NM1 - __10 - B__

RECR – 028
Soil Reuse Approval

April 2014

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division

April 1, 2014

Mr. Terry Lattin
JFJ Landfarm, L.L.C.
Industrial Ecosystems Inc.
Soil Reclamation Center
P.O. Box 2043
Farmington, New Mexico 87499

RE: Request for Approval of Off-Site Disposition of Remediated Soils
JFJ Landfarm, LLC - Industrial Ecosystems Inc.
JFJ Landfarm – Permit # NM1-010-B
Location: NW/4 SE/4 of Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico

Dear Mr. Lattin:

The Oil Conservation Division (OCD) has reviewed JFJ Landfarm, LLC's (JFJ) request, dated March 21, 2014, for off-site disposition and reuse of remediated soils (approximately 6000 cubic yards) from the OCD permitted landfarm (Surface Waste Management Facility Permit # NM-1-0010B) to be utilized as backfill and a vegetative soil cover for an OCD reclamation fund remediation project (RECR -028) at the former Southwest Water Disposal site, located in Units N and O of Section 32, Township 30 North, Range 9 West NMPM, San Juan County, New Mexico. OCD has reviewed the analytical results to reuse the remediated soils from the following biopile(s):

Pile # 777	*Pile # 784*	*Pile # 822*
Pile # 824	*Pile # 802*	*Pile # 856*

Based upon the information provided, the above-referenced biopiles are hereby approved for reuse with the following understandings and conditions:

1. JFJ has demonstrated that the proposed soils for reuse satisfy the TPH, BTEX, and Benzene concentrations specified in Condition 17 of the Landfarm and Composting Operations section of your February 3, 2004 surface waste management facility permit (NM1-010-B);

2. OCD shall obtain legal authority from the surface owner prior to placement of the remediated soils for reuse;

3. OCD shall ensure that remediated soils are reused in a manner that prevents the contamination of ground water and surface water, and protects human health and the environment; and

Please be advised that approval of this request does not relieve JFJ of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve JFJ of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If there are any questions regarding this matter, please do not hesitate to contact Mr. Brad A. Jones of my staff at (505) 476-3487 or brad.a.jones@state.nm.us.

Sincerely,

Jami Bailey
Director

JB/baj

cc: Jim Griswold, OCD Environmental Bureau, Santa Fe
OCD District III Office, Aztec

Industrial Ecosystems Inc.
Soil Reclamation Center

P.O. Box 2043
Farmington, NM 87499

Phone: (505) 632-1782
Fax: (505) 632-1876

#49 CR 3150
Aztec, NM 87410

March 21, 2014

Ms Jamie Bailey, Division Director Oil Conservation Division
1220 South St. Francis Drive Santa Fe, NM 87506

RE: Utilizing Remediated Oil Field Soils to help Re-vegetation at Southwest Water Disposal, a Closed and Abandoned Oilfield Facility.

Dear Director Bailey:

JFJ Land Farm requests permission for remediated soils from biopiles 777, 784, 822, 824, 802 and 856 to be hauled from the JFJ Land Farm facility on Crouch Mesa, Permit# NM-01-0010B, for beneficial use at the former Southwest Water Disposal (SWWD) site, SE/4 SW/4 and SW/4 SE/4, S32 T30N, R09W, NMPM. The SWWD project site is approximately 2 miles north of Blanco, NM, accessed from County Road #4599, and is also known as San Juan County Assessor Parcel #2053174198066. This is a New Mexico Oil Conservation Division (NMOCD) reclamation project where the remediated soils will be used to provide a vegetation friendly growth medium in newly constructed re-vegetation channels and spread a vegetation friendly soil cap over the approximately four acre core of the closed evaporation pond at the SWWD facility site. The soils will significantly improve the surface soils, potentially allowing establishment of stabilizing vegetation on the core of the project site (Attachment #1 Existing Site Surface Soil Analytical Results).

