



October 17, 2011

Alex Fischer, P.G.
Environmental Supervisor - Western Colorado
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

**RE: Vaquero Energy
Blue Gravel Pit Closure Report
Moffat County, CO**

Dear Mr. Fischer:

The purpose of this report is to inform you of the completion of pit closure activities associated with the Vaquero Energy, Inc. (Vaquero) Blue Gravel Pits in Moffat County, Colorado. As directed, Colorado Oil and Gas Conservation Commission (COGCC) Form 27s outlining the closure plan for seventeen pits have been completed and subsequently approved by the COGCC. A copy of the Form 27s is included in Appendix A. A list of the 18 pit locations undergoing closure activities is shown below. A map indicating sample and pit locations is included in Appendix D.

- | | |
|----------------------------|---------------------------------------|
| 1) Blue Gravel 7-25 | 10) Blue Gravel 2-26 |
| 2) Blue Gravel 1-26 | 11) Blue Gravel 4-25 |
| 3) Blue Gravel 9-36 | 12) Blue Gravel 6-24 |
| 4) Blue Gravel 1-35 | 13) Blue Gravel 5-24 |
| 5) Blue Gravel 4-35 | 14) Blue Gravel 1-25 |
| 6) Blue Gravel 4-36 | 15) Blue Gravel 4-24 |
| 7) Blue Gravel 1-36 | 16) Blue Gravel 1-23 (Site 1) |
| 8) Blue Gravel 2-25 | 17) Blue Gravel 5-35 |
| 9) Blue Gravel 6-25 | 18) Blue Gravel 1-23 (Site 2) |

PHASE I

In Phase I of pit closure activities, Kleinfelder and Vaquero Energy identified seven pit locations that represented a cross section of typical site conditions to conduct a background sampling program as outlined in the Form 27s. On July 27, 2011, Kleinfelder personnel visited the Vaquero Energy site and collected two soil samples; a composite soil screening sample and a background sample at each of the seven pit locations: A list of the seven selected screened pits is shown below and photographic documentation is included in Appendix B.

- Blue Gravel 1-26
- Blue Gravel 2-25
- Blue Gravel 7-25
- Blue Gravel 5-24
- Blue Gravel 4-35
- Blue Gravel 1-35
- Blue Gravel 4-36

The composite pit soil samples were submitted to an independent laboratory for analysis of the full COGCC 910 soil list and results were compared to the Table 910-1 standards. In addition, background soil samples were collected outside of the pit areas and analyzed for arsenic to provide representative background concentrations.

The results of the screening soil samples indicated concentrations of benzene, total volatile petroleum hydrocarbons (TVPH), total extractable petroleum hydrocarbons (TEPH), arsenic or sodium absorption ratio (SAR) exceeding the Table 910-1 standards in six of the seven pits. Pit 5-35 did not have any constituents detected above Table 910-1 standards (or background) and with State approval was subsequently backfilled and closed without further assessment. In all cases, the arsenic concentration in the pit sample was less than the concentration in the background sample. Due to the elevated background levels, we proposed not to include arsenic in the list of constituents of concern during the closure of the remaining 17 pits. These results were provided to the COGCC and approved in a letter report dated September 1, 2011.

Based on the results of the screening samples, Kleinfelder proposed a specific subset of the 910 soil list. Confirmation soil samples, subsequent to excavation of each of the remaining 17 pits, would be analyzed for a subset of the 910-1 soil list that included benzene, TVPH, TEPH and SAR.

PHASE II

During Phase II of pit closure activities, as outlined in the Remediation Work plan section of Form 27, impacted soils were excavated from the pits using a backhoe. The pits were excavated to a depth between five and ten feet below ground surface (bgs). On three separate occasions between September 15, 2011 and September 23, 2011, Kleinfelder personnel visited the site and collected composite soil samples from the bottom of the remaining excavated pits to confirm compliance with the above-mentioned subset of constituents and compared to Table 910-1 standards. Excavated material from the impacted pits was disposed off-site at a local landfill (Twin Enviro Services). Photographic documentation of the pit excavations and sample collection locations are included in Appendix B.

The composite pit soil samples were submitted to an independent laboratory for analysis of the specific subset of the COGCC 910 soil list and results were compared to the Table 910-1 standards.

SAR exceeded the Table 910-1 standards in eleven of the seventeen pits. Based on the fact that elevated SAR levels at depths below the root zone will not impact future vegetation establishment, and discussions with the COGCC, these eleven pits were cleared for closure.

The results of the composite soil samples collected from within fifteen of the pits indicated that concentrations of BTEX, TVPH and TEPH were below Table 910-1 standards.

Two of the pits, BG 7-25 and BG 1-26 exceeded Table 910-1 standards for benzene concentration levels. The 910-1 standard for benzene concentrations in soil is 0.17 mg/kg. Pit BG 7-25 had a benzene concentration level of 0.18 mg/kg and pit BG 1-26 had a benzene concentration level of 0.28 mg/kg. In addition BG 1-26 exceeded the 500mg/kg 910-1 standard for TPH, with a soil concentration level of 550 mg/kg. Both pits BG 7-25 and pit BG 1-26 were excavated an additional two to four feet bgs and additional composite soil samples were collected for analysis. The results of the resampled composite soil sample analysis collected from the bottom of pits BG 7-25 and BG 1-26 indicated that benzene and TPH concentration levels were below Table 910-1 standards. Analytical parameters and concentration levels are presented below in Table 2-1. A copy of the laboratory analysis is included in Appendix C.

TABLE 2-1 SOIL SAMPLE RESULTS BLUE GRAVEL PIT CLOSURES

Sample ID	Facility ID	Sodium Adsorption Ratio (SAR)	Benzene (mg/kg)	TPH Low Fraction (mg/kg)	TPH High Fraction (mg/kg)
BG6-24-091511 (5'-6')	112276	61	<0.050	33	77
BG5-24-091511 (5'-6')	112278	13	<0.0025	<0.50	12
BGS1-25A-091511 (5'-6')	112283	12	<0.0025	<0.50	<4.0
BG1-25B-091511 (9'-10')	112283	6.4	<0.0025	0.59	31
BG4-24-091511 (5'-6')	112277	58	0.0047	11	5.8
BG1-23-091511 (10')	112275	110	<0.050	48	<4.0
BG1-23-091611 (7'-8')	112275	25	<0.0025	<0.50	<4.0
BG7-25-091611 (7'-8')	112284	28	0.18	180	17
BG4-25-091611 (7'-8')	112280	8.6	0.031	130	14
BG1-26-091611 (7'-8')	112285	20	0.28	550	460
BG2-26-091611 (7'-8')	112286	2.7	<0.0025	<0.50	<4.0
BG6-25-091611 (10'-11')	112281	81	<0.0025	<0.50	140

Sample ID	Facility ID	Sodium Adsorption Ratio (SAR)	Benzene (mg/kg)	TPH Low Fraction (mg/kg)	TPH High Fraction (mg/kg)
BG4-35-092011 (9'-10')	112290	4.7	<0.0025	6.3	38
BG4-36-092011 (9'-10')	112296	130	0.0052	8.2	86
BG1-36-092011 (9'-10')	112297	39	<0.0025	<0.50	67
BG2-25-092011 (9'-10')	112282	1.5	<0.0025	34	38
BG7-25-092311 (Retest at 10'-11')	112284	NA	<0.0025	1.2	NA
BG1-26-092311 (Retest at 9'-10')	112285	NA	<0.0025	2.6	NA
BG9-36-092311 (3'-4')	112292	2.5	<0.0025	<0.50	<0.50
BG1-35-092311 (9'-10')	112288	50	<0.0025	8.7	<4.0
COGCC Table 910-1 Standards		<12	0.17	500*	500*

*Value is a sum of total extractable and total volatile petroleum hydrocarbons

The Remediation Work plan as outlined in the approved Form 27s was utilized for backfilling the pits and the reseeding process. Vaquero reseeded the pit locations with the seed mixture that was outlined in the Form 27s. The reseeding was completed between October 10-12, 2011. Photographic documentation of the backfilled pit excavations is included in Appendix B.

Please provide us with approval of the pit closures for the eighteen Vaquero Energy, Inc. (Vaquero) Blue Gravel Pits in Moffat County, Colorado. If you have any questions or would like to discuss the closure activities, please contact Derek Bowman at 303-781-8211.

Respectfully submitted,

KLEINFELDER



Derek Bowman, CHMM
Project Manager II



Steve Baur
Project Professional



APPENDIX A

Form 27s



FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission



#5922

FOR OGCC USE ONLY

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

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.

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 15545 Hermosa Road

City: Bakersfield State: CA Zip: 93307

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: 661-366-2959

API Number: 05-081-06077

County: Moffat

Facility Name: Blue Gravel 1-23 pit

Facility Number: 112275 / Location # 312880

Well Name: Blue Gravel

Well Number: 1-23

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SENE 23 9N 91W 6th PM Latitude: 40.725536 Longitude: -107.564092

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 270 east of facility; no water wells within 1/4 mile

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

Impacted Media (check):

☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALATION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35). 05-081-06744

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The lateral and vertical extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.

Submit Page 2 with Page 1



REMEDIAL WORKPLAN (Cont.)

Tracking Number:	
Name of Operator:	
OGCC Operator No:	
Received Date:	
Well Name & No:	
Facility Name & No:	

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean or blended soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies and landowners will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or used as fill material.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	Date Site Investigation Completed:	Date Remediation Plan Submitted:
Remediation Start Date:	Anticipated Completion Date:	Actual Completion Date:

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

Print Name: Hector Gonzales

Signed: *Hector Gonzales*

Title: Production Foreman

Date: 7/6/2011

OGCC Approved: *[Signature]*

Title: *Env. Supv*

Date: 7/12/11

See Attached email as part of the Remediation Plan

Fischer, Alex

To: Doug Henderer; hgonzalez@VaqueroEnergy.com
Cc: Brad Baum; Derek Bowman
Subject: RE: Vaquero Form 27

Doug,

I feel that this would be a good practical approach and should be included in the Form 27s.

Thanks
Alex

Alex Fischer, P.G.
Environmental Supervisor - Western Colorado
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203
(303) 894-2100 ext. 5138
(303) 894-2109 fax
alex.fischer@state.co.us

From: Doug Henderer [<mailto:dhenderer@kleinfelder.com>]
Sent: Monday, July 11, 2011 5:20 PM
To: Fischer, Alex; hgonzalez@VaqueroEnergy.com
Cc: Brad Baum; Derek Bowman
Subject: RE: Vaquero Form 27

Alex,

Our thoughts were to screen several pits for the full 910 soil list to identify the constituents of concern. From that we would develop a background sampling program if needed, and identify a subset of constituents (TPH, benzene, etc.) for monitoring the progress of the excavation work. Do you find this approach acceptable? Do you recommend that the full 910 list be analyzed for samples from the pit prior to final closure?

