Percent Solids:	88.9
Project:	PA11-32,DOE 1-W-28 Background		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.7	0.60	0.12	mg/kg	1	04/12/10	04/13/10 NS	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA4663
(2) Prep QC Batch: MP11519

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DOE 1-W-28-B-5	Date Sampled:	04/05/10
Lab Sample ID:	T50475-10	Date Received:	04/07/10
Matrix:	SO - Soil	Percent Solids:	90.6
Project:	PA11-32,DOE 1-W-28 Background		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	4.9	0.66	0.13	mg/kg	1	04/09/10	04/09/10 NS	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA4653
(2) Prep QC Batch: MP11497

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL



Legend

- Sample Location
- Existing Road
- Existing Pad
Limit of Disturbance

DOE 1-W-28
Arsenic Background Sample Location Map
T6S R95W, Section 28



May 18, 2010



04/14/11

Technical Report for

Williams Production RMT Company

DOE 1-W-28 Cuttings

Accutest Job Number: T73089

Sampling Date: 04/08/11

Report to:

Williams Production RMT Company
1058 County Road 215
Parachute, CO 81635
karolina.blaney@williams.com

ATTN: Karolina Blaney

Total number of pages in report: **49**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-10-3) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

Williams Production RMT Company
DOE 1-W-28 Cuttings

Job No: T73089

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
T73089-1	04/08/11	15:30	04/09/11	SO	Soil	DOE 1-W-28
T73089-1A	04/08/11	15:30	04/09/11	SO	Soil	DOE 1-W-28

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	DOE 1-W-28	Date Sampled:	04/08/11
Lab Sample ID:	T73089-1	Date Received:	04/09/11
Matrix:	SO - Soil	Percent Solids:	84.3
Method:	SW846 8260B		
Project:	DOE 1-W-28 Cuttings		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z015556.D	1	04/12/11	FI	n/a	n/a	VZ3178
Run #2							

	Initial Weight	Final Volume
Run #1	5.56 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.3	4.3	0.75	ug/kg	
108-88-3	Toluene	ND	4.3	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	4.3	0.96	ug/kg	
1330-20-7	Xylene (total)	3.6	13	2.2	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-121%
2037-26-5	Toluene-D8	128%		76-132%
460-00-4	4-Bromofluorobenzene	105%		73-165%
17060-07-0	1,2-Dichloroethane-D4	88%		57-122%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DOE 1-W-28		
Lab Sample ID:	T73089-1	Date Sampled:	04/08/11
Matrix:	SO - Soil	Date Received:	04/09/11
Method:	SW846 8270C BY SIM SW846 3550B	Percent Solids:	84.3
Project:	DOE 1-W-28 Cuttings		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V4263.D	1	04/12/11	AM	04/11/11	OP18100	EV255
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	7.8	1.3	ug/kg	
208-96-8	Acenaphthylene	ND	7.8	2.7	ug/kg	
120-12-7	Anthracene	ND	7.8	1.5	ug/kg	
56-55-3	Benzo(a)anthracene	ND	7.8	1.2	ug/kg	
50-32-8	Benzo(a)pyrene	ND	7.8	4.2	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	7.8	4.1	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	7.8	7.8	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	7.8	5.1	ug/kg	
218-01-9	Chrysene	4.0	7.8	1.9	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	7.8	7.5	ug/kg	
206-44-0	Fluoranthene	ND	7.8	1.7	ug/kg	
86-73-7	Fluorene	7.2	7.8	2.8	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	7.8	5.9	ug/kg	
90-12-0	1-Methylnaphthalene	13.1	7.8	1.4	ug/kg	
91-57-6	2-Methylnaphthalene	36.1	7.8	1.4	ug/kg	
91-20-3	Naphthalene	25.5	7.8	1.2	ug/kg	
85-01-8	Phenanthrene	12.6	7.8	1.1	ug/kg	
129-00-0	Pyrene	ND	7.8	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	100%		10-127%
321-60-8	2-Fluorobiphenyl	80%		11-133%
1718-51-0	Terphenyl-d14	140%		15-187%