The biopiles, totaling approximately 6,000 cubic yards, have undergone remediation in the JFJ Land Farm and reached standards as required in the JFJ permit (Attachment #2, Permit Excerpt, Paragraph 17) to allow the biopiles to be dismantled. Manure was previously added to the biopiles as part of the remediation process rendering the use of Method 418.1 inappropriate due to the presence of non- petroleum organics. However, Total Petroleum Hydrocarbons, GRO/DRO measured by EPA SWA 846 Method 8015B are well below the 100 ppm standard required in the JFJ permit. The soils have undergone additional testing (Attachment #3 Remediated Soils Laboratory Analytical Results) to confirm that volatile hydrocarbons are remediated below standards. Gasoline Range Organic Petroleum Hydrocarbons (GRO) totals all remain below the 10 mg/kg detection limit by Test Method 80158. Diesel Range Organic Petroleum Hydrocarbons (ORO) ranged from a maximum of 34.6 mg/kg to below the detection limit of 10 mg/kg by Test Method 8015B.

Total volatile organic compounds, BTEX are all below the detection limits of Method 8021B. Benzene concentrations were below the detection limit of 0.050 mg/kg. Toluene was not found above the detection limit of 0.050 mg/kg. Ethylbenzene results were all below the detection limit of 0.050 mg/kg. Xylene concentrations were not found above the detection limit of 0.150 mg/kg.

According to the laboratory analytical results, total metals are below regulatory standards when mathematically converted to a leachate by the "rule of twenty for solids". Method 6010B total metals tests results exhibit Arsenic, Cadmium, Lead, Selenium and Silver below detection limits noted in the analytical results, Attachment 3. Total Barium concentration results range from 348 down to 155 mg/kg by Method 6010 B but when following the rule of twenty (If a waste is 100% solid, as defined by the TCLP method, then the results of the total constituent analysis may be divided by twenty to convert the total results into the maximum leachable concentration), the test results are well below the TCLP standard for Barium of 100 mg/1. Utilizing Test Method 60108 total metals, Chromium ranges from a high of 20 mg/kg to below the detection limit of 5.00 mg/kg but again, following the rule of twenty, the results are below the TCLP standard of 5 mg/1. Mercury analyses were run by Test Method 7471 with one sample exhibiting a concentration of 0.559 mg/kg. All other samples were below the detection limit of 0.103 mg/kg. Again, using the rule of twenty, all results were below the TCLP standard of 0.2 mg/1.

Anions and Cations are significantly lower than the levels found in the existing onsite cap, and the Sodium Absorption Ration (SAR) as well as the Electrical Conductivity (EC) indicate the remediated soils are a suitable growth media for use in the SWWD re-vegetation project.

It is projected that approximately 5,500 cubic yards will be utilized for the SWWD project. These soils will be used at the SWWD site under NMOCD PO #52100-0000039950 issued to Souder, Miller & Associates.

Please sign below to indicate your authorization on behalf of the Division for the soils to be used on the SWWD project under the supervision of Souder, Miller & Associates personnel and NMOCD.

Respectfully,

Signature: _____
Terry Lattin, GM/President

Approved by:

New Mexico Oil Conservation Division
Signature: _____
Jamie Bailey, Division Director

Attachments:
Attachment #1 Existing Site Surface Soil Analytical Results Attachment #2 Excerpt from JFJ Land Farm Permit NM-01-00101B Attachment #3 Remediated Soils Laboratory Analytical Results

ATTACHMENT #1
Existing Site Surface Soil Analytical Results

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 06, 2013

Cindy Gray
Souder, Miller and Associates
2101 San Juan Boulevard
Farmington, NM 87401
TEL: (505) 325-5667
FAX (505) 327-1496

RE: SW Disposal

OrderNo.: 1305837

Dear Cindy Gray:

