

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Dugan Production	OGRID 004515
Contact Name: Neil Haws	Contact Telephone: 505-635-3124
Contact email: neil.haws@duganproduction.com	Incident # NCS1828941804
Contact mailing address : 4100 W. Piedras St. Farmington, NM 87401	

Location of Release Source

Latitude 36.445384 Longitude -108.185361
(NAD 83 in decimal degrees to 5 decimal places)

NMOC

OCT 25 2018

DISTRICT III

Site Name: West Bisti SWD #1	Site Type
Date Release Discovered: 9-27-18	API# 30-04533828

Unit Letter	Section	Township	Range	
G	35	26N	13W	San Juan

DENIED

BY: Cory Smith

DATE: 9/14/18 (505) 334-6178 Ext. 115 *Sent Email*

Surface Owner: ☐ State ☐ Federal ☒ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) Approx 10 bbls	Volume Recovered (bbls) Approx 10 bbls or less
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: System over pressured casing rupture disk on the knockout to rupture. This caused the crude oil to begin dumping into the pit. Pit filled and overflowed onto the ground flowing down grade (NW) approximately 52 feet where it collected in a low spot in the road.

19

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Wednesday, November 14, 2018 11:32 AM
To: 'Kevin Smaka'; Fields, Vanessa, EMNRD; 'bertha.spencer@BIA.gov'
Cc: 'Neil Haws'; 'John Alexander'; 'Johnny Lane'; 'Mike Sandoval'; Powell, Brandon, EMNRD
Subject: RE: WEST BISTI #1 SWD incident# NCS1828941804

Neil,

OCD received the Final C-141 closure report for the West Bisti SWD #1 30-045-33828 incident# nCS1828941804 on October 25, 2018.

The final C-141 has been denied for the following reasons

- Dugan needs to include in the Closure report documents supporting the chosen closure criteria, ie (Topo maps showing distances to nearest surface waters/significant water course, springs, wetlands flood plains, subsurface mines etc. Also need to include information for determining depth to water typically found in Water/cathodic wells etc.

Please resubmit the final C-141 with all the required attachments within the 90 days from the Date of Discovery (9/27/18)

If you have any questions please give me a call.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Smith, Cory, EMNRD
Sent: Friday, October 19, 2018 8:14 AM
To: 'Kevin Smaka' <Kevin.Smaka@duganproduction.com>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; bertha.spencer@BIA.gov
Cc: Neil Haws <Neil.Haws@duganproduction.com>; John Alexander <John.Alexander@duganproduction.com>; Johnny Lane <Johnny.Lane@duganproduction.com>; Mike Sandoval <Mike.Sandoval@duganproduction.com>
Subject: RE: WEST BISTI #1 SWD

Kevin,

Please follow up with a C-141 closure report as required by 19.15.29.12 NMAC

Thanks,

Cory Smith

Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Kevin Smaka <Kevin.Smaka@duganproduction.com>
Sent: Thursday, October 18, 2018 3:32 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; bertha.spencer@BIA.gov
Cc: Neil Haws <Neil.Haws@duganproduction.com>; John Alexander <John.Alexander@duganproduction.com>; Johnny Lane <Johnny.Lane@duganproduction.com>; Mike Sandoval <Mike.Sandoval@duganproduction.com>
Subject: [EXT] FW: WEST BISTI #1 SWD

Dear sir or madam,

Dugan has the sampling results from a spill at Dugan's WBU #1, API # 30-045-33828, G-35-26N-13W. After checking the depth to ground water and reviewing table #1 from the NMOCD's "Spill Rule" it is our companies opinion that remediation of the spill was successful. We will begin backfilling the site as early as tomorrow.

If you have questions or concerns about Dugan filling in the remediation area please let me know as soon as possible!

Kevin Smaka
Regulatory Engineer
Dugan

From: Mike Sandoval
Sent: Wednesday, October 17, 2018 1:55 PM
To: Johnny Lane
Cc: Kevin Smaka
Subject: Fwd: WEST BISTI #1 SWD

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

From: Celey Keene <celey.keene@cardinallabsnm.com>
Date: 10/17/18 1:27 PM (GMT-07:00)
To: Mike Sandoval <Mike.Sandoval@duganproduction.com>
Subject: WEST BISTI #1 SWD


THANK YOU,

Celey Keene
Lab Director

Incident ID	
District RP	
Facility ID	
Application ID	

<p>Was this a major release as defined by 19.15.29.7(A) NMAC?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>If YES, for what reason(s) does the responsible party consider this a major release?</p>
<p>If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?</p> <p>Jean Bia with the Navajo Nation EPA UIC Program was on location and was the person who discovered the spill. Neil Haws called NMOCD Cory Smith on 9-27-18 at approx. 1533 hrs. and followed up with e-mail later that afternoon.</p>	

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Neil Haws #31</u>	Title: <u>Environmental</u>
Signature: 	Date: <u>10-8-18</u>
email: <u>neil.haws@duganproduction.com</u>	Telephone: <u>505-635-3124</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>85</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: Each of the following items must be included in the report.