Thank you,

Doug

From: Fischer, Alex [<mailto:Alex.Fischer@state.co.us>]
Sent: Monday, July 11, 2011 2:12 PM
To: Doug Henderer; hgonzalez@VaqueroEnergy.com
Cc: Brad Baum; Derek Bowman
Subject: RE: Vaquero Form 27

Doug and Hector,

Were you going to collect samples for characterization to determine impact, if any? And are you sampling for the entire 910-1 list?

Please include the API number for the Blue Gravel 1-35).

Thanks
Alex

Alex Fischer, P.G.
Environmental Supervisor - Western Colorado
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203
(303) 894-2100 ext. 5138
(303) 894-2109 fax
alex.fischer@state.co.us

From: Doug Henderer [<mailto:dhenderer@kleinfelder.com>]
Sent: Thursday, July 07, 2011 11:27 AM
To: Fischer, Alex; Hector Gonzalez (hgonzalez@VaqueroEnergy.com)
Cc: Brad Baum; Derek Bowman
Subject: Vaquero Form 27

Alex,

Thank you again for your time last month to meet with us concerning the closure of the Vaquero Blue Gravel pits. As discussed, attached is the first Form 27 for your review. Upon your approval, we will forward executed forms 27 for the remaining pits.

Concerning the salamanders present at the Blue Gravel 1-35 pit, we do not believe that they are protected. Our research indicates that there are no USFWS listed amphibian T&E species in Moffat County, and no salamanders are listed in the state species of concern or BLM special status species databases. A photograph of a salamander is attached for your reference.

We appreciate your assistance, please let us know if you have any questions or concerns.

Doug

Douglas Henderer, PE
Sr. Principal Professional
300 E. Mineral Ave., Suite 7
Littleton, CO 80122
O| 303.781.8211 x 231
C| 303.809.2427
F| 303.781.1167

State of Colorado Oil and Gas Conservation Commission



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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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy IncAddress: 5060 California Ave, Ste 640City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector GonzalesNo: 661 363-7240

Fax: _____

API Number: 05-081-06061County: MoffatFacility Name: Blue Gravel 1-25 pitFacility Number: 112283 / Location # 312878Well Name: Federal 1-25Well Number: 1-25Location: (QtrQtr, Sec, Twp, Rng, Meridian): NENW 25 9N 91W 6th PMLatitude: 40.714936 Longitude: -107.554451

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced WaterSite 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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 1500 feet southwest of facility;no water wells within 1/4mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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SITE INVESTIGATION AND REMEDIATION WORKPLAN

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318Name of Operator: Vaquero Energy IncAddress: 5060 California Ave, Ste 640City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector GonzalesNo: 661 363-7240

Fax: _____

API Number: 05-081-06231County: MoffatFacility Name: Blue Gravel 1-26 pitFacility Number: 112285 / Location # 312928Well Name: Federal 1-26Well Number: 1-26Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 26 9N 91W 6th PMLatitude: 40.714936 Longitude: -107.568992

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Forelle Loam, 3 to 12 percent slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 580 feet east of facility; no water wells within 1/4 mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

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Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



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Page 2

REMEDIATION WORKPLAN (Cont.)

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It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Western wheatgrass, Wyoming big sagebrush, Needleandthread, Prairie Junegrass, Sandberg bluegrass, Bluebunch wheatgrass and Indian ricegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

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State of Colorado Oil and Gas Conservation Commission



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

FOR OGCC USE ONLY

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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy IncAddress: 5060 California Ave, Ste 640City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector GonzalesNo: 661 363-7240

Fax: _____

API Number: 05-081-06744County: MoffatFacility Name: Blue Gravel 1-35 pitFacility Number: 112288 / Location # 313024Well Name: Federal 1-35Well Number: 1-35Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWSE 35 9N 91W 6th PM Latitude: 40.693616 Longitude: -107.570322

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced WaterSite 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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Ironsprings Loamy Sand, 1 to 15 percent slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 490 feet north of facility;no water wells within 1/4 mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2
REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Needleandthread, Wyoming big sagebrush, Antelope bitterbrush, Indian ricegrass, Western wheatgrass, Arrowleaf balsamroot, Bottlebrush squirreltail, Other perennial forbs, Other perennial grasses, Other shrubs and Prairie Junegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

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OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06187

County: Moffat

Facility Name: Blue Gravel 1-36 pit

Facility Number: 112297 / Location # 312914

Well Name: Blue Gravel - State 1-36

Well Number: 1-36

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NENW 36 9N 91W 6th PM Latitude: 40.700716 Longitude: -107.555361

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Berlake Sandy Loam, 3 to 12 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 1200 feet east of facility;

no water wells within 1/4 mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number:	_____
Name of Operator:	_____
OGCC Operator No:	_____
Received Date:	_____
Well Name & No:	_____
Facility Name & No:	_____

REMEDATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Wyoming big sagebrush, Needleandthread, Indian ricegrass, Antelope bitterbrush, Bluebunch wheatgrass, Prairie Junegrass and Western wheatgrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____	Date Site Investigation Completed: _____	Date Remediation Plan Submitted: _____
Remediation Start Date: _____	Anticipated Completion Date: _____	Actual Completion Date: _____

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

Print Name: Hector Gonzales

Signed: _____

Title: Production Foreman

Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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SITE INVESTIGATION AND REMEDIATION WORKPLAN

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06681

County: Moffat

Facility Name: Blue Gravel 2-25 pit

Facility Number: 112282 / Location # 313015

Well Name: Federal 2-25

Well Number: 2-25

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NENW 25 9N 91W 6th PM Latitude: 40.707806/ Longitude: -107.550061

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 270 east of facility; no water wells within 1/4 mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06740

County: Moffat

Facility Name: Blue Gravel 2-26 pit

Facility Number: 112286 / Location # 313020

Well Name: Federal 2-26

Well Number: 2-26

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NESE 26 9N 91W 6th PM Latitude: 40.707826 Longitude: -107.564572

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Forelle Loam, 3 to 12 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 840 feet east of facility; no water wells within 1/4 mile

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

Impacted Media (check):

- ☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2
REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Western wheatgrass, Wyoming big sagebrush, Needleandthread, Prairie Junegrass, Sandberg bluegrass, Bluebunch wheatgrass and Indian ricegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

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Oil and Gas Conservation Commission



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OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax:

API Number: 05-081-06741

County: Moffat

Facility Name: Blue Gravel 4-24 pit

Facility Number: 112277 / Location # 313021

Well Name: Federal 4-24

Well Number: 4-24

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWSW 24 9N 91W 6th PM Latitude: 40.718496 Longitude: -107.559182

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 2000 feet southwest of facility;

no water wells within 1/4mile

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

Impacted Media (check):



Soils

Extent of Impact:

not yet determined

How Determined:



Vegetation



Groundwater



Surface Water

REMEDIALATION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including diskimg, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2
REMEDATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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FOR OGCC USE ONLY

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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06731

County: Moffat

Facility Name: Blue Gravel 4-25 pit

Facility Number: 112280 / Location # 313018

Well Name: Federal 4-25

Well Number: 4-25

Location: (Qtr, Sec, Twp, Rng, Meridian): SWNW 25 9N 91W 6th PM Latitude: 40.711376 Longitude: -107.559531

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Milren Fine Sandy Loam, 0 to 10 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 400 feet southwest of facility; no water wells within 1/4 mile

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

Impacted Media (check):



Soils

Extent of Impact:

not yet determined

How Determined:



Vegetation



Groundwater



Surface Water

REMEDIAL WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass and Prairie Junegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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FOR OGCC USE ONLY

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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy IncAddress: 5060 California Ave, Ste 640City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector GonzalesNo: 661 363-7240

Fax: _____

API Number: 05-081-06817County: MoffatFacility Name: Blue Gravel 4-35 pitFacility Number: 112290 / Location # 313046Well Name: Federal 4-35Well Number: 4-35Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWSE 35 9N 91W 6th PM Latitude: 40.690096 Longitude: -107.570572

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 1900 feet east of facility;no water wells within 1/4 mile**Description of Impact** (if previously provided, refer to that form or document):

Impacted Media (check):



Soils

Extent of Impact:

not yet determined

How Determined:



Vegetation



Groundwater



Surface Water

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

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Oil and Gas Conservation Commission



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SITE INVESTIGATION AND REMEDIATION WORKPLAN

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06749

County: Moffat

Facility Name: Blue Gravel 4-36 pit

Facility Number: 112296 / Location # 392289

Well Name: State 4-36

Well Number: 4-36

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NESW 36 9N 91W 6th PM Latitude: 40.693636 Longitude: -107.555911

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Borollic Natrargids-Borollic Haplargids-Ustic Torrifluvents complex, 0 to 20 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 180 feet northwest of facility;

no water wells within 1/4 mile

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

Impacted Media (check):

Extent of Impact:

How Determined:



Soils

not yet determined



Vegetation



Groundwater



Surface Water

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2
REMEDIAL WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Basin big sagebrush, Black greasewood, Bottlebrush squirreltail, Gardner's satlbush, Great Basin wildrye, Indian ricegrass, Needleandthread, Nevada bluegrass, Prairie Junegrass Sagebrush, Wheatgrass, Wyoming big sagebrush and Western wheatgrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06742

County: Moffat

Facility Name: Blue Gravel 5-24 pit

Facility Number: 112278 / Location # 313022

Well Name: Federal 5-24

Well Number: 5-24

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWSW 24 9N 91W 6th PM Latitude: 40.722026 Longitude: -107.559112

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 2650 north of facility;

no water wells within 1/4mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIAL WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

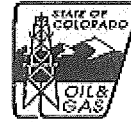
Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

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OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06818

County: Moffat

Facility Name: Blue Gravel 5-35 pit

Facility Number: 112289 / Location # 313047

Well Name: Federal 5-35

Well Number: 5-35

Location: (Qtr,Qtr, Sec, Twp, Rng, Meridian): NWSE 35 9N 91W 6th PM Latitude: 40.693616 Longitude: -107.570322

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Ironsprings Loamy Sand, 1 to 15 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 700 feet north of facility;

no water wells within 1/4 mile

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

Impacted Media (check):



Soils

Extent of Impact:

not yet determined

How Determined:



Vegetation



Groundwater



Surface Water

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number:	_____
Name of Operator:	_____
OGCC Operator No:	_____
Received Date:	_____
Well Name & No:	_____
Facility Name & No:	_____

REMEDIAL WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Needleandthread, Wyoming big sagebrush, Antelope bitterbrush, Indian ricegrass, Western wheatgrass, Arrowleaf balsamroot, Bottlebrush squirreltail, Other perennial forbs, Other perennial grasses, Other shrubs and Prairie Junegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____	Date Site Investigation Completed: _____	Date Remediation Plan Submitted: _____
Remediation Start Date: _____	Anticipated Completion Date: _____	Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado
Oil and Gas Conservation Commission



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

FOR OGCC USE ONLY

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): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06760

County: Moffat

Facility Name: Blue Gravel 6-24 pit

Facility Number: 112276 / Location # 313033

Well Name: Federal 6-24

Well Number: 6-24

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SESW 24 9N 91W 6th PM Latitude: 40.718496 Longitude: -107.554311

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 2500 feet southwest of facility;

no water wells within 1/4mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number:	_____
Name of Operator:	_____
OGCC Operator No:	_____
Received Date:	_____
Well Name & No:	_____
Facility Name & No:	_____

REMEDIAL WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species: Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass, Prairie Junegrass, Bottlebrush squirreltail, Wyoming big sagebrush, Needleandthread, Indian ricegrass, and Nevada bluegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____	Date Site Investigation Completed: _____	Date Remediation Plan Submitted: _____
Remediation Start Date: _____	Anticipated Completion Date: _____	Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

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State of Colorado
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FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

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OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy IncAddress: 5060 California Ave, Ste 640City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector GonzalesNo: 661 363-7240

Fax: _____

API Number: 05-081-06745County: MoffatFacility Name: Blue Gravel 6-25 pitFacility Number: 112281 / Location # 313025Well Name: Federal 6-25Well Number: 6-25Location: (QtrQtr, Sec, Twp, Rng, Meridian): NESW 25 9N 91W 6th PM Latitude: 40.707796 Longitude: -107.554881

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Milren Fine Sandy Loam, 0 to 10 percent slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 240 west of facility; no water wells within 1/4 mile

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

Impacted Media (check):

Extent of Impact:

How Determined:



Soils

not yet determined

Vegetation



Groundwater



Surface Water

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass and Prairie Junegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

Describe how source is to be removed:

The impacted soil will be excavated from the pit using a backhoe to an anticipated depth of 10 ft. The vertical and lateral extent of the excavation will be based upon visual evidence of impacted soil in conjunction with field PID headspace measurements. The excavated soil will be temporarily managed within a lined berm to prevent contamination of stormwater runoff. Soil samples will be collected from the excavated pit to confirm compliance with Table 910-1 standards. The soil samples will be analyzed for the full 910 soil list to identify constituents of concern. If the constituents of concern have been identified as part of a background sampling program on similar Blue Gravel Pits, the soil samples may only be analyzed for a specific subset of the 910 list.

State of Colorado Oil and Gas Conservation Commission



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SITE INVESTIGATION AND REMEDIATION WORKPLAN

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy IncAddress: 5060 California Ave, Ste 640City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector GonzalesNo: 661 363-7240

Fax: _____

API Number: 05-081-06743County: MoffatFacility Name: Blue Gravel 7-25 pitFacility Number: 112284 / Location # 313023Well Name: Federal 7-25Well Number: 7-25Location: (QtrQtr, Sec, Twp, Rng, Meridian): SENW 25 9N 91W 6th PM Latitude: 40.711356 Longitude: -107.554681

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced WaterSite 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.): RangelandSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Milren Fine Sandy Loam, 0 to 10 percent slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 905 feet west of facility; no water wells within 1/4 mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

See attached.

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.:

Excavated soils will be land treated in accordance with Rule 907.e.(2) through a combination of methods including disking, tilling, aerating, or adding nutrients such as microbes, water, or other amendments. The soil may also be blended with clean soil to meet Table 910-1 standards and utilized to backfill the excavation. Excess impacted soils may be transported to a local landfill for disposal. Manifests will be prepared for all soil transported to disposal.



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2

REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

The excavation will be filled with clean soil and contoured to match the surrounding topography. Reseeding will be performed using an appropriate seed mixture, which may contain the following species Alkali sagebrush, Western wheatgrass, Bluebunch wheatgrass and Prairie Junegrass. The NRCS, BLM, or other agencies will be consulted to determine the appropriate seed mix.

Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

REMEDIATION WORKPLAN

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CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☒ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 10318

Name of Operator: Vaquero Energy Inc

Address: 5060 California Ave, Ste 640

City: Bakersfield State: CA Zip: 93309

Contact Name and Telephone:

Hector Gonzales

No: 661 363-7240

Fax: _____

API Number: 05-081-06755

County: Moffat

Facility Name: Blue Gravel 9-36 pit

Facility Number: 112292 / Location # 313030

Well Name: State 9-36

Well Number: 9-36

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWSE 36 9N 91W 6th PM Latitude: 40.690096 Longitude: -107.551361

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

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.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Styers-Pinelli-Taffom complex, 10 to 25 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): ephemeral drainage 1500 feet northwest of facility;

no water wells within 1/4 mile

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

not yet determined

How Determined:

REMEDIALTION WORKPLAN

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

Ownership of produced water pits transferred from pervious owner to Vaquero through the submittal of Form 10. Any water contained within the pits has been removed and disposed of via the Blue Gravel injection well (Blue Gravel 1-35, API 05-081-06744).

Describe how source is to be removed:

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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.:

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Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
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Well Name & No: _____
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REMEDIATION WORKPLAN (Cont.)

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

It is anticipated that groundwater will not be encountered.

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.

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Appropriate measures will be taken to prevent the establishment of noxious weeds.

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:

NA

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

Sampling of the land treated soil will occur periodically to determine compliance with Table 910-1 standards. Once the soil meets the Table 910-1 standards, it will be incorporated into berms or spread out upon the facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: _____ Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Hector Gonzales Signed: _____

Title: Production Foreman Date: _____

OGCC Approved: _____ Title: _____ Date: _____

**STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION**

Form 27 Attachment

Vaquero Energy, Blue Gravel Pits

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APPENDIX B

Site Photographs



Photograph 1 – Site ID.



Photograph 2 – View of excavated pit.



Photograph 3– Stake marking area of composite soil sampling.



Photograph 4– View of backfilled pit.



Project Number 120019-1

Photos Taken 09-15-11

Vaquero Energy
Blue Gravel Pit Closure Report
Moffat County, Colorado

Site Photographs

**Appendix
B**



Photograph 5– Site ID.



Photograph 6 – View of excavated pit.



Photograph 7– Stake marking area of composite soil sampling.



Photograph 8– View of backfilled pit.



Photograph 9– Site ID.



Photograph 10 – Stake marking area of composite soil sampling.



Photograph 11– View of excavated pit.



Photograph 12– View of backfilled pit.



Photograph 13– Site ID.



Photograph 14 – View of excavated pit.



Photograph 15– View of backfilled pit.



Photograph 16– Site ID.



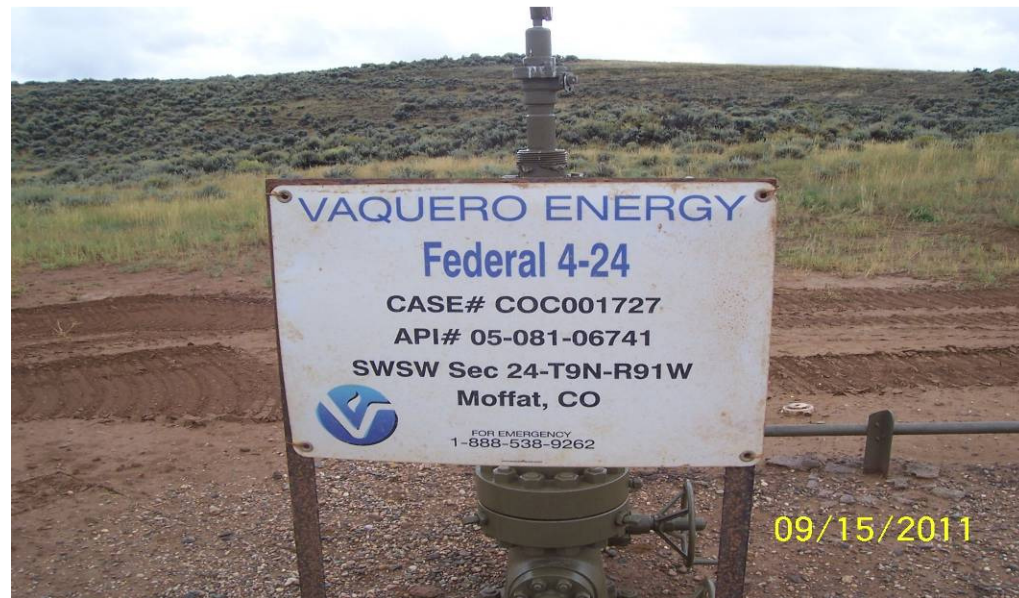
Photograph 17– Stake marking area of composite soil sampling.



Photograph 18 – View of excavated pit.



Photograph 19– View of backfilled pit.



Photograph 20– Site ID.



Photograph 21– *View of excavated pit.*



Photograph 22 – *Stake marking area of composite soil sampling.*



Photograph 23– *View of backfilled pit.*



Photograph 24– *Site ID.*



Photograph 25– *View of excavated pit.*



Photograph 26 – *Stake marking area of composite soil sampling.*



Photograph 27– *View of backfilled pit.*



Photograph 28– *Site ID.*



Photograph 29– *View of excavated pit.*



Photograph 30– *Stake marking area of composite soil sampling.*





APPENDIX C

Laboratory Reports



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

Report Summary

Tuesday September 20, 2011

Report Number: L536464

Samples Received: 09/16/11

Client Project: 120019

Description: Blue Gravel Pit

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

September 20, 2011

Date Received : September 16, 2011
Description : Vaquero Pits
Sample ID : BG6-24-091511 5-6FT
Collected By : SWB
Collection Date : 09/15/11 08:00

ESC Sample # : L536464-01

Site ID : BLUE GRAVEL PIT

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	61.			Calc.	09/18/11	1
Benzene	BDL	0.050	mg/kg	8021/8015	09/16/11	100
Toluene	BDL	0.50	mg/kg	8021/8015	09/16/11	100
Ethylbenzene	0.10	0.050	mg/kg	8021/8015	09/16/11	100
Total Xylene	BDL	0.15	mg/kg	8021/8015	09/16/11	100
TPH (GC/FID) Low Fraction	33.	10.	mg/kg	GRO	09/16/11	100
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	8021/8015	09/16/11	100
a,a,a-Trifluorotoluene(PID)	99.3		% Rec.	8021/8015	09/16/11	100
TPH (GC/FID) High Fraction	77.	4.0	mg/kg	3546/DRO	09/19/11	1
Surrogate recovery(%)						
o-Terphenyl	71.3		% Rec.	3546/DRO	09/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/20/11 09:29 Printed: 09/20/11 09:30

REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

September 20, 2011

Date Received : September 16, 2011
Description : Vaquero Pits
Sample ID : BG5-24-091511 5-6FT
Collected By : SWB
Collection Date : 09/15/11 09:00

ESC Sample # : L536464-02

Site ID : BLUE GRAVEL PIT

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	13.			Calc.	09/18/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/19/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/19/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/19/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/19/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/19/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.4		% Rec.	8021/8015	09/19/11	5
a,a,a-Trifluorotoluene(PID)	94.1		% Rec.	8021/8015	09/19/11	5
TPH (GC/FID) High Fraction	12.	4.0	mg/kg	3546/DRO	09/19/11	1
Surrogate recovery(%)						
o-Terphenyl	83.1		% Rec.	3546/DRO	09/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

September 20, 2011

Date Received : September 16, 2011
Description : Vaquero Pits

Sample ID : BGS1-25A-091511

Collected By : SWB
Collection Date : 09/15/11 10:00

ESC Sample # : L536464-03

Site ID : BLUE GRAVEL PIT

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	12.			Calc.	09/18/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/19/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/19/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/19/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/19/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/19/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.3		% Rec.	8021/8015	09/19/11	5
a,a,a-Trifluorotoluene(PID)	94.1		% Rec.	8021/8015	09/19/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	09/19/11	1
Surrogate recovery(%)						
o-Terphenyl	86.7		% Rec.	3546/DRO	09/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

September 20, 2011

Date Received : September 16, 2011
Description : Vaquero Pits

Sample ID : BGS1-25B-091511

Collected By : SWB
Collection Date : 09/15/11 10:15

ESC Sample # : L536464-04

Site ID : BLUE GRAVEL PIT

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	6.4			Calc.	09/18/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/19/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/19/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/19/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/19/11	5
TPH (GC/FID) Low Fraction	0.59	0.50	mg/kg	GRO	09/19/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.5		% Rec.	8021/8015	09/19/11	5
a,a,a-Trifluorotoluene(PID)	93.6		% Rec.	8021/8015	09/19/11	5
TPH (GC/FID) High Fraction	31.	4.0	mg/kg	3546/DRO	09/19/11	1
Surrogate recovery(%)						
o-Terphenyl	79.9		% Rec.	3546/DRO	09/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

September 20, 2011

Date Received : September 16, 2011
Description : Vaquero Pits
Sample ID : BG4-24-091511 5-6FT
Collected By : SWB
Collection Date : 09/15/11 11:00

ESC Sample # : L536464-05

Site ID : BLUE GRAVEL PIT

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	58.			Calc.	09/18/11	1
Benzene	0.0047	0.0025	mg/kg	8021/8015	09/17/11	5
Toluene	0.034	0.025	mg/kg	8021/8015	09/17/11	5
Ethylbenzene	0.031	0.0025	mg/kg	8021/8015	09/17/11	5
Total Xylene	0.086	0.0075	mg/kg	8021/8015	09/17/11	5
TPH (GC/FID) Low Fraction	11.	0.50	mg/kg	GRO	09/17/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.5		% Rec.	8021/8015	09/17/11	5
a,a,a-Trifluorotoluene(PID)	97.0		% Rec.	8021/8015	09/17/11	5
TPH (GC/FID) High Fraction	5.8	4.0	mg/kg	3546/DRO	09/19/11	1
Surrogate recovery(%)						
o-Terphenyl	83.9		% Rec.	3546/DRO	09/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 10
Littleton, CO 80122

September 20, 2011

Date Received : September 16, 2011
Description : Vaquero Pits
Sample ID : BG1-23-091511 10FT
Collected By : SWB
Collection Date : 09/15/11 12:00

ESC Sample # : L536464-06

Site ID : BLUE GRAVEL PIT

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	110			Calc.	09/18/11	1
Benzene	BDL	0.050	mg/kg	8021/8015	09/17/11	100
Toluene	BDL	0.50	mg/kg	8021/8015	09/17/11	100
Ethylbenzene	0.14	0.050	mg/kg	8021/8015	09/17/11	100
Total Xylene	0.18	0.15	mg/kg	8021/8015	09/17/11	100
TPH (GC/FID) Low Fraction	48.	10.	mg/kg	GRO	09/17/11	100
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.9		% Rec.	8021/8015	09/17/11	100
a,a,a-Trifluorotoluene(PID)	98.2		% Rec.	8021/8015	09/17/11	100
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	09/19/11	1
Surrogate recovery(%)						
o-Terphenyl	77.2		% Rec.	3546/DRO	09/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/20/11 09:29 Printed: 09/20/11 09:30

Summary of Remarks For Samples Printed
09/20/11 at 09:30:22

TSR Signing Reports: 134
R2 - Rush: Next Day

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, Tl, & Zn GW by 6020 Log all PAHs by 8270-SIM

Sample: L536464-01 Account: BUYSLCO Received: 09/16/11 09:00 Due Date: 09/20/11 00:00 RPT Date: 09/20/11 09:29

Sample: L536464-02 Account: BUYSLCO Received: 09/16/11 09:00 Due Date: 09/20/11 00:00 RPT Date: 09/20/11 09:29

Sample: L536464-03 Account: BUYSLCO Received: 09/16/11 09:00 Due Date: 09/20/11 00:00 RPT Date: 09/20/11 09:29

Sample: L536464-04 Account: BUYSLCO Received: 09/16/11 09:00 Due Date: 09/20/11 00:00 RPT Date: 09/20/11 09:29

Sample: L536464-05 Account: BUYSLCO Received: 09/16/11 09:00 Due Date: 09/20/11 00:00 RPT Date: 09/20/11 09:29

Sample: L536464-06 Account: BUYSLCO Received: 09/16/11 09:00 Due Date: 09/20/11 00:00 RPT Date: 09/20/11 09:29



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Quality Assurance Report
Level II

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Tax I.D. 62-0814289

Est. 1970

September 20, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG555530	09/16/11 19:54
Ethylbenzene	< .0005	mg/kg			WG555530	09/16/11 19:54
Toluene	< .005	mg/kg			WG555530	09/16/11 19:54
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG555530	09/16/11 19:54
Total Xylene	< .0015	mg/kg			WG555530	09/16/11 19:54
a,a,a-Trifluorotoluene(FID)		% Rec.	95.26	59-128	WG555530	09/16/11 19:54
a,a,a-Trifluorotoluene(PID)		% Rec.	99.51	54-144	WG555530	09/16/11 19:54
TPH (GC/FID) High Fraction	< 4	ppm			WG555697	09/19/11 09:35
o-Terphenyl		% Rec.	97.40	50-150	WG555697	09/19/11 09:35

Benzene	< .0005	mg/kg			WG555835	09/19/11 00:56
Ethylbenzene	< .0005	mg/kg			WG555835	09/19/11 00:56
Toluene	< .005	mg/kg			WG555835	09/19/11 00:56
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG555835	09/19/11 00:56
Total Xylene	< .0015	mg/kg			WG555835	09/19/11 00:56
a,a,a-Trifluorotoluene(FID)		% Rec.	90.78	59-128	WG555835	09/19/11 00:56
a,a,a-Trifluorotoluene(PID)		% Rec.	94.74	54-144	WG555835	09/19/11 00:56

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0483	96.6	76-113	WG555530
Ethylbenzene	mg/kg	.05	0.0498	99.7	78-115	WG555530
Toluene	mg/kg	.05	0.0517	103.	76-114	WG555530
Total Xylene	mg/kg	.15	0.147	98.2	81-118	WG555530
a,a,a-Trifluorotoluene(PID)				98.14	54-144	WG555530
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.58	120.	67-135	WG555530
a,a,a-Trifluorotoluene(FID)				94.95	59-128	WG555530
TPH (GC/FID) High Fraction	ppm	60	53.0	88.4	50-150	WG555697
o-Terphenyl				95.68	50-150	WG555697
Benzene	mg/kg	.05	0.0432	86.4	76-113	WG555835
Ethylbenzene	mg/kg	.05	0.0462	92.4	78-115	WG555835
Toluene	mg/kg	.05	0.0490	98.1	76-114	WG555835
Total Xylene	mg/kg	.15	0.136	90.9	81-118	WG555835
a,a,a-Trifluorotoluene(PID)				94.78	54-144	WG555835
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.83	124.	67-135	WG555835
a,a,a-Trifluorotoluene(FID)				96.79	59-128	WG555835

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0523	0.0483	104.	76-113	7.89	20	WG555530
Ethylbenzene	mg/kg	0.0530	0.0498	106.	78-115	6.06	20	WG555530
Toluene	mg/kg	0.0546	0.0517	109.	76-114	5.37	20	WG555530
Total Xylene	mg/kg	0.155	0.147	104.	81-118	5.35	20	WG555530
a,a,a-Trifluorotoluene(PID)				98.41	54-144			WG555530
TPH (GC/FID) Low Fraction	mg/kg	7.09	6.58	129.	67-135	7.45	20	WG555530
a,a,a-Trifluorotoluene(FID)				97.24	59-128			WG555530
TPH (GC/FID) High Fraction	ppm	54.6	53.0	91.0	50-150	2.96	25	WG555697
o-Terphenyl				102.6	50-150			WG555697

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report
Level II

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Tax I.D. 62-0814289

Est. 1970

September 20, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Benzene	mg/kg	0.0437	0.0432	87.0		76-113	1.10	20	WG555835
Ethylbenzene	mg/kg	0.0466	0.0462	93.0		78-115	0.780	20	WG555835
Toluene	mg/kg	0.0494	0.0490	99.0		76-114	0.750	20	WG555835
Total Xylene	mg/kg	0.137	0.136	91.0		81-118	0.200	20	WG555835
a,a,a-Trifluorotoluene(PID)				94.13		54-144			WG555835
TPH (GC/FID) Low Fraction	mg/kg	6.81	6.83	124.		67-135	0.270	20	WG555835
a,a,a-Trifluorotoluene(FID)				96.40		59-128			WG555835

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.231	0	.05	92.3	32-137	L536203-01	WG555530
Ethylbenzene	mg/kg	0.230	0	.05	92.0	10-150	L536203-01	WG555530
Toluene	mg/kg	0.249	0.00110	.05	99.0	20-142	L536203-01	WG555530
Total Xylene	mg/kg	0.684	0	.15	91.2	16-141	L536203-01	WG555530
a,a,a-Trifluorotoluene(PID)					96.79	54-144		WG555530
TPH (GC/FID) Low Fraction	mg/kg	22.2	0	5.5	80.6	55-109	L536416-01	WG555530
a,a,a-Trifluorotoluene(FID)					100.0	59-128		WG555530

Benzene	mg/kg	0.206	0	.05	82.5	32-137	L536464-02	WG555835
Ethylbenzene	mg/kg	0.222	0	.05	88.6	10-150	L536464-02	WG555835
Toluene	mg/kg	0.238	0	.05	95.1	20-142	L536464-02	WG555835
Total Xylene	mg/kg	0.641	0	.15	85.4	16-141	L536464-02	WG555835
a,a,a-Trifluorotoluene(PID)					94.30	54-144		WG555835
TPH (GC/FID) Low Fraction	mg/kg	29.0	0	5.5	106.	55-109	L536464-02	WG555835
a,a,a-Trifluorotoluene(FID)					95.10	59-128		WG555835

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/kg	0.243	0.231	97.4	32-137	5.38	39	L536203-01	WG555530
Ethylbenzene	mg/kg	0.230	0.230	92.1	10-150	0.120	44	L536203-01	WG555530
Toluene	mg/kg	0.251	0.249	100.	20-142	0.930	42	L536203-01	WG555530
Total Xylene	mg/kg	0.679	0.684	90.5	16-141	0.820	46	L536203-01	WG555530
a,a,a-Trifluorotoluene(PID)				97.57	54-144				WG555530
TPH (GC/FID) Low Fraction	mg/kg	17.8	22.2	64.7	55-109	21.8*	20	L536416-01	WG555530
a,a,a-Trifluorotoluene(FID)				83.00	59-128				WG555530
Benzene	mg/kg	0.213	0.206	85.2	32-137	3.20	39	L536464-02	WG555835
Ethylbenzene	mg/kg	0.226	0.222	90.5	10-150	2.11	44	L536464-02	WG555835
Toluene	mg/kg	0.240	0.238	96.1	20-142	1.10	42	L536464-02	WG555835
Total Xylene	mg/kg	0.658	0.641	87.8	16-141	2.73	46	L536464-02	WG555835
a,a,a-Trifluorotoluene(PID)				94.52	54-144				WG555835
TPH (GC/FID) Low Fraction	mg/kg	29.6	29.0	108.	55-109	1.91	20	L536464-02	WG555835
a,a,a-Trifluorotoluene(FID)				95.14	59-128				WG555835

Batch number /Run number / Sample number cross reference

WG555530: R1862132: L536464-01 05 06
WG555697: R1863053: L536464-01 02 03 04 05 06
WG555835: R1863175: L536464-02 03 04
WG555598: R1863179: L536464-01 02 03 04 05 06

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 20, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Report Summary

Friday September 23, 2011

Report Number: L536893

Samples Received: 09/17/11

Client Project: 120019

Description: Blue Gravel Pit

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 17, 2011
Description : Vaquero Pits
Sample ID : BG1-23-091611 7-8FT
Collected By : SWB
Collection Date : 09/16/11 08:00

ESC Sample # : L536893-01

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	25.			Calc.	09/21/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.8		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	94.8		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	86.2		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/23/11 12:12 Printed: 09/23/11 12:13

REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 17, 2011
Description : Vaquero Pits
Sample ID : BG7-25-091611 7-8FT
Collected By : SWB
Collection Date : 09/16/11 09:00

ESC Sample # : L536893-02

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	28.			Calc.	09/21/11	1
Benzene	0.18	0.025	mg/kg	8021/8015	09/21/11	50
Toluene	0.86	0.25	mg/kg	8021/8015	09/21/11	50
Ethylbenzene	0.64	0.025	mg/kg	8021/8015	09/21/11	50
Total Xylene	5.6	0.075	mg/kg	8021/8015	09/21/11	50
TPH (GC/FID) Low Fraction	180	25.	mg/kg	GRO	09/21/11	250
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.6		% Rec.	8021/8015	09/21/11	250
a,a,a-Trifluorotoluene(PID)	92.5		% Rec.	8021/8015	09/21/11	50
TPH (GC/FID) High Fraction	17.	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	82.7		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 17, 2011
Description : Vaquero Pits
Sample ID : BG4-25-091611 7-8FT
Collected By : SWB
Collection Date : 09/16/11 10:00

ESC Sample # : L536893-03

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	8.6			Calc.	09/21/11	1
Benzene	0.031	0.025	mg/kg	8021/8015	09/21/11	50
Toluene	BDL	0.25	mg/kg	8021/8015	09/21/11	50
Ethylbenzene	0.23	0.025	mg/kg	8021/8015	09/21/11	50
Total Xylene	BDL	0.075	mg/kg	8021/8015	09/21/11	50
TPH (GC/FID) Low Fraction	130	5.0	mg/kg	GRO	09/21/11	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.2		% Rec.	8021/8015	09/21/11	50
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	09/21/11	50
TPH (GC/FID) High Fraction	14.	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	76.4		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 17, 2011
Description : Vaquero Pits
Sample ID : BG1-26-091611 7-8FT
Collected By : SWB
Collection Date : 09/16/11 11:00

ESC Sample # : L536893-04

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	20.			Calc.	09/21/11	1
Benzene	0.28	0.025	mg/kg	8021/8015	09/21/11	50
Toluene	1.6	0.25	mg/kg	8021/8015	09/21/11	50
Ethylbenzene	2.0	0.025	mg/kg	8021/8015	09/21/11	50
Total Xylene	9.2	0.075	mg/kg	8021/8015	09/21/11	50
TPH (GC/FID) Low Fraction	550	25.	mg/kg	GRO	09/21/11	250
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	86.7		% Rec.	8021/8015	09/21/11	250
a,a,a-Trifluorotoluene(FID)	89.0		% Rec.	8021/8015	09/21/11	250
TPH (GC/FID) High Fraction	460	20.	mg/kg	3546/DRO	09/22/11	5
Surrogate recovery(%)						
o-Terphenyl	74.9		% Rec.	3546/DRO	09/22/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 17, 2011
Description : Vaquero Pits
Sample ID : BG2-26-091611 7-8FT
Collected By : SWB
Collection Date : 09/16/11 12:00

ESC Sample # : L536893-05

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	2.7			Calc.	09/21/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.8		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	95.0		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	09/23/11	1
Surrogate recovery(%)						
o-Terphenyl	50.9		% Rec.	3546/DRO	09/23/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 17, 2011
Description : Vaquero Pits
Sample ID : BG6-25-091611 10-11FT
Collected By : SWB
Collection Date : 09/16/11 13:00

ESC Sample # : L536893-06

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	81.			Calc.	09/21/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/20/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Total Xylene	0.012	0.0075	mg/kg	8021/8015	09/20/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/20/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	8021/8015	09/20/11	5
a,a,a-Trifluorotoluene(PID)	95.0		% Rec.	8021/8015	09/20/11	5
TPH (GC/FID) High Fraction	140	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	67.2		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L536893-06	WG555980	SAMP	TPH (GC/FID) Low Fraction	R1865532	J5

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/23/11 at 12:13:07

TSR Signing Reports: 134
R4 - Rush: Three Day

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, Tl, & Zn GW by 6020 Log all PAHs by 8270-SIM

Sample: L536893-01 Account: BUYSLCO Received: 09/17/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/23/11 12:12

Sample: L536893-02 Account: BUYSLCO Received: 09/17/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/23/11 12:12

Sample: L536893-03 Account: BUYSLCO Received: 09/17/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/23/11 12:12

Sample: L536893-04 Account: BUYSLCO Received: 09/17/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/23/11 12:12

Sample: L536893-05 Account: BUYSLCO Received: 09/17/11 09:00 Due Date: 09/23/11 00:00 RPT Date: 09/23/11 12:12

Sample: L536893-06 Account: BUYSLCO Received: 09/17/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/23/11 12:12



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Kleinfelder - Littleton, CO
Derek Bowman
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Quality Assurance Report
Level II

L536893

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 23, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG555980	09/20/11 14:15
Ethylbenzene	< .0005	mg/kg			WG555980	09/20/11 14:15
Toluene	< .005	mg/kg			WG555980	09/20/11 14:15
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG555980	09/20/11 14:15
Total Xylene	< .0015	mg/kg			WG555980	09/20/11 14:15
a,a,a-Trifluorotoluene(FID)		% Rec.	91.29	59-128	WG555980	09/20/11 14:15
a,a,a-Trifluorotoluene(PID)		% Rec.	94.49	54-144	WG555980	09/20/11 14:15
Benzene	< .0005	mg/kg			WG556416	09/21/11 16:30
Ethylbenzene	< .0005	mg/kg			WG556416	09/21/11 16:30
Toluene	< .005	mg/kg			WG556416	09/21/11 16:30
Total Xylene	< .0015	mg/kg			WG556416	09/21/11 16:30
a,a,a-Trifluorotoluene(FID)		% Rec.	90.01	59-128	WG556416	09/21/11 16:30
a,a,a-Trifluorotoluene(PID)		% Rec.	95.84	54-144	WG556416	09/21/11 16:30
TPH (GC/FID) High Fraction	< 4	ppm			WG555990	09/22/11 10:45
o-Terphenyl		% Rec.	91.70	50-150	WG555990	09/22/11 10:45
TPH (GC/FID) High Fraction	< 4	ppm			WG556720	09/23/11 09:39
o-Terphenyl		% Rec.	82.42	50-150	WG556720	09/23/11 09:39

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.94	126.	67-135	WG555980
a,a,a-Trifluorotoluene(FID)				97.18	59-128	WG555980
a,a,a-Trifluorotoluene(PID)				106.5	54-144	WG555980
Benzene	mg/kg	.05	0.0443	88.5	76-113	WG555980
Ethylbenzene	mg/kg	.05	0.0470	94.0	78-115	WG555980
Toluene	mg/kg	.05	0.0497	99.4	76-114	WG555980
Total Xylene	mg/kg	.15	0.138	91.8	81-118	WG555980
a,a,a-Trifluorotoluene(FID)				91.32	59-128	WG555980
a,a,a-Trifluorotoluene(PID)				93.83	54-144	WG555980
Benzene	mg/kg	.05	0.0423	84.5	76-113	WG556416
Ethylbenzene	mg/kg	.05	0.0456	91.2	78-115	WG556416
Toluene	mg/kg	.05	0.0469	93.7	76-114	WG556416
Total Xylene	mg/kg	.15	0.134	89.3	81-118	WG556416
a,a,a-Trifluorotoluene(PID)				94.29	54-144	WG556416
TPH (GC/FID) High Fraction	ppm	60	48.4	80.6	50-150	WG555990
o-Terphenyl				83.13	50-150	WG555990
TPH (GC/FID) High Fraction	ppm	60	50.6	84.3	50-150	WG556720
o-Terphenyl				88.64	50-150	WG556720

Analyte	Units	Laboratory Control Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref				
TPH (GC/FID) Low Fraction	mg/kg	6.88	6.94	125.	67-135	0.800	WG555980
a,a,a-Trifluorotoluene(FID)				96.80	59-128		WG555980
a,a,a-Trifluorotoluene(PID)				105.9	54-144		WG555980
Benzene	mg/kg	0.0449	0.0443	90.0	76-113	1.45	WG555980

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report
Level II

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 23, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Ethylbenzene	mg/kg	0.0477	0.0470	95.0		78-115	1.43	20	WG555980
Toluene	mg/kg	0.0502	0.0497	100.		76-114	1.01	20	WG555980
Total Xylene	mg/kg	0.138	0.138	92.0		81-118	0.240	20	WG555980
a,a,a-Trifluorotoluene(FID)				92.03		59-128			WG555980
a,a,a-Trifluorotoluene(PID)				95.22		54-144			WG555980
Benzene	mg/kg	0.0459	0.0423	92.0		76-113	8.20	20	WG556416
Ethylbenzene	mg/kg	0.0497	0.0456	99.0		78-115	8.60	20	WG556416
Toluene	mg/kg	0.0508	0.0469	102.		76-114	8.04	20	WG556416
Total Xylene	mg/kg	0.145	0.134	97.0		81-118	7.95	20	WG556416
a,a,a-Trifluorotoluene(PID)				96.27		54-144			WG556416
TPH (GC/FID) High Fraction	ppm	51.4	48.4	86.0		50-150	6.14	25	WG555990
o-Terphenyl				91.29		50-150			WG555990
TPH (GC/FID) High Fraction	ppm	52.4	50.6	87.0		50-150	3.45	25	WG556720
o-Terphenyl				92.83		50-150			WG556720

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Benzene	mg/kg	0.215	0	.05	86.0	32-137	L536893-06	WG555980
Ethylbenzene	mg/kg	0.231	0	.05	92.4	10-150	L536893-06	WG555980
Toluene	mg/kg	0.241	0	.05	96.4	20-142	L536893-06	WG555980
Total Xylene	mg/kg	0.680	0.0120	.15	89.0	16-141	L536893-06	WG555980
a,a,a-Trifluorotoluene(FID)					90.80	59-128		WG555980
a,a,a-Trifluorotoluene(PID)					93.42	54-144		WG555980
TPH (GC/FID) Low Fraction	mg/kg	31.1	0	5.5	113.*	55-109	L536893-06	WG555980
a,a,a-Trifluorotoluene(FID)					95.69	59-128		WG555980
a,a,a-Trifluorotoluene(PID)					104.0	54-144		WG555980
Benzene	mg/kg	2.33	0.180	.05	86.1	32-137	L536893-02	WG556416
Ethylbenzene	mg/kg	2.88	0.640	.05	89.5	10-150	L536893-02	WG556416
Toluene	mg/kg	3.75	0.860	.05	116.	20-142	L536893-02	WG556416
Total Xylene	mg/kg	12.5	5.60	.15	91.4	16-141	L536893-02	WG556416
a,a,a-Trifluorotoluene(PID)					96.89	54-144		WG556416
TPH (GC/FID) High Fraction	ppm	51.5	0	60	85.8	50-150	L536657-01	WG555990
o-Terphenyl					89.33	50-150		WG555990

Analyte	Units	MSD	Matrix Spike	Duplicate	Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Benzene	mg/kg	0.207	0.215	82.7	32-137	3.91	39	L536893-06		WG555980
Ethylbenzene	mg/kg	0.219	0.231	87.6	10-150	5.41	44	L536893-06		WG555980
Toluene	mg/kg	0.231	0.241	92.4	20-142	4.22	42	L536893-06		WG555980
Total Xylene	mg/kg	0.634	0.680	82.9	16-141	7.04	46	L536893-06		WG555980
a,a,a-Trifluorotoluene(FID)				90.82	59-128					WG555980
a,a,a-Trifluorotoluene(PID)				93.86	54-144					WG555980
TPH (GC/FID) Low Fraction	mg/kg	28.8	31.1	105.	55-109	7.56	20	L536893-06		WG555980
a,a,a-Trifluorotoluene(FID)				95.56	59-128					WG555980
a,a,a-Trifluorotoluene(PID)				103.8	54-144					WG555980

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

September 23, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	2.52	2.33	93.6	32-137	7.80	39	L536893-02	WG556416
Ethylbenzene	mg/kg	2.95	2.88	92.4	10-150	2.49	44	L536893-02	WG556416
Toluene	mg/kg	3.74	3.75	115.	20-142	0.350	42	L536893-02	WG556416
Total Xylene	mg/kg	12.4	12.5	90.8	16-141	0.340	46	L536893-02	WG556416
a,a,a-Trifluorotoluene(PID)				94.46	54-144				WG556416
TPH (GC/FID) High Fraction	ppm	51.3	51.5	85.6	50-150	0.286	25	L536657-01	WG555990
o-Terphenyl				88.01	50-150				WG555990

Batch number /Run number / Sample number cross reference

WG555980: R1865532: L536893-01 02 03 04 05 06
WG555872: R1867132: L536893-01 02 03 04 05 06
WG556416: R1867776: L536893-02 04
WG555990: R1868112: L536893-01 02 03 04 06
WG556720: R1869214: L536893-05

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Kleinfelder - Littleton, CO
Derek Bowman
300 E. Mineral Avenue, Suite 7

Littleton, CO 80122

Quality Assurance Report
Level II

L536893

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 23, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Report Summary

Friday September 23, 2011

Report Number: L537218

Samples Received: 09/21/11

Client Project: 120019

Description: Blue Gravel Pit

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 21, 2011
Description : Vaquero Pits

Sample ID : BG4-35-092011

Collected By : SWB
Collection Date : 09/20/11 07:00

ESC Sample # : L537218-01

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	4.7			Calc.	09/22/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/23/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/23/11	5
Ethylbenzene	0.015	0.0025	mg/kg	8021/8015	09/23/11	5
Total Xylene	0.020	0.0075	mg/kg	8021/8015	09/23/11	5
TPH (GC/FID) Low Fraction	6.3	0.50	mg/kg	GRO	09/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.2		% Rec.	8021/8015	09/23/11	5
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	09/23/11	5
TPH (GC/FID) High Fraction	38.	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	79.6		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/23/11 12:12 Printed: 09/23/11 12:12

REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 21, 2011
Description : Vaquero Pits

Sample ID : BG4-36-092011

Collected By : SWB
Collection Date : 09/20/11 08:00

ESC Sample # : L537218-02

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	130			Calc.	09/22/11	1
Benzene	0.0052	0.0025	mg/kg	8021/8015	09/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/22/11	5
Ethylbenzene	0.032	0.0025	mg/kg	8021/8015	09/22/11	5
Total Xylene	0.034	0.0075	mg/kg	8021/8015	09/22/11	5
TPH (GC/FID) Low Fraction	8.2	0.50	mg/kg	GRO	09/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.4		% Rec.	8021/8015	09/22/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/22/11	5
TPH (GC/FID) High Fraction	86.	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	83.0		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 21, 2011
Description : Vaquero Pits

Sample ID : BG1-36-092011

Collected By : SWB
Collection Date : 09/20/11 09:00

ESC Sample # : L537218-03

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	39.			Calc.	09/22/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/23/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/23/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/23/11	5
Total Xylene	0.037	0.0075	mg/kg	8021/8015	09/23/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.5		% Rec.	8021/8015	09/23/11	5
a,a,a-Trifluorotoluene(PID)	97.4		% Rec.	8021/8015	09/23/11	5
TPH (GC/FID) High Fraction	67.	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	79.6		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/23/11 12:12 Printed: 09/23/11 12:12

REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 23, 2011

Date Received : September 21, 2011
Description : Vaquero Pits

Sample ID : BG2-25-092011

Collected By : SWB
Collection Date : 09/20/11 10:00

ESC Sample # : L537218-04

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	1.5			Calc.	09/22/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/22/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/22/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/22/11	5
TPH (GC/FID) Low Fraction	34.	10.	mg/kg	GRO	09/22/11	100
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	8021/8015	09/22/11	100
a,a,a-Trifluorotoluene(PID)	95.0		% Rec.	8021/8015	09/22/11	5
TPH (GC/FID) High Fraction	38.	4.0	mg/kg	3546/DRO	09/22/11	1
Surrogate recovery(%)						
o-Terphenyl	85.9		% Rec.	3546/DRO	09/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/23/11 12:12 Printed: 09/23/11 12:12

Summary of Remarks For Samples Printed
09/23/11 at 12:12:58

TSR Signing Reports: 134
R3 - Rush: Two Day

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, Tl, & Zn GW by 6020 Log all PAHs by 8270-SIM

Sample: L537218-01 Account: BUYSLCO Received: 09/21/11 09:00 Due Date: 09/23/11 00:00 RPT Date: 09/23/11 12:12

Sample: L537218-02 Account: BUYSLCO Received: 09/21/11 09:00 Due Date: 09/23/11 00:00 RPT Date: 09/23/11 12:12

Sample: L537218-03 Account: BUYSLCO Received: 09/21/11 09:00 Due Date: 09/23/11 00:00 RPT Date: 09/23/11 12:12

Sample: L537218-04 Account: BUYSLCO Received: 09/21/11 09:00 Due Date: 09/23/11 00:00 RPT Date: 09/23/11 12:12



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September 23, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG556522	09/22/11 04:37
Ethylbenzene	< .0005	mg/kg			WG556522	09/22/11 04:37
Toluene	< .005	mg/kg			WG556522	09/22/11 04:37
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG556522	09/22/11 04:37
Total Xylene	< .0015	mg/kg			WG556522	09/22/11 04:37
a,a,a-Trifluorotoluene(FID)		% Rec.	97.23	59-128	WG556522	09/22/11 04:37
a,a,a-Trifluorotoluene(PID)		% Rec.	102.2	54-144	WG556522	09/22/11 04:37
TPH (GC/FID) High Fraction	< 4	ppm			WG556515	09/22/11 13:58
o-Terphenyl		% Rec.	79.94	50-150	WG556515	09/22/11 13:58
Benzene	< .0005	mg/kg			WG556707	09/22/11 15:54
Ethylbenzene	< .0005	mg/kg			WG556707	09/22/11 15:54
Toluene	< .005	mg/kg			WG556707	09/22/11 15:54
Total Xylene	< .0015	mg/kg			WG556707	09/22/11 15:54
a,a,a-Trifluorotoluene(FID)		% Rec.	95.66	59-128	WG556707	09/22/11 15:54
a,a,a-Trifluorotoluene(PID)		% Rec.	95.82	54-144	WG556707	09/22/11 15:54
Benzene	< .0005	mg/kg			WG556844	09/23/11 06:14
Ethylbenzene	< .0005	mg/kg			WG556844	09/23/11 06:14
Toluene	< .005	mg/kg			WG556844	09/23/11 06:14
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG556844	09/23/11 06:14
Total Xylene	< .0015	mg/kg			WG556844	09/23/11 06:14
a,a,a-Trifluorotoluene(FID)		% Rec.	92.61	59-128	WG556844	09/23/11 06:14
a,a,a-Trifluorotoluene(PID)		% Rec.	97.19	54-144	WG556844	09/23/11 06:14

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0482	96.3	76-113	WG556522
Ethylbenzene	mg/kg	.05	0.0516	103.	78-115	WG556522
Toluene	mg/kg	.05	0.0533	107.	76-114	WG556522
Total Xylene	mg/kg	.15	0.153	102.	81-118	WG556522
a,a,a-Trifluorotoluene(PID)				99.65	54-144	WG556522
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.76	123.	67-135	WG556522
a,a,a-Trifluorotoluene(FID)				97.93	59-128	WG556522
TPH (GC/FID) High Fraction	ppm	60	48.9	81.4	50-150	WG556515
o-Terphenyl				83.76	50-150	WG556515
Benzene	mg/kg	.05	0.0486	97.2	76-113	WG556707
Ethylbenzene	mg/kg	.05	0.0548	110.	78-115	WG556707
Toluene	mg/kg	.05	0.0520	104.	76-114	WG556707
Total Xylene	mg/kg	.15	0.161	108.	81-118	WG556707
a,a,a-Trifluorotoluene(PID)				99.02	54-144	WG556707
Benzene	mg/kg	.05	0.0465	93.0	76-113	WG556844
Ethylbenzene	mg/kg	.05	0.0477	95.5	78-115	WG556844
Toluene	mg/kg	.05	0.0513	103.	76-114	WG556844
Total Xylene	mg/kg	.15	0.137	91.6	81-118	WG556844
a,a,a-Trifluorotoluene(PID)				95.96	54-144	WG556844
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.65	121.	67-135	WG556844
a,a,a-Trifluorotoluene(FID)				98.24	59-128	WG556844

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 23, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Benzene	mg/kg	0.0494	0.0482	99.0		76-113	2.50	20	WG556522
Ethylbenzene	mg/kg	0.0509	0.0516	102.		78-115	1.42	20	WG556522
Toluene	mg/kg	0.0528	0.0533	106.		76-114	0.970	20	WG556522
Total Xylene	mg/kg	0.149	0.153	99.0		81-118	2.49	20	WG556522
a,a,a-Trifluorotoluene(PID)				99.32		54-144			WG556522
TPH (GC/FID) Low Fraction	mg/kg	6.78	6.76	123.		67-135	0.410	20	WG556522
a,a,a-Trifluorotoluene(FID)				97.74		59-128			WG556522
TPH (GC/FID) High Fraction	ppm	49.7	48.9	83.0		50-150	1.69	25	WG556515
o-Terphenyl				85.06		50-150			WG556515
Benzene	mg/kg	0.0482	0.0486	96.0		76-113	0.860	20	WG556707
Ethylbenzene	mg/kg	0.0542	0.0548	108.		78-115	1.18	20	WG556707
Toluene	mg/kg	0.0514	0.0520	103.		76-114	1.12	20	WG556707
Total Xylene	mg/kg	0.159	0.161	106.		81-118	1.31	20	WG556707
a,a,a-Trifluorotoluene(PID)				99.04		54-144			WG556707
Benzene	mg/kg	0.0467	0.0465	93.0		76-113	0.420	20	WG556844
Ethylbenzene	mg/kg	0.0473	0.0477	95.0		78-115	0.940	20	WG556844
Toluene	mg/kg	0.0513	0.0513	103.		76-114	0.110	20	WG556844
Total Xylene	mg/kg	0.136	0.137	90.0		81-118	1.20	20	WG556844
a,a,a-Trifluorotoluene(PID)				96.03		54-144			WG556844
TPH (GC/FID) Low Fraction	mg/kg	6.69	6.65	122.		67-135	0.510	20	WG556844
a,a,a-Trifluorotoluene(FID)				98.20		59-128			WG556844

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Benzene	mg/kg	0.224	0.00520	.05	87.6	32-137	L537218-02	WG556522
Ethylbenzene	mg/kg	0.233	0.0320	.05	80.3	10-150	L537218-02	WG556522
Toluene	mg/kg	0.248	0	.05	99.1	20-142	L537218-02	WG556522
Total Xylene	mg/kg	0.695	0.0340	.15	88.1	16-141	L537218-02	WG556522
a,a,a-Trifluorotoluene(PID)					98.41	54-144		WG556522
TPH (GC/FID) Low Fraction	mg/kg	31.5	8.20	5.5	84.6	55-109	L537218-02	WG556522
a,a,a-Trifluorotoluene(FID)					96.52	59-128		WG556522
TPH (GC/FID) High Fraction	ppm	93.8	38.0	60	92.9	50-150	L537218-01	WG556515
o-Terphenyl					80.99	50-150		WG556515
Benzene	mg/kg	0.246	0.000370	.05	98.4	32-137	L537443-01	WG556707
Ethylbenzene	mg/kg	0.278	0	.05	111.	10-150	L537443-01	WG556707
Toluene	mg/kg	0.263	0	.05	105.	20-142	L537443-01	WG556707
Total Xylene	mg/kg	0.816	0	.15	109.	16-141	L537443-01	WG556707
a,a,a-Trifluorotoluene(PID)					93.56	54-144		WG556707
Benzene	mg/kg	0.228	0.00780	.05	88.2	32-137	L537624-01	WG556844
Ethylbenzene	mg/kg	0.223	0	.05	89.0	10-150	L537624-01	WG556844
Toluene	mg/kg	0.244	0	.05	97.7	20-142	L537624-01	WG556844
Total Xylene	mg/kg	0.634	0.0330	.15	80.1	16-141	L537624-01	WG556844
a,a,a-Trifluorotoluene(PID)					94.84	54-144		WG556844
TPH (GC/FID) Low Fraction	mg/kg	30.9	0	5.5	112.*	55-109	L537624-01	WG556844
a,a,a-Trifluorotoluene(FID)					97.34	59-128		WG556844

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 23, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Benzene	mg/kg	0.254	0.224	99.6	32-137	12.6	39	L537218-02		WG556522
Ethylbenzene	mg/kg	0.263	0.233	92.2	10-150	12.0	44	L537218-02		WG556522
Toluene	mg/kg	0.273	0.248	109.	20-142	9.85	42	L537218-02		WG556522
Total Xylene	mg/kg	0.775	0.695	98.8	16-141	10.8	46	L537218-02		WG556522
a,a,a-Trifluorotoluene(PID)				99.11	54-144					WG556522
TPH (GC/FID) Low Fraction	mg/kg	29.4	31.5	76.9	55-109	6.95	20	L537218-02		WG556522
a,a,a-Trifluorotoluene(FID)				96.86	59-128					WG556522
TPH (GC/FID) High Fraction	ppm	91.2	93.8	88.7	50-150	2.74	25	L537218-01		WG556515
o-Terphenyl				86.53	50-150					WG556515
Benzene	mg/kg	0.225	0.246	90.0	32-137	8.92	39	L537443-01		WG556707
Ethylbenzene	mg/kg	0.252	0.278	101.	10-150	9.78	44	L537443-01		WG556707
Toluene	mg/kg	0.240	0.263	96.1	20-142	9.09	42	L537443-01		WG556707
Total Xylene	mg/kg	0.741	0.816	98.7	16-141	9.71	46	L537443-01		WG556707
a,a,a-Trifluorotoluene(PID)				98.45	54-144					WG556707
Benzene	mg/kg	0.219	0.228	84.6	32-137	4.06	39	L537624-01		WG556844
Ethylbenzene	mg/kg	0.198	0.223	79.1	10-150	11.8	44	L537624-01		WG556844
Toluene	mg/kg	0.222	0.244	88.9	20-142	9.43	42	L537624-01		WG556844
Total Xylene	mg/kg	0.564	0.634	70.8	16-141	11.7	46	L537624-01		WG556844
a,a,a-Trifluorotoluene(PID)				95.74	54-144					WG556844
TPH (GC/FID) Low Fraction	mg/kg	27.6	30.9	100.	55-109	11.2	20	L537624-01		WG556844
a,a,a-Trifluorotoluene(FID)				96.68	59-128					WG556844

Batch number /Run number / Sample number cross reference

WG556522: R1868052: L537218-02 04
WG556435: R1868512: L537218-01 02 03 04
WG556515: R1868973: L537218-01 02 03 04
WG556707: R1868977: L537218-04
WG556844: R1869154: L537218-01 03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Derek Bowman
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Quality Assurance Report
Level II

L537218

12065 Lebanon Rd.
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Est. 1970

September 23, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

Report Summary

Wednesday September 28, 2011

Report Number: L538081

Samples Received: 09/24/11

Client Project: 120019

Description: Blue Gravel Pit

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 28, 2011

Date Received : September 24, 2011
Description : Blue Gravel Pits
Sample ID : BG7-25-092311 9-10FT
Collected By : SWB
Collection Date : 09/23/11 07:00

ESC Sample # : L538081-01

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/27/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/27/11	5
Ethylbenzene	0.0055	0.0025	mg/kg	8021/8015	09/27/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/27/11	5
TPH (GC/FID) Low Fraction	1.2	0.50	mg/kg	GRO	09/27/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	8021/8015	09/27/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/27/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/28/11 13:35 Printed: 09/28/11 13:35



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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 28, 2011

Date Received : September 24, 2011
Description : Blue Gravel Pits
Sample ID : BG1-26-092311 10-11FT
Collected By : SWB
Collection Date : 09/23/11 11:00

ESC Sample # : L538081-02

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/27/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/27/11	5
Ethylbenzene	0.0076	0.0025	mg/kg	8021/8015	09/27/11	5
Total Xylene	0.036	0.0075	mg/kg	8021/8015	09/27/11	5
TPH (GC/FID) Low Fraction	2.6	0.50	mg/kg	GRO	09/27/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.4		% Rec.	8021/8015	09/27/11	5
a,a,a-Trifluorotoluene(PID)	99.7		% Rec.	8021/8015	09/27/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/28/11 13:35 Printed: 09/28/11 13:35

REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 28, 2011

Date Received : September 24, 2011
Description : Blue Gravel Pits
Sample ID : BG9-36-092311 3-4FT
Collected By : SWB
Collection Date : 09/23/11 08:00

ESC Sample # : L538081-03

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	2.5			Calc.	09/28/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/27/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/27/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/27/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/27/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/27/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.9		% Rec.	8021/8015	09/27/11	5
a,a,a-Trifluorotoluene(PID)	96.0		% Rec.	8021/8015	09/27/11	5
TPH (GC/FID) High Fraction	8.7	4.0	mg/kg	3546/DRO	09/26/11	1
Surrogate recovery(%)						
o-Terphenyl	61.1		% Rec.	3546/DRO	09/26/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Derek Bowman
Kleinfelder - Littleton, CO
300 E. Mineral Avenue, Suite 7
Littleton, CO 80122

September 28, 2011

Date Received : September 24, 2011
Description : Blue Gravel Pits
Sample ID : BG1-35-092311 9-10FT
Collected By : SWB
Collection Date : 09/23/11 07:30

ESC Sample # : L538081-04

Site ID : BLUE GRAVEL PITS

Project # : 120019

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	50.			Calc.	09/28/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/27/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/27/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/27/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/27/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/27/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.7		% Rec.	8021/8015	09/27/11	5
a,a,a-Trifluorotoluene(PID)	98.6		% Rec.	8021/8015	09/27/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	09/27/11	1
Surrogate recovery(%)						
o-Terphenyl	76.3		% Rec.	3546/DRO	09/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/28/11 13:35 Printed: 09/28/11 13:35

Summary of Remarks For Samples Printed
09/28/11 at 13:35:40

TSR Signing Reports: 134
R4 - Rush: Three Day

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, Tl, & Zn GW by 6020 Log all PAHs by 8270-SIM

Sample: L538081-01 Account: BUYSLCO Received: 09/24/11 09:00 Due Date: 09/28/11 00:00 RPT Date: 09/28/11 13:35

Sample: L538081-02 Account: BUYSLCO Received: 09/24/11 09:00 Due Date: 09/28/11 00:00 RPT Date: 09/28/11 13:35

Sample: L538081-03 Account: BUYSLCO Received: 09/24/11 09:00 Due Date: 09/28/11 00:00 RPT Date: 09/28/11 13:35

Sample: L538081-04 Account: BUYSLCO Received: 09/24/11 09:00 Due Date: 09/28/11 00:00 RPT Date: 09/28/11 13:35



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September 28, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG557254	09/26/11 16:07
Ethylbenzene	< .0005	mg/kg			WG557254	09/26/11 16:07
Toluene	< .005	mg/kg			WG557254	09/26/11 16:07
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG557254	09/26/11 16:07
Total Xylene	< .0015	mg/kg			WG557254	09/26/11 16:07
a,a,a-Trifluorotoluene(FID)		% Rec.	96.20	59-128	WG557254	09/26/11 16:07
a,a,a-Trifluorotoluene(PID)		% Rec.	101.6	54-144	WG557254	09/26/11 16:07
Benzene	< .0005	mg/kg			WG557384	09/26/11 18:36
Ethylbenzene	< .0005	mg/kg			WG557384	09/26/11 18:36
Toluene	< .005	mg/kg			WG557384	09/26/11 18:36
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG557384	09/26/11 18:36
Total Xylene	< .0015	mg/kg			WG557384	09/26/11 18:36
a,a,a-Trifluorotoluene(FID)		% Rec.	93.04	59-128	WG557384	09/26/11 18:36
a,a,a-Trifluorotoluene(PID)		% Rec.	98.95	54-144	WG557384	09/26/11 18:36
TPH (GC/FID) High Fraction	< 4	ppm			WG557165	09/26/11 16:23
o-Terphenyl		% Rec.	80.92	50-150	WG557165	09/26/11 16:23
TPH (GC/FID) High Fraction	< 4	ppm			WG557181	09/27/11 13:14
o-Terphenyl		% Rec.	78.47	50-150	WG557181	09/27/11 13:14

Analyte	Units	Laboratory Control		% Rec	Limit	Batch
		Known Val	Sample Result			
Benzene	mg/kg	.05	0.0522	104.	76-113	WG557254
Ethylbenzene	mg/kg	.05	0.0525	105.	78-115	WG557254
Toluene	mg/kg	.05	0.0545	109.	76-114	WG557254
Total Xylene	mg/kg	.15	0.154	103.	81-118	WG557254
a,a,a-Trifluorotoluene(PID)				97.57	54-144	WG557254
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.64	121.	67-135	WG557254
a,a,a-Trifluorotoluene(FID)				96.32	59-128	WG557254
Benzene	mg/kg	.05	0.0423	84.7	76-113	WG557384
Ethylbenzene	mg/kg	.05	0.0440	87.9	78-115	WG557384
Toluene	mg/kg	.05	0.0458	91.5	76-114	WG557384
Total Xylene	mg/kg	.15	0.128	85.4	81-118	WG557384
a,a,a-Trifluorotoluene(FID)				91.51	59-128	WG557384
a,a,a-Trifluorotoluene(PID)				97.00	54-144	WG557384
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.89	107.	67-135	WG557384
a,a,a-Trifluorotoluene(FID)				98.43	59-128	WG557384
a,a,a-Trifluorotoluene(PID)				105.4	54-144	WG557384
TPH (GC/FID) High Fraction	ppm	60	46.4	77.3	50-150	WG557165
o-Terphenyl				88.24	50-150	WG557165
TPH (GC/FID) High Fraction	ppm	60	46.1	76.8	50-150	WG557181
o-Terphenyl				73.78	50-150	WG557181

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.42	6.64	117.	67-135	3.32	20	WG557254

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 28, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
a,a,a-Trifluorotoluene(FID)				95.02		59-128			
Benzene	mg/kg	0.0522	0.0522	104.		76-113	0.0500	20	WG557254
Ethylbenzene	mg/kg	0.0543	0.0525	109.		78-115	3.42	20	WG557254
Toluene	mg/kg	0.0566	0.0545	113.		76-114	3.76	20	WG557254
Total Xylene	mg/kg	0.163	0.154	109.		81-118	5.67	20	WG557254
a,a,a-Trifluorotoluene(PID)				98.05		54-144			WG557254
Benzene	mg/kg	0.0464	0.0423	93.0		76-113	9.10	20	WG557384
Ethylbenzene	mg/kg	0.0484	0.0440	97.0		78-115	9.59	20	WG557384
Toluene	mg/kg	0.0496	0.0458	99.0		76-114	8.08	20	WG557384
Total Xylene	mg/kg	0.141	0.128	94.0		81-118	9.33	20	WG557384
a,a,a-Trifluorotoluene(FID)				92.39		59-128			WG557384
a,a,a-Trifluorotoluene(PID)				97.58		54-144			WG557384
TPH (GC/FID) Low Fraction	mg/kg	6.53	5.89	119.		67-135	10.3	20	WG557384
a,a,a-Trifluorotoluene(FID)				99.76		59-128			WG557384
a,a,a-Trifluorotoluene(PID)				107.3		54-144			WG557384
TPH (GC/FID) High Fraction	ppm	44.7	46.4	74.0		50-150	3.67	25	WG557165
o-Terphenyl				81.33		50-150			WG557165
TPH (GC/FID) High Fraction	ppm	46.3	46.1	77.0		50-150	0.588	25	WG557181
o-Terphenyl				76.46		50-150			WG557181

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	123.	1.30	.05	106.	32-137	L537653-26	WG557254
Ethylbenzene	mg/kg	238.	130.	.05	93.6	10-150	L537653-26	WG557254
Toluene	mg/kg	224.	100.	.05	107.	20-142	L537653-26	WG557254
Total Xylene	mg/kg	975.	750.	.15	65.1	16-141	L537653-26	WG557254
a,a,a-Trifluorotoluene(PID)					99.10	54-144		WG557254
TPH (GC/FID) Low Fraction	mg/kg	22400	8400	5.5	111.*	55-109	L537653-26	WG557254
a,a,a-Trifluorotoluene(FID)					95.88	59-128		WG557254
Benzene	mg/kg	2.12	0	.05	84.9	32-137	L537575-01	WG557384
Ethylbenzene	mg/kg	2.43	0.140	.05	91.7	10-150	L537575-01	WG557384
Toluene	mg/kg	2.46	0	.05	98.4	20-142	L537575-01	WG557384
Total Xylene	mg/kg	7.08	0.280	.15	90.7	16-141	L537575-01	WG557384
a,a,a-Trifluorotoluene(FID)					92.12	59-128		WG557384
a,a,a-Trifluorotoluene(PID)					98.45	54-144		WG557384
TPH (GC/FID) Low Fraction	mg/kg	338.	29.0	5.5	112.*	55-109	L537575-01	WG557384
a,a,a-Trifluorotoluene(FID)					98.15	59-128		WG557384
a,a,a-Trifluorotoluene(PID)					107.0	54-144		WG557384
TPH (GC/FID) High Fraction	ppm	41.0	0	60	68.4	50-150	L538081-04	WG557181
o-Terphenyl					62.29	50-150		WG557181

Analyte	Units	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
		MSD	%Rec					
Benzene	mg/kg	125.	123.	107.	32-137	1.19	39	L537653-26
Ethylbenzene	mg/kg	232.	238.	88.7	10-150	2.44	44	L537653-26
Toluene	mg/kg	218.	224.	103.	20-142	2.43	42	L537653-26
Total Xylene	mg/kg	957.	975.	59.9	16-141	1.86	46	L537653-26

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

September 28, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
a,a,a-Trifluorotoluene(PID)				99.52	54-144					
TPH (GC/FID) Low Fraction	mg/kg	23000	22400	115.*	55-109	2.27	20	L537653-26		WG557254
a,a,a-Trifluorotoluene(FID)				97.25	59-128					WG557254
Benzene	mg/kg	2.17	2.12	86.6	32-137	1.99	39	L537575-01		WG557384
Ethylbenzene	mg/kg	2.51	2.43	94.7	10-150	3.07	44	L537575-01		WG557384
Toluene	mg/kg	2.46	2.46	98.3	20-142	0.180	42	L537575-01		WG557384
Total Xylene	mg/kg	7.26	7.08	93.0	16-141	2.48	46	L537575-01		WG557384
a,a,a-Trifluorotoluene(FID)				93.87	59-128					WG557384
a,a,a-Trifluorotoluene(PID)				99.85	54-144					WG557384
TPH (GC/FID) Low Fraction	mg/kg	322.	338.	107.	55-109	4.86	20	L537575-01		WG557384
a,a,a-Trifluorotoluene(FID)				97.74	59-128					WG557384
a,a,a-Trifluorotoluene(PID)				106.5	54-144					WG557384
TPH (GC/FID) High Fraction	ppm	41.4	41.0	69.0	50-150	0.929	25	L538081-04		WG557181
o-Terphenyl				66.01	50-150					WG557181

Batch number /Run number / Sample number cross reference

WG557254: R1871834: L538081-01 02 03
WG557384: R1872274: L538081-04
WG557165: R1872493: L538081-03
WG557181: R1872873: L538081-04
WG557177: R1874397: L538081-03 04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

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Est. 1970

September 28, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.