Hall Environmental Analysis Laboratory received 12 sample(s) on 5/21/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates
Client Sample ID: SE Corner
Project: SW Disposal
Collection Date: 5/20/2013 11:22:00 AM
Lab ID: 1305837-007
Matrix: SOIL
Received Date: 5/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	5.1	1.5		mg/Kg	5	5/23/2013 5:19:40 PM	7593
Chloride	2000	75		mg/Kg	50	5/24/2013 3:30:32 PM	7593
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	5/23/2013 5:19:40 PM	7593
Bromide	6.7	1.5		mg/Kg	5	5/23/2013 5:19:40 PM	7593
Nitrogen, Nitrate (As N)	18	1.5		mg/Kg	5	5/23/2013 5:19:40 PM	7593
Phosphorus, Orthophosphate (As P	ND	7.5		mg/Kg	5	5/23/2013 5:19:40 PM	7593
Sulfate	2300	30		mg/Kg	20	5/23/2013 5:32:05 PM	7593
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	0.40	0.16		mg/kg	5	5/29/2013 11:47:28 AM	7635
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	5.0		mg/Kg	2	5/29/2013 9:37:55 AM	7618
Barium	820	2.0		mg/Kg	20	5/30/2013 9:25:13 AM	7618
Cadmium	ND	0.20		mg/Kg	2	5/29/2013 9:37:55 AM	7618
Calcium	5100	50		mg/Kg	2	5/30/2013 9:19:09 AM	7618
Chromium	6.1	0.60		mg/Kg	2	5/29/2013 9:37:55 AM	7618
Lead	3.8	0.50		mg/Kg	2	5/29/2013 9:37:55 AM	7618
Magnesium	2800	50		mg/Kg	2	5/30/2013 9:19:09 AM	7618
Potassium	2000	100		mg/Kg	2	5/30/2013 9:19:09 AM	7618
Selenium	ND	5.0		mg/Kg	2	5/30/2013 9:19:09 AM	7618
Silver	ND	0.50		mg/Kg	2	5/29/2013 9:37:55 AM	7618
Sodium	7500	50		mg/Kg	2	5/30/2013 9:19:09 AM	7618
SAR SOLUBLE CATIONS						Analyst: **JLF**	
Sodium Adsorption Ratio	710	0			1	5/28/2013 2:49:00 PM	7596
RESISTIVITY						Analyst: **JML**	
Resistivity	138	1.00		Ohms * cm	1	5/22/2013 6:55:00 PM	7575

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report
Lab Order 1305837
Date Reported: **6/6/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates
Project: SW Disposal
Lab ID: 1305837-008 **Matrix:** SOIL

Client Sample ID: NE Corner
Collection Date: 5/20/2013 11:28:00 AM
Received Date: 5/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	4.9	1.5		mg/Kg	5	5/23/2013 5:44:30 PM	7593
Chloride	1000	30		mg/Kg	20	5/23/2013 5:56:55 PM	7593
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	5/23/2013 5:44:30 PM	7593
Bromide	4.0	1.5		mg/Kg	5	5/23/2013 5:44:30 PM	7593
Nitrogen, Nitrate (As N)	11	1.5		mg/Kg	5	5/23/2013 5:44:30 PM	7593
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	5/23/2013 5:44:30 PM	7593
Sulfate	710	7.5		mg/Kg	5	5/23/2013 5:44:30 PM	7593
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	0.69	0.16		mg/kg	5	5/29/2013 11:49:15 AM	7635
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	5.0		mg/Kg	2	5/29/2013 9:43:17 AM	7618
Barium	1300	5.0		mg/Kg	50	5/30/2013 9:35:23 AM	7618
Cadmium	ND	0.20		mg/Kg	2	5/29/2013 9:43:17 AM	7618
Calcium	5700	50		mg/Kg	2	5/30/2013 9:27:58 AM	7618
Chromium	6.5	0.60		mg/Kg	2	5/29/2013 9:43:17 AM	7618
Lead	4.8	0.50		mg/Kg	2	5/29/2013 9:43:17 AM	7618
Magnesium	2900	50		mg/Kg	2	5/30/2013 9:27:58 AM	7618
Potassium	2100	100		mg/Kg	2	5/30/2013 9:27:58 AM	7618
Selenium	ND	5.0		mg/Kg	2	5/30/2013 9:27:58 AM	7618
Silver	ND	0.50		mg/Kg	2	5/29/2013 9:43:17 AM	7618
Sodium	5200	50		mg/Kg	2	5/30/2013 9:27:58 AM	7618
SAR SOLUBLE CATIONS						Analyst: **JLF**	
Sodium Adsorption Ratio	330	0			1	5/28/2013 2:49:00 PM	7596
RESISTIVITY						Analyst: **JML**	
Resistivity	224	1.00		Ohms * cm	1	5/22/2013 6:55:00 PM	7575