ND = Not detected MDL - Method Detection Limit

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J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	DOE 1-W-28	
Lab Sample ID:	T73089-1	Date Sampled: 04/08/11
Matrix:	SO - Soil	Date Received: 04/09/11
Method:	SW846 8015	Percent Solids: 84.3
Project:	DOE 1-W-28 Cuttings	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB0006716.D	1	04/11/11	AT	n/a	n/a	GBB326
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.21 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	5.11	6.6	0.40	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		46-127%
98-08-8	aaa-Trifluorotoluene	103%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	DOE 1-W-28		
Lab Sample ID:	T73089-1	Date Sampled:	04/08/11
Matrix:	SO - Soil	Date Received:	04/09/11
Method:	SW846 8015 M SW846 3550B	Percent Solids:	84.3
Project:	DOE 1-W-28 Cuttings		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC221854.D	1	04/12/11	HD	04/11/11	OP18106	GCC1180
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	20.4	3.9	3.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	76%		33-115%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DOE 1-W-28

Lab Sample ID: T73089-1

Matrix: SO - Soil

Date Sampled: 04/08/11

Date Received: 04/09/11

Percent Solids: 84.3

Project: DOE 1-W-28 Cuttings

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	6.5	0.62	0.10	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Barium	4840	62	0.42	mg/kg	5	04/13/11	04/14/11 TW	SW846 6010B ³	SW846 3050B ⁵
Cadmium	0.68	0.31	0.017	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Chromium	18.5	0.62	0.028	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Copper	19.3	1.5	0.068	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Lead	17.9	0.62	0.062	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Mercury	0.059	0.018	0.0073	mg/kg	1	04/11/11	04/11/11 CN	SW846 7471A ¹	SW846 7471A ⁴
Nickel	26.2	2.5	0.070	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Selenium	0.61 J	0.62	0.18	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Silver	0.071 U	0.62	0.071	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵
Zinc	74.3	1.2	0.10	mg/kg	1	04/13/11	04/13/11 TW	SW846 6010B ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA5628

(2) Instrument QC Batch: MA5636

(3) Instrument QC Batch: MA5638

(4) Prep QC Batch: MP14422

(5) Prep QC Batch: MP14447

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result < MDL

J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DOE 1-W-28	Date Sampled:	04/08/11
Lab Sample ID:	T73089-1	Date Received:	04/09/11
Matrix:	SO - Soil	Percent Solids:	84.3
Project:	DOE 1-W-28 Cuttings		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chloride	212	5.9	2.6	mg/kg	1	04/13/11 12:06	CV	SM21 4500-CL E,MOD.
Chromium, Hexavalent	1.3 J	2.3	0.57	mg/kg	1	04/14/11 10:00	KD	SW846 3060/7196A
Chromium, Trivalent ^a	17.2	2.9	0.60	mg/kg	1	04/14/11 10:00	KD	SW846 6010/7196A M
Solids, Percent	84.3			%	1	04/11/11	ID	SM 2540 G
Specific Conductivity	3990	1.0		umhos/cm	1	04/13/11 10:00	KD	EPA 120.1
pH	9.50			su	1	04/12/11	MC	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

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Report of Analysis

Client Sample ID:	DOE 1-W-28	Date Sampled:	04/08/11
Lab Sample ID:	T73089-1A	Date Received:	04/09/11
Matrix:	SO - Soil	Percent Solids:	84.3
Project:	DOE 1-W-28 Cuttings		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analized By	Method	Prep Method
Calcium	404	25	0.12	mg/l	5	04/14/11	04/14/11 TW	SW846 6010B ¹	LADNR 29B ²
Magnesium	15.0 J	25	0.040	mg/l	5	04/14/11	04/14/11 TW	SW846 6010B ¹	LADNR 29B ²
Sodium	2080	25	0.52	mg/l	5	04/14/11	04/14/11 TW	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA5638
(2) Prep QC Batch: MP14454

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DOE 1-W-28	Date Sampled:	04/08/11
Lab Sample ID:	T73089-1A	Date Received:	04/09/11
Matrix:	SO - Soil	Percent Solids:	84.3
Project:	DOE 1-W-28 Cuttings		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	27.6		ratio	1	04/14/11 13:17	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T73089

