

FORM  
27  
Rev 6/99

State of Colorado  
Oil and Gas Conservation Commission



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

#7362

RECEIVED

FOR OGCC USE ONLY

SEP 16 2011

OGCC

OGCC Employee

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No:

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Land Treatment for soil

OGCC Operator Number: 10292	Contact Name and Telephone:
Name of Operator: Three Forks Resources, Inc	Irene Trujillo
Address: 1515 Wazee, Suite 350	No: 303-318-0717
City: Denver State: CO Zip: 80202	Fax:
API Number: 05-081-06614	County: Moffat
Facility Name:	Facility Number: Location ID # 313000
Well Name: PTASYNSKI	Well Number: 1X
Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWNW 17 11N 97W	Latitude: 40.91539 Longitude: -108.3224

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Soil with Petroleum hydrocarbons

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Federal Land, grazing, oil and gas operations

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Haterton-Piezon Complex, Shallow Loams

Potential receptors (water wells within 1/4 mi, surface waters, etc.): None

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	Within pit	Excavated to non impacted soil
<input type="checkbox"/> Vegetation		
<input type="checkbox"/> Groundwater		
<input type="checkbox"/> Surface Water		

REMEDIALTION WORKPLAN

Describe Initial action taken (if previously provided, refer to that form or document):

The BLM gave verbal approval for the construction of a land treatment facility designed to treat soil excavated from produced water pits that are no longer necessary. The land treatment facility was constructed with an adequate earthen berm to allow for potential storm events and to prevent surface runoff.

Describe how source is to be removed:

Soils were excavated with a backhoe from five pits located at the Kleanhammer 3, Kleanhammer 3A, Ptasynski 1x and Ptasynski #2 - 2 locations.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Please see attached summary

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**REMEDIATION WORKPLAN (Cont.)**

Tracking Number: \_\_\_\_\_  
Name of Operator: THREE FORKS RESOURCES  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: PTASYNski-1X  
Facility Name & No: LOCATION ID # 313000  
PIT FACILITY ID # 100408

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

No groundwater was impacted

**Describe reclamation plan.** Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

No excavation was required in the area of land treatment. The surface area was scraped and berms constructed. Reclamation activities will include re-seeding in accordance with Moffat County Soil Conservation recommended seed mix. The seed mix includes Western Wheatgrass, Needleand thread, Bluebunch Wheatgrass, Sainfoin, Small Burnett and Sandberg Bluegrass. The seed will be obtained from Arkansas Valley Seed Company, or similar, and will be certified noxious weed free. The BLM will be contacted for their input and approval once the soil is below the COGCC 910-1 cleanup standards.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☒ N If yes, describe:

A composite soil sample was obtained in August 2011 from several areas within the treatment compound. The sampled exceeded the Table 910-1 standards for TPH. The facility will be re-sampled for TPH in the late spring 2012.

**Final disposition of E&P waste** (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

The soil, once treated and cleared with confirmatory sampling, will be used to backfill the pits where the material was originally derived.

**IMPLEMENTATION SCHEDULE**

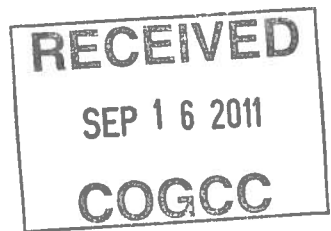
Date Site Investigation Began: <u>8/17/2010</u>	Date Site Investigation Completed: <u>8/17/2010</u>	Date Remediation Plan Submitted: <u>9/9/2011</u>
Remediation Start Date: <u>8/18/2010</u>	Anticipated Completion Date: <u>9-2012</u>	Actual Completion Date: <u>Pending</u>

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

Print Name: Irene Toujillo Signed: Irene Toujillo  
Title: Regulatory Analyst Date: 9/9/2011

OGCC Approved: Chris Canfield Title: FOR Chris Canfield Date: 10/18/2012  
EPS NW Region

Note: Please read  
uploaded email  
for requested information



ATTACHMENT

Ptasynski 1X Land Treatment for Soil

**Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:**

A land treatment facility was constructed at the Ptasynski 1x well location in accordance with the COGCC Series 907 rules. The facility was constructed in August 2010 after the Bureau of Land Management; Little Snake Field Office as landowner gave verbal approval for the construction of the facility as a result of their request that several pits in the field be cleaned up. We were unaware of the requirements to file a Form 27 Sundry with the COGCC at that time. A Form 3160-5 was submitted to BLM. The soil located within the land treatment facility was derived from five pits located at the Kleanhammer 3, Kleanhammer 3A, Ptasynski 1x and Ptasynski #2 - 2 locations. All free liquids were removed from the material prior to excavating and placing in the land treatment facility. The land treatment facilities were constructed with an earthen berm to prevent storm water runoff. One composite soil sample was obtained from the facility in August 2011 and analyzed for the COGCC Table 910-1 analyte. Total petroleum hydrocarbons (TPH) concentrations exceeded the COGCC Table 910-1 guidelines. As a result, we will continue to turn the soil and add water and nutrients to this material until November and begin the process again in April 2012. We will plan on obtaining a confirmatory sample for TPH in the late spring 2012. If the soil is within the Table 910-1 concentration levels we propose to beneficially use the soil for backfilling pits that we propose to close in this field. The analytical results for the composite sample are enclosed. A background sample for arsenic was previously obtained from this location and reported a higher concentration of arsenic than the composite sample obtained from the land treatment facility. Therefore, we would like to request a variance for the arsenic concentration. The background sample is attached to this Sundry.