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates
Project: SW Disposal
Lab ID: 1305837-009 **Matrix:** SOIL

Client Sample ID: NW Corner
Collection Date: 5/20/2013 11:33:00 AM
Received Date: 5/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	3.4	1.5		mg/Kg	5	5/23/2013 6:34:10 PM	7593
Chloride	1200	75		mg/Kg	50	5/24/2013 3:42:57 PM	7593
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	5/23/2013 6:34:10 PM	7593
Bromide	4.1	1.5		mg/Kg	5	5/23/2013 6:34:10 PM	7593
Nitrogen, Nitrate (As N)	23	1.5		mg/Kg	5	5/23/2013 6:34:10 PM	7593
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	5/23/2013 6:34:10 PM	7593
Sulfate	1100	30		mg/Kg	20	5/23/2013 6:46:35 PM	7593
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	0.19	0.033		mg/kg	1	5/29/2013 11:22:13 AM	7635
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	13		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Barium	460	1.0		mg/Kg	10	5/30/2013 9:41:14 AM	7618
Cadmium	ND	0.50		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Calcium	3500	130		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Chromium	5.9	1.5		mg/Kg	5	5/31/2013 4:04:28 PM	7618
Lead	3.7	1.3		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Magnesium	2500	130		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Potassium	2000	250		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Selenium	ND	13		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Silver	ND	1.3		mg/Kg	5	5/30/2013 9:38:08 AM	7618
Sodium	4900	130		mg/Kg	5	5/30/2013 9:38:08 AM	7618
SAR SOLUBLE CATIONS						Analyst: **JLF**	
Sodium Adsorption Ratio	810	0			1	5/28/2013 2:49:00 PM	7596
RESISTIVITY						Analyst: **JML**	
Resistivity	186	1.00		Ohms * cm	1	5/22/2013 6:55:00 PM	7575

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates
Project: SW Disposal
Lab ID: 1305837-010 **Matrix:** SOIL

Client Sample ID: SW Corner
Collection Date: 5/20/2013 11:38:00 AM
Received Date: 5/21/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	7.5	1.5		mg/Kg	5	5/23/2013 6:59:00 PM	7593
Chloride	1400	75		mg/Kg	50	5/24/2013 3:55:22 PM	7593
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	5/23/2013 6:59:00 PM	7593
Bromide	5.2	1.5		mg/Kg	5	5/23/2013 6:59:00 PM	7593
Nitrogen, Nitrate (As N)	35	1.5		mg/Kg	5	5/23/2013 6:59:00 PM	7593
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	5/23/2013 6:59:00 PM	7593
Sulfate	2600	30		mg/Kg	20	5/23/2013 7:11:24 PM	7593
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	0.83	0.16		mg/kg	5	5/29/2013 11:51:05 AM	7635
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	5.0		mg/Kg	2	5/29/2013 10:04:03 AM	7618
Barium	1300	5.0		mg/Kg	50	5/31/2013 4:10:11 PM	7618
Cadmium	ND	0.20		mg/Kg	2	5/29/2013 10:04:03 AM	7618
Calcium	7900	1200		mg/Kg	50	5/31/2013 4:10:11 PM	7618
Chromium	7.4	0.60		mg/Kg	2	5/29/2013 10:04:03 AM	7618
Lead	5.5	0.50		mg/Kg	2	5/29/2013 10:04:03 AM	7618
Magnesium	3900	1200		mg/Kg	50	5/31/2013 4:10:11 PM	7618
Potassium	2700	2500		mg/Kg	50	5/31/2013 4:10:11 PM	7618
Selenium	ND	5.0		mg/Kg	2	5/31/2013 4:07:21 PM	7618
Silver	ND	0.50		mg/Kg	2	5/29/2013 10:04:03 AM	7618
Sodium	9300	1200		mg/Kg	50	5/31/2013 4:10:11 PM	7618
SAR SOLUBLE CATIONS						Analyst: **JLF**	
Sodium Adsorption Ratio	810	0			1	5/28/2013 2:49:00 PM	7596
RESISTIVITY						Analyst: **JML**	
Resistivity	142	1.00		Ohms * cm	1	5/22/2013 6:55:00 PM	7575