Client / Reporting Information	Project Information	Requested Analyses	Matrix Codes
Company Name Williams Production Street Address 1058 City Rd 215 City Parachute State CO Zip 81635 Project Contact Karolina Blaney Email Karolina.Blaney@Williams.com Phone # 970 683 2295 / 970 285 9573 Sampler(s) Name(s) Blaney	Project Name DOE 1-W-28 cuttings Street Billing Information (If different from Report to) Company Name Street Address City State Zip Attention: Karolina Blaney Project Manager	Requested Analyses (910-1 attached)	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NH ₄ OH	ZnAcO ₃	HPSCl ₄	HPSCl ₄	DI Water	MECH	TSP	NaHSO ₄	Biore	OTHER	LAB USE ONLY
1	DOE 1-W-28	4/8/11	3:30	KB	SO	2												X

Turnaround Time (Business days)	Approved By (Accutest PM): / Date:	Data Deliverable Information	Comments / Special Instructions
<input type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input checked="" type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink	<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary	<input type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other	

Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
Blaney	4/8/11	1				2	
FedEx	4/9/11 1100	3				4	
		5					

Custody Seal # ☐ Intact ☐ Not Intact Preserved where applicable ☐ On Ice ☒ Cooler Temp. 4.5°C

T73089: Chain of Custody

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SAMPLE INSPECTION FORM

Accutest Job Number: T73089 Client: Williams Production Date/Time Received: 4/9/11 1100
 # of Coolers Received: 1 Thermometer #: IR Gun 04 Temperature Adjustment Factor: 0

Cooler Temperatures (initial/adjusted): #1: 4.5°C #2: _____ #3: _____ #4: _____ #5: _____
 #6: _____ #7: _____ #8: _____ #9: _____ #10: _____ #11: _____ #12: _____

Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

COOLER INFORMATION

- ☐ Custody seal missing or not intact
- ☐ Temperature criteria not met
- ☐ Wet ice received in cooler

CHAIN OF CUSTODY

- ☐ Chain of Custody not received
- ☐ Sample D/T unclear or missing
- ☐ Analyses unclear or missing
- ☐ COC not properly executed

SAMPLE INFORMATION

- ☐ Sample containers received broken
- ☐ VOC vials have headspace
- ☐ Sample labels missing or illegible
- ☐ ID on COC does not match label(s)
- ☐ D/T on COC does not match label(s)
- ☐ Sample/Bottles rcvd but no analysis on COC
- ☐ Sample listed on COC, but not received
- ☐ Bottles missing for requested analysis
- ☐ Insufficient volume for analysis
- ☐ Sample received improperly preserved

TRIP BLANK INFORMATION

- ☐ Trip Blank on COC but not received
- ☐ Trip Blank received but not on COC
- ☐ Trip Blank not intact
- ☐ Received Water Trip Blank
- ☐ Received Soil TB

Number of Encores? _____
 Number of 5035 lds? _____
 Number of lab-filtered metals? _____

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: Daniel Hucklester 4/9/11

INFORMATION AND SAMPLE LABELING VERIFIED BY: _____

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

\\mwalker\formisamplemanagement SM023 Revised 9/11/10

T73089: Chain of Custody

Page 2 of 3

JOB #: T73089 DATE/TIME RECEIVED: 4/9/11 1100
CLIENT: Williams Production INITIALS: DLA

[illegible]

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 ewd

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GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ3178-MB	Z015545.D	1	04/12/11	FI	n/a	n/a	VZ3178

The QC reported here applies to the following samples: Method: SW846 8260B

T73089-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	4.0	0.90	ug/kg	
108-88-3	Toluene	ND	4.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	12	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	103% 70-121%
2037-26-5	Toluene-D8	128% 76-132%
460-00-4	4-Bromofluorobenzene	97% 73-165%
17060-07-0	1,2-Dichloroethane-D4	92% 57-122%

Blank Spike Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ3178-BS	Z015543.D	1	04/12/11	FI	n/a	n/a	VZ3178