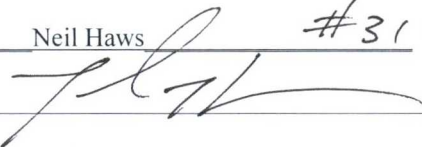
<input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
<input checked="" type="checkbox"/> Field data
<input checked="" type="checkbox"/> Data table of soil contaminant concentration data
<input checked="" type="checkbox"/> Depth to water determination
<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
<input type="checkbox"/> Boring or excavation logs
<input checked="" type="checkbox"/> Photographs including date and GIS information
<input checked="" type="checkbox"/> Topographic/Aerial maps
<input checked="" type="checkbox"/> Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Neil Haws #31 Title: Environmental
Signature:  Date: 10-22-18
email: neil.haws@dugan production.com Telephone: 505-635-3124

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Neil Haws #31 Title: EnvironmentalSignature:  Date: 10-22-18email: neil.haws@duganproduction.com Telephone: -**OCD Only**Received by: _____ Date: 505-635-3124☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

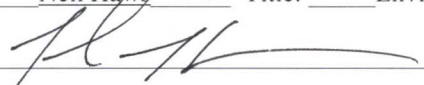
Closure-

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are referred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate OCD District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Neil Haws #31 Title: Environmental
Signature:  Date: 10-22-18
Email: neil.haws@duganproduction.com Telephone: 505-635-3124

OCD Only

Received by:  Date: 10/25/18

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

DENIED

West Bisti #1 SWD

9-27-18

Remediation plan:

Upon discovery of release, the release was immediately shut off. Area where crude oil collected was a low spot in the dirt roadway and was contained in the low spot. The standing liquids (crude oil) was removed by a water truck. A crew arrived and began removing stained/wet dirt in impacted area for later removal to an approved land farm.

9/28/18

Crew finished removing stained soil from impacted spill area (from pit to roadway)

Further remediation

- Contaminated soil will be removed to an approved land farm
- Soil Samples will be will be conducted with 2 a day notice to NMOCD.
- Upon lab results meeting standards of Table 1 clean soil will be used to backfill area

Continued:

10/3/18

Contaminated soil was removed to Envirotech land farm

10/9/18

After a verbal sampling notification, soil samples were taken from the affected spill area from 4 different points. Samples sent to Cardinal Laboratories.

10/17/18

Test results received, all sample concentrations are less than parameters listed in table 1.



10/22/18

Site will be backfilled as soon as possible


West Bisti #1 SWD

Soil Sampling map

Legend

-  Release Area
-  Soil Sample

Soil Sample 4
Soil Sample 3
Soil Sample 2
Soil Sample 1

 West Bisti 1 SWD

Google earth

© 2013 Google



100 ft

October 17, 2018

MIKE SANDOVAL

DUGAN PRODUCTION

P. O. BOX 420

FARMINGTON, NM 87499

RE: WEST BISTI #1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 10/12/18 12:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

DUGAN PRODUCTION
MIKE SANDOVAL
P. O. BOX 420
FARMINGTON NM, 87499
Fax To: (505) 327-4043

Received:	10/12/2018	Sampling Date:	10/09/2018
Reported:	10/17/2018	Sampling Type:	Soil
Project Name:	WEST BISTI #1 SWD	Sampling Condition:	Cool & Intact
Project Number:	WEST BISTI UNIT #1 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: # 1 WEST BISTI UNIT #1 SWD (H802936-01)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/16/2018	ND	2.27	114	2.00	0.142	
Toluene*	<0.050	0.050	10/16/2018	ND	2.14	107	2.00	0.735	
Ethylbenzene*	<0.050	0.050	10/16/2018	ND	2.11	106	2.00	0.142	
Total Xylenes*	<0.150	0.150	10/16/2018	ND	6.33	106	6.00	0.151	
Total BTEX	<0.300	0.300	10/16/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 97.4 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/16/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/15/2018	ND	202	101	200	11.1	
DRO >C10-C28*	315	10.0	10/15/2018	ND	211	106	200	7.80	
EXT DRO >C28-C36	122	10.0	10/15/2018	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 97.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 DUGAN PRODUCTION
 MIKE SANDOVAL
 P. O. BOX 420
 FARMINGTON NM, 87499
 Fax To: (505) 327-4043