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: SMA-FARM | Work Order Number: 1305837 | RcptNo: 1

Received by/date: CM 05/21/13

Logged By: Anne Thorne 5/21/2013 10:00:00 AM Anne Thorne

Completed By: Anne Thorne 5/21/2013 Anne Thorne

Reviewed By: TO 05/21/2013

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No.	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: SIMA - Farmington

Mailing Address: 2101 San Juan Blvd

Phone #: 505-325-7535

email or Fax#: steven.moskal@soudermiller.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other ______
☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: SW Disposal

Project #: 5122412

Project Manager: Cindy Gray

Sampler: Steve Moskal / Shawna Chubbuck

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1305837	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals (6010) + cations	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	6010B SAR	Resistivity	2320 Alkalinity (Bicarbs)	300.0 anions	Air Bubbles (Y or N)
5/20/13	1026	Soil	[redacted]	3x8oz	none	-001							↓					↓	↓	↓	↓	
↓	1037	↓	[redacted]	↓	↓	-002																
	1051		[redacted]			-003																
	1057		[redacted]			-004																
	1112		[redacted]			-005																
	1116		[redacted]			-006																
	1122		SE corner			-007																
	1128		NE corner			-008																
	1133		NW corner			-009																
	1138		SW corner			-010																
	1205		[redacted]			-011																
↓	1214	↓	[redacted]	↓	↓	-012							↓					↓	↓	↓	↓	

Date:	Time:	Relinquished by:	Received by:	Date	Time
5/20/13	1640	[signature]	Christine Walla [signature]	5/20/13	1640
5/20/13	1740	Christine Walla [signature]	[signature]	05/21/13	1000

Remarks: Please email Report to
Shawna.Chubbuck@Soudermiller.com
cindy.gray@ " "
denny.faust@ " "
per SC all anions /AT 05/21/13

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

ATTACHMENT #2
Excerpt from JFJ Land Farm Permit NM-01-00101B

must be repaired. A record of inspections and repairs must be kept and made available for OCD review.

9. There may be no ponding, pooling or run-off of water allowed. Any ponding of precipitation must be removed within 72 hours of discovery.

10. The portion of the facility containing contaminated soils must be bermed to prevent run-off and run-on. A perimeter berm must be constructed and maintained such that it is capable of containing precipitation from a one-hundred year flood for the specific region. Individual cells within the facility must be contained with two (2) foot berms.

11. All above-ground tanks must be bermed to contain one and one-third the volume of the largest tank or all interconnected tanks. All tanks must be labeled as to contents and hazards

12. All new or replacement above-ground tanks to be used longer than six (6) months containing materials other than fresh water must be placed on an impermeable pad and be bermed so that the containment area will hold one and one-third the volume of the largest tank or all interconnected tanks.

13. All temporary frac tanks installed at the facility for less than six (6) months containing materials other than fresh water must be bermed so that the containment area will hold one and one-third the volume of the largest tank or all interconnected tanks.

14. The OCD Santa Fe and Aztec District office must be notified within 24 hours of discovery of a spill or leak.

15. Exempt contaminated soils must be placed in the facility so that they are physically separate (*i.e.*, bermed) from non-exempt contaminated soils. There may be no mixing of exempt and non-exempt contaminated soils.

16. In the landfarm, successive lifts of contaminated soils or stabilized material may not be spread until a laboratory measurement of total petroleum hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations must be maintained at the facility. Authorization from the OCD must be obtained prior to application of successive lifts and/or removal or reuse of the remediated soils.

17. Compost piles may not be dismantled until a laboratory measurement of total petroleum hydrocarbons (TPH) in the compost pile is less than 100 parts per million (ppm), the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations must be maintained at the facility. Authorization from the OCD must be obtained prior to dismantling of the compost pile and/or removal or reuse of the remediated soils.

ATTACHMENT #3
Remediated Soils Laboratory Analytical Results

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 28, 2014

MARCELLA MARQUEZ

INDUSTRIAL ECOSYSTEMS

49 CR 3150

AZTEC, NM 87410

RE: JFJ

Enclosed are the results of analyses for samples received by the laboratory on 02/07/14 11:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 777

H400390-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	ND		16.0	mg/kg	4	4020713	AP	10-Feb-14	4500-Cl-B	
Organic Compounds										
TPH 418.1	184		100	mg/kg	10	4021005	CK	10-Feb-14	418.1	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Toluene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Ethylbenzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total Xylenes*	ND		0.150	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total BTEX	ND		0.300	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*117 %*	*89.4-126*		*4020609*	MS	*07-Feb-14*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
DRO >C10-C28	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
Surrogate: 1-Chlorooctane			*96.8 %*	*65.2-140*		*4020608*	ms	*07-Feb-14*	*8015B*	
Surrogate: 1-Chlorooctadecane			*99.2 %*	*63.6-154*		*4020608*	ms	*07-Feb-14*	*8015B*	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 784

H400390-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	32.0		16.0	mg/kg	4	4020713	AP	10-Feb-14	4500-Cl-B	
Organic Compounds										
TPH 418.1	213		100	mg/kg	10	4021005	CK	10-Feb-14	418.1	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Toluene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Ethylbenzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total Xylenes*	ND		0.150	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total BTEX	ND		0.300	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*119 %*	*89.4-126*		*4020609*	MS	*07-Feb-14*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
DRO >C10-C28	12.6		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
Surrogate: 1-Chlorooctane			*97.2 %*	*65.2-140*		*4020608*	ms	*07-Feb-14*	*8015B*	
Surrogate: 1-Chlorooctadecane			*101 %*	*63.6-154*		*4020608*	ms	*07-Feb-14*	*8015B*	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 802

H400390-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	240		16.0	mg/kg	4	4020713	AP	10-Feb-14	4500-Cl-B	
Organic Compounds										
TPH 418.1	296		100	mg/kg	10	4021005	CK	10-Feb-14	418.1	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Toluene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Ethylbenzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total Xylenes*	ND		0.150	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total BTEX	ND		0.300	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*115 %*	*89.4-126*		*4020609*	MS	*07-Feb-14*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
DRO >C10-C28	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
Surrogate: 1-Chlorooctane			*86.8 %*	*65.2-140*		*4020608*	ms	*07-Feb-14*	*8015B*	
Surrogate: 1-Chlorooctadecane			*88.2 %*	*63.6-154*		*4020608*	ms	*07-Feb-14*	*8015B*	
Green Analytical Laboratories										
General Chemistry										
% Dry Solids	94.3			%	1	B402164	LLG	24-Feb-14	EPA160.3	H1
Total Metals by ICP										
Arsenic	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Barium	155		1.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Cadmium	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Chromium	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Lead	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 802

H400390-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
Total Metals by ICP										
Selenium	ND		20.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Silver	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Total Mercury by CVAA										
Mercury	0.559		0.103	mg/kg dry	485	B402182	JGS	26-Feb-14	EPA7471	M5

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 822

H400390-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	64.0		16.0	mg/kg	4	4020713	AP	10-Feb-14	4500-Cl-B	
Organic Compounds										
TPH 418.1	337		100	mg/kg	10	4021005	CK	10-Feb-14	418.1	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Toluene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Ethylbenzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total Xylenes*	ND		0.150	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total BTEX	ND		0.300	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*119 %*	*89.4-126*		*4020609*	MS	*07-Feb-14*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
DRO >C10-C28	34.9		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
Surrogate: 1-Chlorooctane			*91.8 %*	*65.2-140*		*4020608*	ms	*07-Feb-14*	*8015B*	
Surrogate: 1-Chlorooctadecane			*95.4 %*	*63.6-154*		*4020608*	ms	*07-Feb-14*	*8015B*	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 824