The QC reported here applies to the following samples: Method: SW846 8260B

T73089-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	45.5	91	70-114
100-41-4	Ethylbenzene	50	44.1	88	60-119
108-88-3	Toluene	50	50.9	102	68-115
1330-20-7	Xylene (total)	150	133	89	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-121%
2037-26-5	Toluene-D8	124%	76-132%
460-00-4	4-Bromofluorobenzene	98%	73-165%
17060-07-0	1,2-Dichloroethane-D4	95%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T73089

Account: WPRMTCOP Williams Production RMT Company

Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T73040-8MS	Z015547.D	1	04/12/11	FI	n/a	n/a	VZ3178
T73040-8MSD	Z015548.D	1	04/12/11	FI	n/a	n/a	VZ3178
T73040-8	Z015546.D	1	04/12/11	FI	n/a	n/a	VZ3178

The QC reported here applies to the following samples:

Method: SW846 8260B

T73089-1

CAS No.	Compound	T73040-8 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4.7 U		60.5	51.7	85	50.2	82	3	70-114/38
100-41-4	Ethylbenzene	4.7 U		60.5	49.8	82	49.2	80	1	60-119/40
108-88-3	Toluene	4.7 U		60.5	55.2	91	57.0	93	3	68-115/38
1330-20-7	Xylene (total)	14 U		182	147	81	146	80	1	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T73040-8	Limits
1868-53-7	Dibromofluoromethane	97%	94%	103%	70-121%
2037-26-5	Toluene-D8	118%	119%	130%	76-132%
460-00-4	4-Bromofluorobenzene	96%	96%	97%	73-165%
17060-07-0	1,2-Dichloroethane-D4	86%	85%	93%	57-122%

GC/MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

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Job Number: T73089

Account: WPRMTCOP Williams Production RMT Company

Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18100-MB	V4262.D	1	04/12/11	AM	04/11/11	OP18100	EV255

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T73089-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
4165-60-0	Nitrobenzene-d5	80%	10-127%
321-60-8	2-Fluorobiphenyl	66%	11-133%
1718-51-0	Terphenyl-d14	135%	15-187%

Blank Spike Summary

Page 1 of 1

Job Number: T73089

Account: WPRMTCOP Williams Production RMT Company

Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18100-BS	V4255.D	1	04/11/11	AM	04/11/11	OP18100	EV254

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T73089-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	163	98	18-118
208-96-8	Acenaphthylene	167	148	89	35-125
120-12-7	Anthracene	167	144	86	24-116
56-55-3	Benzo(a)anthracene	167	156	94	32-132
50-32-8	Benzo(a)pyrene	167	167	100	36-130
205-99-2	Benzo(b)fluoranthene	167	162	97	35-134
191-24-2	Benzo(g,h,i)perylene	167	156	94	18-149
207-08-9	Benzo(k)fluoranthene	167	205	123	30-131
218-01-9	Chrysene	167	174	104	37-124
53-70-3	Dibenzo(a,h)anthracene	167	172	103	23-150
206-44-0	Fluoranthene	167	170	102	28-118
86-73-7	Fluorene	167	148	89	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	170	102	18-150
90-12-0	1-Methylnaphthalene	167	176	106	10-128
91-57-6	2-Methylnaphthalene	167	174	104	28-113
91-20-3	Naphthalene	167	166	100	31-106
85-01-8	Phenanthrene	167	185	111	37-112
129-00-0	Pyrene	167	166	100	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	112%	10-127%
321-60-8	2-Fluorobiphenyl	83%	11-133%
1718-51-0	Terphenyl-d14	114%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: T73089

Account: WPRMTCOP Williams Production RMT Company

Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18100-MS	V4257.D	1	04/11/11	AM	04/11/11	OP18100	EV254
OP18100-MSD	V4258.D	1	04/11/11	AM	04/11/11	OP18100	EV254
T72206-14R	V4256.D	1	04/11/11	AM	04/11/11	OP18100	EV254