Received:	10/12/2018	Sampling Date:	10/09/2018
Reported:	10/17/2018	Sampling Type:	Soil
Project Name:	WEST BISTI #1 SWD	Sampling Condition:	Cool & Intact
Project Number:	WEST BISTI UNIT #1 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: # 2 WEST BISTI UNIT #1 SWD (H802936-02)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/16/2018	ND	2.27	114	2.00	0.142	
Toluene*	<0.050	0.050	10/16/2018	ND	2.14	107	2.00	0.735	
Ethylbenzene*	<0.050	0.050	10/16/2018	ND	2.11	106	2.00	0.142	
Total Xylenes*	0.229	0.150	10/16/2018	ND	6.33	106	6.00	0.151	
Total BTEX	<0.300	0.300	10/16/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 102 % 69.8-142

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/16/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.3	10.0	10/15/2018	ND	202	101	200	11.1	
DRO >C10-C28*	439	10.0	10/15/2018	ND	211	106	200	7.80	
EXT DRO >C28-C36	92.5	10.0	10/15/2018	ND					

Surrogate: 1-Chlorooctane 85.0 % 41-142

Surrogate: 1-Chlorooctadecane 91.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

DUGAN PRODUCTION
MIKE SANDOVAL
P. O. BOX 420
FARMINGTON NM, 87499
Fax To: (505) 327-4043

Received:	10/12/2018	Sampling Date:	10/09/2018
Reported:	10/17/2018	Sampling Type:	Soil
Project Name:	WEST BISTI #1 SWD	Sampling Condition:	Cool & Intact
Project Number:	WEST BISTI UNIT #1 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: # 3 WEST BISTI UNIT #1 SWD (H802936-03)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/16/2018	ND	2.34	117	2.00	2.35	
Toluene*	<0.050	0.050	10/16/2018	ND	2.18	109	2.00	2.14	
Ethylbenzene*	<0.050	0.050	10/16/2018	ND	2.20	110	2.00	0.294	
Total Xylenes*	<0.150	0.150	10/16/2018	ND	6.47	108	6.00	0.785	
Total BTEX	<0.300	0.300	10/16/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.3 % 69.8-142

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/16/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/15/2018	ND	202	101	200	11.1	
DRO >C10-C28*	16.9	10.0	10/15/2018	ND	211	106	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	10/15/2018	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 90.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 DUGAN PRODUCTION
 MIKE SANDOVAL
 P. O. BOX 420
 FARMINGTON NM, 87499
 Fax To: (505) 327-4043

Received:	10/12/2018	Sampling Date:	10/09/2018
Reported:	10/17/2018	Sampling Type:	Soil
Project Name:	WEST BISTI #1 SWD	Sampling Condition:	Cool & Intact
Project Number:	WEST BISTI UNIT #1 SWD	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: # 4 WEST BISTI UNIT #1 SWD (H802936-04)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/16/2018	ND	2.34	117	2.00	2.35	
Toluene*	<0.050	0.050	10/16/2018	ND	2.18	109	2.00	2.14	
Ethylbenzene*	<0.050	0.050	10/16/2018	ND	2.20	110	2.00	0.294	
Total Xylenes*	<0.150	0.150	10/16/2018	ND	6.47	108	6.00	0.785	
Total BTEX	<0.300	0.300	10/16/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 96.3 % 69.8-142

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/16/2018	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/15/2018	ND	202	101	200	11.1	
DRO >C10-C28*	<10.0	10.0	10/15/2018	ND	211	106	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	10/15/2018	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 92.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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[illegible]

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Relinquished By: <i>[Signature]</i>		Date: <i>10-9-18</i> Time: <i>3:55</i>	Received By: <i>Christa Clark</i>	ADDITIONAL REMARKS: Report to State? (Circle) Yes No
Relinquished By: <i>Christa Clark</i>	Date: <i>10/9/18</i> Time: <i>1655</i>	Received By: <i>Kangaroo Express</i>		
Relinquished By: <i>Kangaroo Express</i>	Date: <i>10/10/18</i> Time: <i>1853</i>	Received By: <i>[Signature]</i>		
Delivered By: (Circle One) <i>10/12/18</i> Sampler - UPS - <u>fedex</u> - Kangaroo - Other: <i>Jamara Oldak</i>		Temperature at receipt: <i>4.5 C</i> <i>2 min</i>	CHECKED BY: <i>a</i>	
				<i>3.0/2.8 C</i> <i>#1 on ice in DGO</i>

† GAL cannot always accept verbal changes. Please fax or email written change requests.

* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.