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SEP 16 2011

COGCC

August 31, 2011

Mathis and Associates

Nick Mathis

3655 S. Hibiscus Way.

Denver CO 80237

Project Name - Powder Wash

*Plaszynski 1X Landfarm*

Project Number - N/A

Attached are you analytical results for Powder Wash received by Origins Laboratory, Inc. August 22, 2011. This project is associated with Origins project number X108115-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Ptasynski 1 Landfarm	X108115-01	Soil	August 19, 2011 9:45	08/22/2011 10:28

Origins Laboratory, Inc.



Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

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X108115

**ORIGINS**  
LABORATORY, INC

Client: Mathis and Associates  
Address: 3655 S. Hibiscus Way, Denver, CO  
Telephone Number: 303-713-6677  
Email Address: MATHIS@MATHISANDASSOCIATES.COM

Project Manager: Mathis  
Project Name: Powder Wash  
Project Number: 11701  
Samples Collected By: J.M.

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	As Sampled	Other			
1	8/6/11	0941	4											
2														
3														
4														
5														
6														
7														
8														
9														
10														

Reinforced By: 10/6/11  
Reinforced By: 10/6/11

Time: 10:28  
Time: 10:28

Date: 8/6/11  
Date: 8/6/11

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☒ Standard

Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

*Noelle E Doyle*

Noelle E Doyle, President

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# ORIGINS

LABORATORY, INC

Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Origins Laboratory

F-012207-01  
Effective Date 01/22/07

## Sample Receipt Checklist

Origins Work Order: Mathis

Client: Mathis and Associates Client Project ID: Denver - Mathis

Shipped Via: H/D Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Cooler ID					
Temp (°C)	<u>5.0</u>				

Thermometer ID: T001

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered within 5 hours of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Note the type of preservation in the Comments column (e.g., HCl).				
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in the case narrative.				

Mathis  
Custodian Printed Name

Mathis  
Signature or Initials of Custodian

01/22/07  
Date/Time

Origins Laboratory, Inc.

Noelle E Doyle

Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Ptasynski 1 Landfarm  
8/19/2011 9:45:00AM

Analyte	Result	Min. Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X108115-01 (Soil)

## BTEX by EPA 8260C

Benzene	ND	0.0020	0.0040	mg/kg	1	1H22005	08/22/2011	08/22/2011	
Toluene	ND	0.0020	0.0040	"	"	"	"	"	
Ethylbenzene	ND	0.0020	0.0040	"	"	"	"	"	
Xylenes, total	ND	0.0020	0.0040	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	119 %	70-130
Surrogate: Toluene-d8	102 %	70-130
Surrogate: 4-Bromofluorobenzene	91.2 %	70-130

"	"	"
"	"	"
"	"	"

## Conductivity

Conductivity	7990	1	2	us/cm	1	868375	08/25/2011	08/25/2011	
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## Metals by SW6010B

Arsenic	7.19	4.16	5.49	mg/kg	5	868326	08/24/2011	08/24/2011	
Barium	347	0.265	5.49	"	"	"	"	"	
Cadmium	0.547	0.224	2.75	"	"	"	"	"	1
Chromium	19.3	1.95	5.49	"	"	"	"	"	
Copper	21.5	1.58	11	"	"	"	"	"	
Lead	12.8	5.06	5.49	"	"	"	"	"	

Origins Laboratory, Inc.



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3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Ptasynski 1 Landfarm  
8/19/2011 9:45:00AM

Analyte	Result	Min. Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**XENCO**  
**X108115-01 (Soil)**

**Metals by SW6010B**

Nickel	17.4	0.489	5.49	mg/kg	5	868326	08/24/2011	08/24/2011	
Selenium	ND	2.97	16.5	"	"	"	"	"	
Silver	ND	1.06	11	"	"	"	"	"	
Zinc	53.9	0.83	16.5	"	"	"	"	"	

**Metals by SW7196**

Chromium, Hexavalent	ND	0.00549	0.44	mg/kg	1	868241	08/24/2011	08/24/2011	
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**Metals by SW7471A**

Mercury	0.0151	0.00142	0.0102	mg/kg	1	868322	08/25/2011	08/25/2011	V
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**Percent Moisture by AD2216A**

Percent Moisture	8.99	1	1	%	1	868094	08/23/2011	08/23/2011	
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**pH by SW9045C**

pH	8.97			SU	1	868099	08/23/2011	08/23/2011	
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**Polyaromatic Hydrocarbons (PaHs) by 8270SIM**

Acenaphthene	ND	21.9	914	ug/kg	5	868555	08/25/2011	08/26/2011	J
Anthracene	185	21.9	914	"	"	"	"	"	J

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3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Ptasynski 1 Landfarm  
8/19/2011 9:45:00AM

Analyte	Result	Min. Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## XENCO X108115-01 (Soil)

### Polyaromatic Hydrocarbons (PaHs) by 8270SIM

Benzo(a)anthracene	301	27.4	914	ug/kg	5	868555	08/25/2011	08/26/2011	J
Benzo(a)pyrene	ND	31.1	914	"	"	"	"	"	U, J3
Benzo(b)fluoranthene	ND	21.9	914	"	"	"	"	"	
Benzo(k)fluoranthene	102	21.9	914	"	"	"	"	"	J
Chrysene	356	21.9	914	"	"	"	"	"	J
Dibenz(a,h)Anthracene	ND	21.9	914	"	"	"	"	"	
Fluoranthene	176	27.4	914	"	"	"	"	"	J
Fluorene	129	21.9	914	"	"	"	"	"	J
Indeno(1,2,3-c,d)Pyrene	ND	21.9	914	"	"	"	"	"	
Naphthalene	ND	31.1	914	"	"	"	"	"	J
Pyrene	248	21.9	914	"	"	"	"	"	J

Surrogate: 2,4,6-Tribromophenol	%	19-122	"	"	"	J2
Surrogate: 2-Fluorobiphenyl	%	30-115	"	"	"	J2
Surrogate: Nitrobenzene-d5	%	23-120	"	"	"	J2
Surrogate: Terphenyl-D14	%	16-137	"	"	"	J2

### Sodium Absorption Ratio (SAR) by S29B08

Sodium Absorption Ratio	2.75	1	868329	08/25/2011	08/25/2011
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Project Number: N/A  
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Ptasynski 1 Landfarm  
8/19/2011 9:45:00AM

Analyte	Result	Min. Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X108115-01 (Soil)

#### TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	25.0	50.0	mg/kg	1	1H22006	08/22/2011	08/22/2011	
Diesel (C10-C28)	1170	25.0	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	2040	100.0	200.0	"	"	"	"	"	
TPH - Carbon Chain Total	3200	25.0	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	85.3 %	65-140	"	"	"
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3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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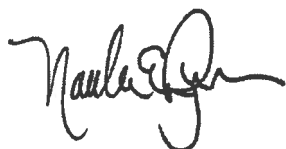
Batch 1H22005 - EPA 5030B

Blank (1H22005-BLK1)

Prepared: 08/22/2011 Analyzed: 08/22/2011

Benzene	ND	0.004	mg/kg							
Toluene	ND	0.004	"							
Ethylbenzene	ND	0.004	"							
m,p-Xylene	ND	0.008	"							
o-Xylene	ND	0.004	"							
Surrogate: 1,2-Dichloroethane-d4	69		ug/L	62.5		110	70-130			
Surrogate: Toluene-d8	64		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	56		"	62.5		90.2	70-130			

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Mathis and Associates  
3655 S. Hibiscus Way.  
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Project Number: N/A  
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Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1H22005 - EPA 5030B

LCS (1H22005-BS1)

Prepared: 08/22/2011 Analyzed: 08/22/2011

Benzene	0.2	0.004	mg/kg	0.200		85.5	70-130			
Toluene	0.2	0.004	"	0.200		80.8	70-130			
Ethylbenzene	0.2	0.004	"	0.200		88.3	70-130			
m,p-Xylene	0.4	0.008	"	0.400		89.8	70-130			
o-Xylene	0.2	0.004	"	0.200		81.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		ug/L	62.5		99.6	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	54		"	62.5		86.5	70-130			

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Project Number: N/A  
Project: Powder Wash

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1H22005 - EPA 5030B

Matrix Spike (1H22005-MS1)		Source: X108108-01			Prepared: 08/22/2011 Analyzed: 08/22/2011					
Benzene	0.2	0.004	mg/kg	0.200	ND	96.1	70-130			
Toluene	0.2	0.004	"	0.200	ND	93.2	70-130			
Ethylbenzene	0.2	0.004	"	0.200	ND	95.4	70-130			
m,p-Xylene	0.4	0.008	"	0.400	ND	96.3	70-130			
o-Xylene	0.2	0.004	"	0.200	ND	90.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	67		ug/L	62.5		106	70-130			
Surrogate: Toluene-d8	65		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	55		"	62.5		86.6	70-130			

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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1H22005 - EPA 5030B

Matrix Spike Dup (1H22005-MSD1)		Source: X108108-01			Prepared: 08/22/2011 Analyzed: 08/22/2011					
Benzene	0.2	0.004	mg/kg	0.200	ND	101	70-130	5.27	20	
Toluene	0.2	0.004	"	0.200	ND	98.9	70-130	6.02	20	
Ethylbenzene	0.2	0.004	"	0.200	ND	97.6	70-130	2.24	20	
m,p-Xylene	0.4	0.008	"	0.400	ND	99.3	70-130	3.00	20	
o-Xylene	0.2	0.004	"	0.200	ND	94.1	70-130	4.06	20	
Surrogate: 1,2-Dichloroethane-d4	65		ug/L	62.5		104	70-130			
Surrogate: Toluene-d8	66		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		90.9	70-130			

Origins Laboratory, Inc.



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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015M - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1H22006 - Default Prep GC-Semi**

**Blank (1H22006-BLK1)**

Prepared: 08/22/2011 Analyzed: 08/22/2011

Gasoline (C6-C10)	ND	50.0	mg/kg
Diesel (C10-C28)	ND	50.0	"
Residual Range Organics (C28-C36)	ND	200.0	"
TPH - Carbon Chain Total	ND	50.0	"

Surrogate: o-Terphenyl 42 g 50.0 83.6 65-140

**LCS (1H22006-BS1)**

Prepared: 08/22/2011 Analyzed: 08/22/2011

Gasoline (C6-C10)	81.0	50.0	mg/kg				65-140
Diesel (C10-C28)	426.4	50.0	"	500	85.3		60-140
Surrogate: o-Terphenyl	42		g	50.0	83.6		65-140

**Matrix Spike (1H22006-MS1)**

Source: X108120-01

Prepared: 08/22/2011 Analyzed: 08/22/2011

Gasoline (C6-C10)	82.1	50.0	mg/kg		ND		65-130
Diesel (C10-C28)	431.3	50.0	"	500	ND	86.3	60-140
Surrogate: o-Terphenyl	42		g	50.0		83.6	65-140

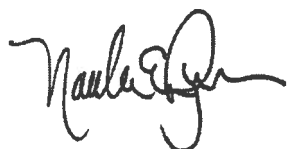
**Matrix Spike Dup (1H22006-MSD1)**

Source: X108120-01

Prepared: 08/22/2011 Analyzed: 08/22/2011

Gasoline (C6-C10)	85.4	50.0	mg/kg		ND		65-130	3.97	20
Diesel (C10-C28)	447.5	50.0	"	500	ND	89.5	60-140	3.70	25
Surrogate: o-Terphenyl	45		g	50.0		90.5	65-140		

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3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

## Metals by SW6010B - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868326 - SW3050B

MS (426252-001 S)		Source: 426252-001 S			Prepared: 08/24/2011 Analyzed: 08/24/2011					
Nickel	108	5.28	mg/kg	106	1.28	101	75-125		20	
Barium	167	5.28	"	106	13.4	145	75-125		20	
Cadmium	101	2.64	"	106	<0.215	95	75-125		20	
Chromium	114	5.28	"	106	<1.87	108	75-125		20	
Copper	115	10.6	"	106	<1.52	108	75-125		20	
Lead	111	5.28	"	106	<4.86	105	75-125		20	
Zinc	126	15.8	"	106	5.49	114	75-125		20	
Silver	49.5	10.6	"	52.8	<1.02	94	75-125		20	
Selenium	109	15.8	"	106	<2.85	103	75-125		20	
Arsenic	103	5.28	"	106	<3.99	97	75-125		20	

MSD (426252-001 SD)		Source: 426252-001 SD			Prepared: 08/24/2011 Analyzed: 08/24/2011					
Zinc	121	15.8	mg/kg	106	5.49	109	75-125	4	20	
Cadmium	97.8	2.64	"	106	<0.215	92	75-125	3	20	
Arsenic	97.3	5.28	"	106	<3.99	92	75-125	6	20	
Barium	172	5.28	"	106	13.4	150	75-125	3	20	
Copper	111	10.6	"	106	<1.52	105	75-125	4	20	
Nickel	105	5.28	"	106	1.28	98	75-125	3	20	
Selenium	102	15.8	"	106	<2.85	96	75-125	7	20	
Silver	47.3	10.6	"	52.8	<1.02	90	75-125	5	20	
Chromium	111	5.28	"	106	<1.87	105	75-125	3	20	
Lead	107	5.28	"	106	<4.86	101	75-125	4	20	

LCS (610370-1-BKS)		Source: 610370-1-BKS			Prepared: 08/24/2011 Analyzed: 08/24/2011					
Silver	42.1	2	mg/kg	50	<0.193	84	75-125		20	
Arsenic	82	1	"	100	<0.756	82	75-125		20	
Barium	85.1	1	"	100	0.301	85	75-125		20	

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3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

**Metals by SW6010B - Quality Control**  
**XENCO**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868326 - SW3050B

LCS (610370-1-BKS)				Source: 610370-1-BKS			Prepared: 08/24/2011 Analyzed: 08/24/2011			
Cadmium	81.8	0.5	mg/kg	100	<0.0408	82	75-125		20	
Chromium	85	1	"	100	<0.355	85	75-125		20	
Copper	87	2	"	100	<0.288	87	75-125		20	
Lead	85	1	"	100	<0.921	85	75-125		20	
Selenium	87.4	3	"	100	<0.540	87	75-125		20	
Zinc	77.8	3	"	100	0.766	78	75-125		20	
Nickel	83.2	1	"	100	<0.0890	83	75-125		20	

BLANK (610370-1-BLK)				Source: 610370-1-BLK			Prepared: 08/24/2011 Analyzed: 08/24/2011			
Zinc	0.766	3	mg/kg	100			-		20	
Arsenic	ND	1	"	100			-		20	
Barium	0.301	1	"	100			-		20	
Cadmium	ND	0.5	"	100			-		20	
Chromium	ND	1	"	100			-		20	
Copper	ND	2	"	100			-		20	
Lead	ND	1	"	100			-		20	
Nickel	ND	1	"	100			-		20	
Selenium	ND	3	"	100			-		20	
Silver	ND	2	"	50			-		20	

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

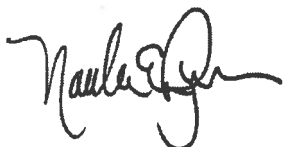
Metals by SW7196 - Quality Control  
XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868241 - SW3060A

MS (426256-001 S)		Source: 426256-001 S			Prepared: 08/24/2011 Analyzed: 08/24/2011					
Chromium, Hexavalent	0.223	0.44	mg/kg	0.22	<0.0054	101	80-120		20	
LCS (868241-1-BKS)		Source: 868241-1-BKS			Prepared: 08/24/2011 Analyzed: 08/24/2011					
Chromium, Hexavalent	0.211	0.4	mg/kg	0.2	<0.0050	106	80-120		20	
BLANK (868241-1-BLK)		Source: 868241-1-BLK			Prepared: 08/24/2011 Analyzed: 08/24/2011					
Chromium, Hexavalent	ND	0.4	mg/kg	0.4			-		20	

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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

**Metals by SW7471A - Quality Control**  
**XENCO**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 868322 - SW7471P										
MS (426329-001 S)		Source: 426329-001 S			Prepared: 08/25/2011 Analyzed: 08/25/2011					
Mercury	0.124	0.00943	mg/kg	94.3	0.0334	96	80-120		20	
MSD (426329-001 SD)		Source: 426329-001 SD			Prepared: 08/25/2011 Analyzed: 08/25/2011					
Mercury	0.12	0.00962	mg/kg	96.2	0.0334	90	80-120	3	20	
LCS (610442-1-BKS)		Source: 610442-1-BKS			Prepared: 08/25/2011 Analyzed: 08/25/2011					
Mercury	0.418	0.01	mg/kg	0.4	0.0023	105	80-120		20	
BLANK (610442-1-BLK)		Source: 610442-1-BLK			Prepared: 08/25/2011 Analyzed: 08/25/2011					
Mercury	0.0023	0.01	mg/kg	0.4			-		20	

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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Percent Moisture by AD2216A - Quality Control  
XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868094 - NONE

BLANK (868094-1-BLK)

Source: 868094-1-BLK

Prepared: 08/23/2011 Analyzed: 08/23/2011

Percent Moisture	ND	1	%	0			-		20	
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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Polyaromatic Hydrocarbons (PaHs) by 8270SIM - Quality Control  
XENCO

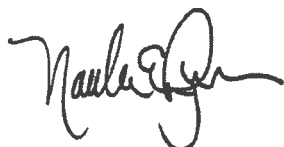
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868555 - SW3550

MS (426256-001 S)		Source: 426256-001 S			Prepared: 08/25/2011 Analyzed: 08/26/2011					
Indeno(1,2,3-c,d)Pyrene	246	91.4	ug/kg	0.366	<0.21.9	67	65-135		25	
Acenaphthene	52.5	91.4	"	0.366	<0.21.9	14	41-134		25	
Anthracene	207	91.4	"	0.366	185	6	65-135		25	
Benzo(a)anthracene	339	91.4	"	0.366	301	10	44-126		25	
Benzo(a)pyrene	137	91.4	"	0.366	<0.31.1	37	65-135		25	
Benzo(b)fluoranthene	311	91.4	"	0.366	<0.21.9	85	65-135		25	
Benzo(k)fluoranthene	37.2	91.4	"	0.366	102		25-125		25	
Chrysene	337	91.4	"	0.366	356		65-135		25	
Dibenz(a,h)Anthracene	245	91.4	"	0.366	<0.21.9	67	65-135		25	
Fluorene	148	91.4	"	0.366	129	5	65-135		25	
Naphthalene	39.9	91.4	"	0.366	<0.31.1	11	65-135		25	
Pyrene	233	91.4	"	0.366	248		41-144		25	
Fluoranthene	190	91.4	"	0.366	176	4	65-135		25	
Surrogate: 2-Fluorobiphenyl	ND		Percent	333			30-115			
Surrogate: Terphenyl-D14	ND		"	333			16-137			
Surrogate: Nitrobenzene-d5	ND		"	333			23-120			
Surrogate: 2,4,6-Tribromophenol	ND		"	333			19-122			

MSD (426256-001 SD)		Source: 426256-001 SD			Prepared: 08/25/2011 Analyzed: 08/26/2011					
Benzo(b)fluoranthene	315	91.5	ug/kg	0.366	<0.22.0	86	65-135	1	25	
Naphthalene	40.5	91.5	"	0.366	<0.31.1	11	65-135	1	25	
Benzo(a)anthracene	323	91.5	"	0.366	301	6	44-126	5	25	
Indeno(1,2,3-c,d)Pyrene	253	91.5	"	0.366	<0.22.0	69	65-135	3	25	
Fluorene	157	91.5	"	0.366	129	8	65-135	6	25	
Fluoranthene	169	91.5	"	0.366	176		65-135	12	25	
Acenaphthene	51.5	91.5	"	0.366	<0.22.0	14	41-134	2	25	
Pyrene	250	91.5	"	0.366	248	1	41-144	7	25	

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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Polyaromatic Hydrocarbons (PaHs) by 8270SIM - Quality Control  
XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868555 - SW3550

MSD (426256-001 SD)			Source: 426256-001 SD			Prepared: 08/25/2011 Analyzed: 08/26/2011				
Dibenz(a,h)Anthracene	245	91.5	ug/kg	0.366	<0.22.0	67	65-135	0	25	
Anthracene	209	91.5	"	0.366	185	7	65-135	1	25	
Benzo(a)pyrene	297	91.5	"	0.366	<0.31.1	81	65-135	74	25	
Benzo(k)fluoranthene	42.9	91.5	"	0.366	102		25-125	14	25	
Chrysene	345	91.5	"	0.366	356		65-135	2	25	
Surrogate: 2,4,6-Tribromophenol	ND		Percent	333			19-122			
Surrogate: Terphenyl-D14	ND		"	333			16-137			
Surrogate: Nitrobenzene-d5	ND		"	333			23-120			
Surrogate: 2-Fluorobiphenyl	ND		"	333			30-115			

LCS (610459-1-BKS)			Source: 610459-1-BKS			Prepared: 08/25/2011 Analyzed: 08/26/2011				
Fluoranthene	30.6	1.67	ug/kg	33.3	<0.500	92	65-135		25	
Benzo(a)anthracene	27.5	1.67	"	33.3	<0.500	83	44-126		25	
Pyrene	31.1	1.67	"	33.3	<0.400	93	41-144		25	
Naphthalene	30.8	16.7	"	33.3	<0.566	92	65-135		25	
Indeno(1,2,3-c,d)Pyrene	27.9	1.67	"	33.3	<0.400	84	65-135		25	
Fluorene	30.8	1.67	"	33.3	<0.400	92	65-135		25	
Acenaphthene	30.6	1.67	"	33.3	<0.400	92	41-134		25	
Benzo(b)fluoranthene	26.6	1.67	"	33.3	<0.400	80	65-135		25	
Dibenz(a,h)Anthracene	28.8	1.67	"	33.3	<0.400	86	65-135		25	
Anthracene	28.9	1.67	"	33.3	<0.400	87	65-135		25	
Benzo(a)pyrene	29.3	1.67	"	33.3	<0.566	88	65-135		25	
Benzo(k)fluoranthene	33.5	1.67	"	33.3	<0.400	101	25-125		25	
Chrysene	30.9	1.67	"	33.3	<0.400	93	65-135		25	
Surrogate: Nitrobenzene-d5	33.2		Percent	33.3		100	23-120			
Surrogate: Terphenyl-D14	34.5		"	33.3		104	16-137			
Surrogate: 2,4,6-Tribromophenol	30.1		"	33.3		90	19-122			
Surrogate: 2-Fluorobiphenyl	33.6		"	33.3		102	30-115			

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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Polyaromatic Hydrocarbons (PaHs) by 8270SIM - Quality Control  
XENCO

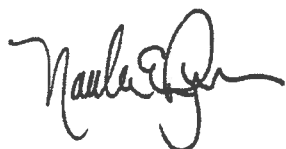
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868555 - SW3550

BLANK (610459-1-BLK)		Source: 610459-1-BLK			Prepared: 08/25/2011 Analyzed: 08/26/2011					
Fluoranthene	ND	1.67	ug/kg	33.3			-		25	
Pyrene	ND	1.67	"	33.3			-		25	
Naphthalene	ND	16.7	"	33.3			-		25	
Indeno(1,2,3-c,d)Pyrene	ND	1.67	"	33.3			-		25	
Fluorene	ND	1.67	"	33.3			-		25	
Chrysene	ND	1.67	"	33.3			-		25	
Benzo(k)fluoranthene	ND	1.67	"	33.3			-		25	
Benzo(b)fluoranthene	ND	1.67	"	33.3			-		25	
Benzo(a)pyrene	ND	1.67	"	33.3			-		25	
Benzo(a)anthracene	ND	1.67	"	33.3			-		25	
Anthracene	ND	1.67	"	33.3			-		25	
Acenaphthene	ND	1.67	"	33.3			-		25	
Dibenz(a,h)Anthracene	ND	1.67	"	33.3			-		25	
Surrogate: 2,4,6-Tribromophenol	31.4		Percent	33.3		94	19-122			
Surrogate: Nitrobenzene-d5	31		"	33.3		93	23-120			
Surrogate: Terphenyl-D14	35.4		"	33.3		106	16-137			
Surrogate: 2-Fluorobiphenyl	30.7		"	33.3		92	30-115			

LCSD (610459-1-BSD)		Source: 610459-1-BSD			Prepared: 08/25/2011 Analyzed: 08/26/2011					
Fluorene	30.8	1.67	ug/kg	33.3	<0.400	92	65-135	0	25	
Indeno(1,2,3-c,d)Pyrene	27.9	1.67	"	33.3	<0.400	84	65-135	0	25	
Naphthalene	31	16.7	"	33.3	<0.566	93	65-135	1	25	
Fluoranthene	30.6	1.67	"	33.3	<0.500	92	65-135	0	25	
Benzo(a)anthracene	27.2	1.67	"	33.3	<0.500	82	44-126	1	25	
Pyrene	31	1.67	"	33.3	<0.400	93	41-144	0	25	
Dibenz(a,h)Anthracene	28.6	1.67	"	33.3	<0.400	86	65-135	1	25	
Chrysene	31	1.67	"	33.3	<0.400	93	65-135	0	25	

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Denver CO 80237

Project Number: N/A  
Project: Powder Wash

Polyaromatic Hydrocarbons (PaHs) by 8270SIM - Quality Control  
XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 868555 - SW3550

LCSD (610459-1-BSD)		Source: 610459-1-BSD			Prepared: 08/25/2011 Analyzed: 08/26/2011					
Benzo(k)fluoranthene	33.4	1.67	ug/kg	33.3	<0.400	100	25-125	0	25	
Benzo(a)pyrene	29.1	1.67	"	33.3	<0.566	87	65-135	1	25	
Anthracene	28.9	1.67	"	33.3	<0.400	87	65-135	0	25	
Acenaphthene	30.8	1.67	"	33.3	<0.400	92	41-134	1	25	
Benzo(b)fluoranthene	26.3	1.67	"	33.3	<0.400	79	65-135	1	25	
Surrogate: Nitrobenzene-d5	32.5		Percent	33.3		96	25-120			
Surrogate: Terphenyl-D14	33.5		"	33.3		101	16-137			
Surrogate: 2-Fluorobiphenyl	32.6		"	33.3		96	30-115			
Surrogate: 2,4,6-Tribromophenol	29.1		"	33.3		87	19-122			

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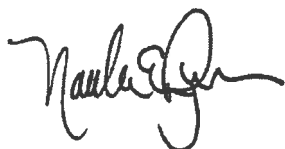
Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project: Powder Wash

### Notes and Definitions

- V detected in the sample and method blank
- U [Undefined]
- J3 % RPD between the Matrix Spike and Matrix Spike Duplicate recovery was outside method control limits.
- J2 % recovery of the surrogate was outside method control limits. This is due to possible matrix interference or sample dilution.
- J % recovery in the MS and/or MSD was outside method control limits, LCS recovery passed.
- I Sample result was found between MDL and RL
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

Origins Laboratory, Inc.



Noelle E Doyle, President

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July 28, 2011

Mathis and Associates

Nick Mathis

3655 S. Hibiscus Way.

Denver CO 80237

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Project Name - Powder Wash

Project Number - N/A

Attached are you analytical results for Powder Wash received by Origins Laboratory, Inc. July 26, 2011. This project is associated with Origins project number X107143-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



4640 North Pecos Street | Unit C | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Mathis and Associates  
3655 S. Hibiscus Way.

Denver CO 80237

Project Number: N/A

Project Name: Powder Wash

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Ptasynski 1 BG	X107143-01	Soil	July 26, 2011 8:00	07/26/2011 16:33
Ptasynski 2 BG	X107143-02	Soil	July 26, 2011 8:15	07/26/2011 16:33
Kleinhammer 3 BG	X107143-03	Soil	July 26, 2011 8:30	07/26/2011 16:33

Origins Laboratory, Inc.



Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project Name: Powder Wash

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

page 1 of 1

X107143

Client: Mathis and Associates  
Address: 3655 S. Hibiscus Way  
Telephone Number: 303-513-4057  
Email Address: NickMathis@originslab.com

Project Manager: Nick Mathis  
Project Name: Powder Wash  
Project Number: J/A  
Samples Collected By: J/A

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analyst	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Sample	Other			
Plsyzynski 1x BG	7/26/11	0800	1										1	
Plsyzynski 2 BG	7/26/11	0815	1										2	
Kleinman 3 BG	7/26/11	0830	1										3	
													4	
													5	
													6	
													7	
													8	
													9	
													10	
Relinquished by: [Signature]	Date: 7/26/11	Time: 1633		Received by: [Signature]				Date: 7/26/11				Time: 1633	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished by:	Date:	Time:		Received by:				Date:				Time:		

Date Result Needed

Origins Laboratory, Inc.