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T73089-1

CAS No.	Compound	T72206-14R		Spike	MS	MS	MSD	MSD	RPD	Limits
		ug/kg	Q	ug/kg	ug/kg	%	ug/kg	%		Rec/RPD
83-32-9	Acenaphthene	ND		201	193	96	182	91	6	10-153/80
208-96-8	Acenaphthylene	ND		201	176	88	153	76	14	10-144/71
120-12-7	Anthracene	ND		201	235	117	212	106	10	10-176/57
56-55-3	Benzo(a)anthracene	ND		201	185	92	170	85	8	10-174/73
50-32-8	Benzo(a)pyrene	ND		201	198	99	187	93	6	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		201	190	95	178	89	7	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		201	197	98	193	96	2	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		201	268	134	241	120	11	10-170/94
218-01-9	Chrysene	ND		201	212	106	196	98	8	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		201	216	108	210	105	3	10-192/74
206-44-0	Fluoranthene	ND		201	224	112	204	102	9	10-141/73
86-73-7	Fluorene	ND		201	172	86	163	81	5	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		201	211	105	208	104	1	10-150/73
90-12-0	1-Methylnaphthalene	ND		201	204	102	184	92	10	10-154/82
91-57-6	2-Methylnaphthalene	ND		201	199	99	187	93	6	10-171/75
91-20-3	Naphthalene	ND		201	190	95	176	88	8	10-138/82
85-01-8	Phenanthrene	ND		201	241	120	216	108	11	10-191/77
129-00-0	Pyrene	ND		201	225	112	186	93	19	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T72206-14R	Limits
4165-60-0	Nitrobenzene-d5	100%	95%	106%	10-127%
321-60-8	2-Fluorobiphenyl	81%	73%	70%	11-133%
1718-51-0	Terphenyl-d14	127%	115%	119%	15-187%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBB326-MB	BB0006714.DI		04/11/11	AT	n/a	n/a	GBB326

The QC reported here applies to the following samples: Method: SW846 8015

T73089-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	97%	46-127%
98-08-8	aaa-Trifluorotoluene	105%	44-120%

Blank Spike Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBB326-BS	BB0006711.DI		04/11/11	AT	n/a	n/a	GBB326

The QC reported here applies to the following samples: Method: SW846 8015

T73089-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.392	98	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	101%	46-127%
98-08-8	aaa-Trifluorotoluene	111%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T73035-1MS	BB0006717.DI		04/11/11	AT	n/a	n/a	GBB326
T73035-1MSD	BB0006718.DI		04/11/11	AT	n/a	n/a	GBB326
T73035-1	BB0006715.DI		04/11/11	AT	n/a	n/a	GBB326

The QC reported here applies to the following samples: Method: SW846 8015

T73089-1

CAS No.	Compound	T73035-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	5.94	J	27.9	33.9	100	33.7	99	1	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T73035-1	Limits
460-00-4	4-Bromofluorobenzene	115%	113%	111%	46-127%
98-08-8	aaa-Trifluorotoluene	112%	113%	104%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18106-MB	CC221845.D	1	04/12/11	HD	04/11/11	OP18106	GCC1180

The QC reported here applies to the following samples: Method: SW846 8015 M

T73089-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	3.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	73% 33-115%

Blank Spike Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18106-BS	CC221846.D	1	04/12/11	HD	04/11/11	OP18106	GCC1180

The QC reported here applies to the following samples: Method: SW846 8015 M

T73089-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.2	21.5	65	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	64%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T73089
Account: WPRMTCOP Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18106-MS	CC221852.D	1	04/12/11	HD	04/11/11	OP18106	GCC1180
OP18106-MSD	CC221853.D	1	04/12/11	HD	04/11/11	OP18106	GCC1180
T73035-1	CC221855.D	1	04/12/11	HD	04/11/11	OP18106	GCC1180

The QC reported here applies to the following samples: Method: SW846 8015 M

T73089-1

CAS No.	Compound	T73035-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	35.5		40.9	61.0	62	64.9	72	6	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T73035-1	Limits
84-15-1	o-Terphenyl	84%	73%	80%	33-115%

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14422
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 04/11/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.017	.0042	.0067	0.00062	<0.017

Associated samples MP14422: T73089-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14422
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 04/11/11 04/11/11

Metal	T73023-2 Original	DUP	RPD	QC Limits	T73023-2 Original MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.014	0.013	7.4	0-20	0.014 0.32	0.303	101.1	75-125