H400390-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	16.0		16.0	mg/kg	4	4020713	AP	10-Feb-14	4500-Cl-B	
Organic Compounds										
TPH 418.1	120		100	mg/kg	10	4021005	CK	10-Feb-14	418.1	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Toluene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Ethylbenzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total Xylenes*	ND		0.150	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total BTEX	ND		0.300	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*115 %*	*89.4-126*		*4020609*	MS	*07-Feb-14*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
DRO >C10-C28	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
Surrogate: 1-Chlorooctane			*95.2 %*	*65.2-140*		*4020608*	ms	*07-Feb-14*	*8015B*	
Surrogate: 1-Chlorooctadecane			*97.3 %*	*63.6-154*		*4020608*	ms	*07-Feb-14*	*8015B*	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 856

H400390-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	112		16.0	mg/kg	4	4020713	AP	10-Feb-14	4500-Cl-B	
Organic Compounds										
TPH 418.1	371		100	mg/kg	10	4021005	CK	10-Feb-14	418.1	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Toluene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Ethylbenzene*	ND		0.050	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total Xylenes*	ND		0.150	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Total BTEX	ND		0.300	mg/kg	50	4020609	MS	07-Feb-14	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*118 %*	*89.4-126*		*4020609*	MS	*07-Feb-14*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10	ND		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
DRO >C10-C28	11.6		10.0	mg/kg	1	4020608	ms	07-Feb-14	8015B	
Surrogate: 1-Chlorooctane			*99.1 %*	*65.2-140*		*4020608*	ms	*07-Feb-14*	*8015B*	
Surrogate: 1-Chlorooctadecane			*102 %*	*63.6-154*		*4020608*	ms	*07-Feb-14*	*8015B*	
Green Analytical Laboratories										
General Chemistry										
% Dry Solids	90.3			%	1	B402164	LLG	24-Feb-14	EPA160.3	HI
Total Metals by ICP										
Arsenic	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Barium	348		1.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Cadmium	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Chromium	20.0		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Lead	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

PILE 856

H400390-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
Total Metals by ICP										
Selenium	ND		20.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Silver	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Total Mercury by CVAA										
Mercury	ND		0.106	mg/kg dry	480	B402182	JGS	26-Feb-14	EPA7471	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

COMP 777 & 784

H400390-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
General Chemistry										
% Dry Solids	93.9			%	1	B402164	LLG	24-Feb-14	EPA160.3	H1
Total Metals by ICP										
Arsenic	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Barium	169		1.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Cadmium	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Chromium	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Lead	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Selenium	ND		20.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Silver	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Total Mercury by CVAA										
Mercury	ND		0.105	mg/kg dry	495	B402182	JGS	26-Feb-14	EPA7471	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

COMP 822 & 824

H400390-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
General Chemistry										
% Dry Solids	91.8			%	1	B402164	LLG	24-Feb-14	EPA160.3	H1
Total Metals by ICP										
Arsenic	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Barium	174		1.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Cadmium	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Chromium	5.09		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Lead	ND		10.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Selenium	ND		20.0	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Silver	ND		5.00	mg/kg dry	100	B402159	JGS	25-Feb-14	EPA6010 B	
Total Mercury by CVAA										
Mercury	ND		0.108	mg/kg dry	495	B402182	JGS	26-Feb-14	EPA7471	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

INDUSTRIAL ECOSYSTEMS 49 CR 3150 AZTEC NM, 87410	Project: JFJ Project Number: 2078 Project Manager: MARCELLA MARQUEZ Fax To: (505) 632-1876	Reported: 28-Feb-14 12:50

COMP 777,784,822,824,802,856

H400390-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
General Chemistry										
% Dry Solids	92.4			%	1	B402164	LLG	24-Feb-14	EPA160.3	H1
Soluble (DI Water Extraction)										
Alkalinity, Total	113		10.0	mg/kg dry	4	B402190	ABP	25-Feb-14	2320 B	H1
Chloride	99.6		40.0	mg/kg dry	4	B402189	ABP	25-Feb-14	4500-Cl- C	
Sulfate	5710		866	mg/kg dry	80	B402188	ABP	26-Feb-14	4500-SO42-E	
Saturated Paste Extraction										
Calcium	492		10.0	mg/kg dry	10	B402197	JGS	27-Feb-14	EPA200.7	
Conductivity	3530			umhos/cm	1	B402201	JAW	27-Feb-14	ASA#9 10-3.3	
Magnesium	141		10.0	mg/kg dry	10	B402197	JGS	27-Feb-14	EPA200.7	
Potassium	10.1		10.0	mg/kg dry	10	B402197	JGS	27-Feb-14	EPA200.7	
SAR	2.77			[blank]	1	B402197	JGS	27-Feb-14	Calculation	
Sodium	271		10.0	mg/kg dry	10	B402197	JGS	27-Feb-14	EPA200.7	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Green Analytical Laboratories

RUSH Please

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: I.E.I

Contact: Marcella

Address: 49 CR 3150
Aztec, NM 87410

Phone Number: 505-632-1782

Email: Marcella@industrialecosystems.com

NOTES:
1) Ensure proper container packaging.
2) Ship samples promptly following collection.
3) Designate Sample Reject Disposition.

PO# 2072

Project Name: JTJ

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify) ____

FOR GAL USE ONLY
GAL JOB #

Samplers Signature:

Lab Name: Green Analytical Laboratories (970) 247-4220 FAX (970) 247-4227

Address: 75 Suttle Street, Durango, CO 81303 www.greenanalytical.com

Sample ID	Collection: Date	Collection: Time	Misc: Collected by: (Init.)	Misc: Matrix Type From Table 1	Misc: No. of Containers	Misc: Sample Filtered? Y/N	Preservative(s): Unpreserved (Ice Only)	Preservative(s): HNO3	Preservative(s): HCL	Preservative(s): H2SO4	Preservative(s): NAOH	Preservative(s): Other (Specify)	Analyses Required: TPH-418.1	DRO/GRO-8015M	BTEX-8021B	Chloride-300.0	Total RCRA Metals (Ba, Cd, Cr, Pb, Se, Ag)	Comments
H40039D																		
1. Pit [redacted]	2/6/14	10:10	RC	3	1	N							✓	✓	✓	✓		
2. [redacted]		10:30											✓	✓	✓	✓		
3. [redacted]		10:50											✓	✓	✓	✓		
4. [redacted]		11:20											✓	✓	✓	✓		
5. 707		11:45											✓	✓	✓	✓		
6. 784		12:40											✓	✓	✓	✓		
7. 802		1:16											✓	✓	✓	✓	✓	
8. 822		1:30											✓	✓	✓	✓		
9. 824		1:45											✓	✓	✓	✓		
10. 856		2:00											✓	✓	✓	✓	✓	

Relinquished by:	Date: 2-6-14	Time: 2:10	Received by:	Date: 2/6/14	Time: 2:10
Relinquished by:	Date: 2/6/14	Time: 1430	Received by:	Date: 2/6/14	Time: 1430

* Sample Reject: [ ] Return [ ] Dispose [ ] Store (30 Days)

2/6/14 1600 FedEx 2/6/14 1600 3.2°C

2/7/14 11:15

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: IFI		**BILL TO**	
Project Manager: Marcella		P.O. #: 2078	
Address: 49 CR 3150		Company:	
City: Aztec	State: NM Zip: 87410	Attn:	
Phone #: 505-632-1782	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name: JFJ		State:	Zip:
Project Location:		Phone #:	
Sampler Name:		Fax #:	

ANALYSIS REQUEST: Total RCRA 8 metals 6010 (Rush); Cation/Anion (no Rush); EC; SAR (report cations from SAR)

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Total RCRA 8 metals 6010	Cation/Anion	EC	SAR
H400390-11	Comp 777 & 784		1			✓					✓		2/6/14		✓			
12	Comp 822 & 824		1			✓					✓		〃		✓			
13	Comp 777, 784, 822, 824, 802, 856		1			✓					✓		〃			✓	✓	✓

Relinquished By:	Date: / Time:	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: / Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: (Added on analyses, 2/20/14) as per Marcella. ch 2/21/14

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326