*Noelle E Doyle*

Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project Name: Powder Wash

Origins Laboratory

F-012207-01  
Effective Date: 01/22/07

## Sample Receipt Checklist

Origins Work Order: X6743

Client: MATHIS Client Project ID: POWDER WASH

Shipped Via: H/D Airbill #: N/A  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Cooler ID	<u>N/A</u>				
Temp (°C)	<u>17.7°</u>				

Thermometer ID: 1001

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 8°C? <sup>11</sup>		<input checked="" type="checkbox"/>		
NOTE: If samples are delivered within 5 hours of sampling, this requirement is waived provided that there is evidence that cooling has begun				<u>NOTIFIED CLIENT</u>
Were all samples received intact? <sup>11</sup>	<input checked="" type="checkbox"/>			
Was adequate sample volume provided? <sup>11</sup>	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact? <sup>11</sup>			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present? <sup>11</sup>		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely? <sup>11</sup>	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received? <sup>11</sup>	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC? <sup>11</sup>	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded? <sup>11</sup>	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	<u>SOIL</u>
Are samples preserved that require preservation (excluding cooling)? <sup>11</sup>			<input checked="" type="checkbox"/>	<u>SOIL</u>
Note the type of preservation in the Comments column (e.g., HCl)				
Additional Comments (if any):				
<sup>11</sup> If NO, then contact the client before proceeding with analysis and note in the case narrative.				

Ross Mathis  
Custodian Printed Name

R/Mathis  
Signature or Initials of Custodian

7/26/11  
Date/Time

Origins Laboratory, Inc.

Noelle E Doyle

Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.

Denver CO 80237

Project Number: N/A

Project Name: Powder Wash

Ptasynski 1 BG

7/26/2011 8:00:00AM

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit						

**XENCO**

X107143-01 (Soil)

**Metals by SW6010B**

Arsenic	12.8	5.01	mg/kg	5	865693	07/27/2011	07/27/2011
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**Percent Moisture by AD2216A**

Percent Moisture	5.8	1	%	1	865487	07/27/2011	07/27/2011
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Origins Laboratory, Inc.



Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.

Denver CO 80237

Project Number: N/A

Project Name: Powder Wash

Ptasynski 2 BG

7/26/2011 8:15:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**XENCO**

X107143-02 (Soil)

**Metals by SW6010B**

Arsenic	10.3	4.5	mg/kg	5	865693	07/27/2011	07/27/2011
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**Percent Moisture by AD2216A**

Percent Moisture	5.79	1	%	1	865487	07/27/2011	07/27/2011
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Origins Laboratory, Inc.



Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project Name: Powder Wash

**Kleinhammer 3 BG****7/26/2011 8:30:00AM**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit						

**XENCO****X107143-03 (Soil)****Metals by SW6010B**

Arsenic	15	5.4	mg/kg	5	865693	07/27/2011	07/27/2011
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**Percent Moisture by AD2216A**

Percent Moisture	14.2	1	%	1	865487	07/27/2011	07/27/2011
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Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project Name: Powder Wash

**Metals by SW6010B - Quality Control**  
**XENCO**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 865693 - SW3050B										
MS (424369-001 S)		Source: 424369-001 S			Prepared: 07/27/2011 Analyzed: 07/27/2011					
Arsenic	99.4	5.31	mg/kg	106	12.8	82	75-125		20	
MSD (424369-001 SD)		Source: 424369-001 SD			Prepared: 07/27/2011 Analyzed: 07/27/2011					
Arsenic	98	5.1	mg/kg	102	12.8	84	75-125	1	20	
LCS (608870-1-BKS)		Source: 608870-1-BKS			Prepared: 07/27/2011 Analyzed: 07/27/2011					
Arsenic	88.6	1	mg/kg	100	<0.756	89	75-125		20	
BLANK (608870-1-BLK)		Source: 608870-1-BLK			Prepared: 07/27/2011 Analyzed: 07/27/2011					
Arsenic	ND	1	mg/kg	100			-		20	

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Mathis and Associates  
3655 S. Hibiscus Way.  
Denver CO 80237

Project Number: N/A  
Project Name: Powder Wash

Percent Moisture by AD2216A - Quality Control  
XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 865487 - NONE

BLANK (865487-1-BLK)

Source: 865487-1-BLK

Prepared: 07/27/2011 Analyzed: 07/27/2011

Percent Moisture	ND	1	%	0			-		20	
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Noelle E Doyle, President

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Mathis and Associates  
3655 S. Hibiscus Way.

Denver CO 80237

Project Number: N/A

Project Name: Powder Wash

#### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

A handwritten signature in black ink, appearing to read "Noelle Doyle", written over a horizontal line.

Noelle E Doyle, President

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