Associated samples MP14422: T73089-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14422
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 04/11/11

Metal	T73023-2 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.014	0.33	0.296	106.8	3.1	

Associated samples MP14422: T73089-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14422
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 04/11/11

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
-------	---------------	----------------------------	--------------

Mercury	7.3	7.34	99.5	72-128
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Associated samples MP14422: T73089-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

8.1.3

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BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14447
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 04/13/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.41	.73		
Antimony	0.50	.05	.085		
Arsenic	0.50	.085	.085	-0.018	<0.50
Barium	10	.049	.069	0.074	<10
Beryllium	0.25	.0028	.0055		
Boron	5.0	.07	.17		
Cadmium	0.25	.0055	.014	0.0035	<0.25
Calcium	250	.37	1.3		
Chromium	0.50	.012	.023	0.0085	<0.50
Cobalt	2.5	.0075	.03		
Copper	1.3	.056	.056	0.12	<1.3
Iron	5.0	.057	1.1		
Lead	0.50	.05	.05	-0.0025	<0.50
Lithium	15	.1			
Magnesium	250	.38	1.3		
Manganese	0.75	.0027	.037		
Molybdenum	0.50	.02	.025		
Nickel	2.0	.035	.057	0.00050	<2.0
Potassium	250	2	10		
Selenium	0.50	.077	.14	0.016	<0.50
Silver	0.50	.058	.058	0.0075	<0.50
Sodium	250	.46	1.6		
Strontium	1.0	.0031	.059		
Thallium	0.50	.034	.04		
Tin	1.0	.035	.035		
Titanium	1.0	.015	.029		
Vanadium	2.5	.015	.034		
Zinc	1.0	.026	.084	0.52	<1.0

Associated samples MP14447: T73089-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14447
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

04/13/11

04/13/11

Metal	T73271-2 Original DUP		RPD	QC Limits	T73271-2 Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony	anr								
Arsenic	2.0	2.0	0.0	0-20	2.0	29.6	27.9	99.1	80-120
Barium	150	57.2	89.6*(a)	0-20	150	84.8	27.9	-234.1(b)	80-120
Beryllium	anr								
Boron									
Cadmium	0.13	0.13	0.0	0-20	0.13	25.2	27.9	90.0	80-120
Calcium									
Chromium	22.7	24.0	5.6	0-20	22.7	51.1	27.9	102.0	80-120
Cobalt									
Copper	10.7	13.8	25.3*(a)	0-20	10.7	40.5	27.9	107.0	80-120
Iron									
Lead	11.5	10.7	7.2	0-20	11.5	37.3	27.9	92.6	80-120
Lithium									
Magnesium									
Manganese									
Molybdenum	anr								
Nickel	9.2	9.7	5.3	0-20	9.2	37.8	27.9	102.7	80-120
Potassium	anr								
Selenium	0.34	0.32	6.1	0-20	0.34	27.5	27.9	97.5	80-120
Silver	0.0	0.0	NC	0-20	0.0	25.0	27.9	89.8	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	110	88.6	21.6*(a)	0-20	110	115	27.9	18.0N(c)	80-120

Associated samples MP14447: T73089-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible sample nonhomogeneity.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

(c) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14447
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 04/13/11

Metal	T73271-2 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	2.0	24.9	27.7	82.8	17.2	20
Barium	150	80.9	27.7	-249.8(a)	4.7	20
Beryllium	anr					
Boron						
Cadmium	0.13	24.7	27.7	88.8	2.0	20
Calcium						
Chromium	22.7	40.7	27.7	65.1N(b)	22.7 (c)	20
Cobalt						
Copper	10.7	36.1	27.7	91.8	11.5	20
Iron						
Lead	11.5	38.0	27.7	95.8	1.9	20
Lithium						
Magnesium						
Manganese						
Molybdenum	anr					
Nickel	9.2	35.3	27.7	94.4	6.8	20
Potassium	anr					
Selenium	0.34	23.6	27.7	84.1	15.3	20
Silver	0.0	24.6	27.7	88.9	1.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	110	117	27.7	25.3N(b)	1.7	20

Associated samples MP14447: T73089-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

(c) High RPD due to possible matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14447
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 04/13/11

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	141	158	89.2	82-118
Barium	326	348	93.7	81-119
Beryllium	anr			
Boron				
Cadmium	165	187	88.2	82-118
Calcium				
Chromium	82.4	89.5	92.1	79-121
Cobalt				
Copper	118	129	91.5	84-117
Iron				
Lead	177	172	102.9	79-120
Lithium				
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	105	99	106.1	81-119
Potassium	anr			
Selenium	134	148	90.5	78-121
Silver	63.0	66	95.5	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	344	394	87.3	80-119

Associated samples MP14447: T73089-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

8.2.3
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SERIAL DILUTION RESULTS SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14447
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 04/13/11

Metal	T73271-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	29.0	30.7	6.2	0-10
Barium	2170	2290	5.7	0-10
Beryllium	anr			
Boron				
Cadmium	1.83	1.37	25.1 (a)	0-10
Calcium				
Chromium	327	350	7.1	0-10
Cobalt				
Copper	154	160	3.6	0-10
Iron				
Lead	165	168	1.7	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	132	128	3.1	0-10
Potassium	anr			
Selenium	4.91	0.00	100.0(a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1590	1740	9.4	0-10

Associated samples MP14447: T73089-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14454
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 04/14/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12		
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1		
Barium	200	.97	3.4		
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09		
Calcium	5000	7.4	25	341	<5000
Chromium	10	.23	.27		
Cobalt	50	.15	.22		
Copper	25	1.1	5.9		
Iron	100	1.1	23		
Lead	3.0	1	1.8		
Lithium	300	2	2		
Magnesium	5000	7.7	7.9	58.7	<5000
Manganese	15	.054	1.9		
Molybdenum	10	.39	.2		
Nickel	40	.69	1.4		
Potassium	5000	39	45		
Selenium	5.0	1.5	.98		
Silver	10	1.2	.24		
Sodium	5000	9.2	100	450	<5000
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5		

Associated samples MP14454: T73089-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14454
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
 Units: ug/l

Prep Date: 04/14/11

Metal	T73089-1A Original DUP		RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	404000	435000	7.4	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	15000	15600	3.9	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	2080000	2200000	5.6	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP14454: T73089-1A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T73089
 Account: WPRMTCOP - Williams Production RMT Company
 Project: DOE 1-W-28 Cuttings

QC Batch ID: MP14454
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
 Units: ug/l

Prep Date: 04/14/11

Metal	T73089-1A			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	404000	428000	5.8	0-10	
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	15000	17000	13.9*(a)	0-10	
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium	2080000	2220000	6.6	0-10	
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP14454: T73089-1A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP12518/GN30250	5.0	2.5	mg/kg	100	101	101.0	80-120%
Chromium, Hexavalent	GN30292	2.0	0.0	mg/kg	40	39.4	98.5	80-120%
Specific Conductivity	GN30238	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN30238: T73089-1
Batch GN30292: T73089-1
Batch GP12518: T73089-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chloride	GP12518/GN30250	T72935-1	mg/kg	6020	5990	0.5	0-20%
Chromium, Hexavalent	GN30292	T73089-1	mg/kg	1.3	1.2	4.9	0-20%
Solids, Percent	GN30183	T73054-1	%	87.4	87.4	0.0	0-5%
Specific Conductivity	GN30238	T72967-1	umhos/cm	835	830	0.6	0-20%
pH	GN30195	T67080-1	su	6.91	6.91	0.0	0-20%

Associated Samples:

Batch GN30183: T73089-1
Batch GN30195: T73089-1
Batch GN30238: T73089-1
Batch GN30292: T73089-1
Batch GP12518: T73089-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T73089
Account: WPRMTCOP - Williams Production RMT Company
Project: DOE 1-W-28 Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP12518/GN30250	T72935-1	mg/kg	6020	10700	16400	97.0	75-125%
Chromium, Hexavalent	GN30292	T73089-1	mg/kg	1.3	47	44.2	91.0	75-125%

Associated Samples:

Batch GN30292: T73089-1

Batch GP12518: T73089-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits